

Assessment of competition problems in the retail TI low bandwidth leased lines market

10.12 We set out below our assessment of the competition problems in this retail market before setting out the remedies¹⁰⁷¹ we have concluded, having considered consultation responses, are appropriate to address those problems.

Competition problems identified in the retail TI very low bandwidth market

10.13 In light of our SMP assessment, we set out below the competition problems we have identified in the retail TI very low bandwidth market and which behaviour, in the absence of ex-ante regulation, we have concluded BT would have the incentive, and its market power would afford it the ability, to:

- refuse to supply retail TI very low bandwidth leased lines;
- charge excessively high prices;
- engage in unduly discriminatory pricing practices – e.g. by charging certain groups of end users more than others; and
- engage in unduly discriminatory non-pricing practices – e.g. by offering certain groups of end users different terms/conditions from others, different quality of service or different provision or repair timescales.

10.14 We have concluded BT would have an incentive to engage in these practices in order to restrict retail competition or oblige end users to use alternative products, thereby preventing end users from deriving maximum benefit in terms of choice, price and quality.¹⁰⁷²

Insufficiency of national and Community competition law remedies

10.15 We have concluded that national and Community competition law remedies would be insufficient to address the competition problems we have identified.¹⁰⁷³ In reaching this conclusion, we have regard to our general assessment of the sufficiency of competition law set out in our Approach to remedies section and in Annex 6 on the Market Review Process as relevant to addressing the competition problems in TI very low bandwidth retail market in the UK excluding the Hull area. In particular:

- we do not consider appropriate remedies could be imposed under competition law – e.g. imposing an obligation to supply under certain circumstances and a form of price control;
- we consider the requirements of intervening are extensive – e.g. the time and resources required not only to investigate whether national or Community competition law has indeed been breached, but also to determine an appropriate

¹⁰⁷¹ This approach is consistent with our approach in the June BCMR Consultation.

¹⁰⁷² One of the tasks required of national regulatory authorities, such as ourselves, by the Framework Directive is the promotion of “competition in the provision of electronic communications networks, electronic communications services and associated facilities and services by *inter alia* ensuring that users...derive maximum benefit in terms of choice, price and quality” (see Article 8(2)). See also, in this respect, Ofcom’s statutory duties under the Act, in particular sections 3(5) and 4(3).

¹⁰⁷³ This is consistent with our view in the June BCMR Consultation.

remedy and then the need to monitor any imposed terms and conditions as part of the appropriate remedy;

- we consider that providing certainty in this retail market is of paramount concern, both to BT and to its competitors, and we consider this to be best achieved through ex-ante regulation which, compared to competition law remedies, would:
 - provide greater clarity on the types of behaviour that are/are not allowed; and
 - be easier to enforce in that it would allow for timely intervention through a process with which the market in general is familiar and which is set out in the Act.

Result of our assessment of the competition problems

10.16 In light of our market analysis, in particular our SMP assessment; and of our assessment of the insufficiency of national and Community competition law remedies to address the competition problems we have identified; we have concluded, as per our view in the June BCMR Consultation, that over the course of the review period of three years, competition would be ineffective in the TI very low bandwidth retail market.

10.17 We now turn to the approach we adopted in the June BCMR Consultation which followed on from our assessment of the competition problems.

Approach in the June BCMR Consultation

10.18 In the June BCMR Consultation we proposed to define a retail leased lines market for low bandwidth TI leased lines in the UK excluding the Hull area at bandwidths up to and including 8Mbit/s. As discussed in Section 3, after further consideration we have revised our market definition such that we now define a retail leased line market for very low bandwidth TI leased lines in the UK excluding the Hull area at bandwidths below 2Mbit/s.

10.19 Below we set out:

- those parts of the assessment that we carried out in the June BCMR Consultation that are relevant to our revised market definition in light of our view that, over the course of the review period of three years, competition would be ineffective in the TI very low bandwidth retail market; and
- our proposed remedies.

10.20 In the June BCMR assessment we considered separately the case for remedies for four product segments in this market, namely analogue circuits, sub 2Mbit/s digital circuits, 2Mbit/s digital circuits and 8Mbit/s digital circuits. Consequently our assessment of the appropriate remedies for the revised market definition has not been materially altered by our decision to change the market definition.

Assessment of appropriate remedies

10.21 Under section 91(2) of the Act¹⁰⁷⁴ we may only impose retail regulation where wholesale regulation in the upstream market would not suffice to achieve our duties

¹⁰⁷⁴ Implementing Article 17(1) of the Universal Service Directive.

and objectives in the relevant downstream – i.e. retail – market. Consequently, an important aspect of our assessment was whether the upstream wholesale remedies allow CPs effectively to replicate BT's retail services using wholesale inputs and whether retail competition had become sufficiently strong for us to relax retail regulation partially or wholly.

- 10.22 We first set out developments since the 2007/08 Review that we considered were relevant to informing our assessment of appropriate remedies.

Withdrawal of analogue and sub 2Mbit/s digital services

- 10.23 Since the 2007/08 Review BT has delayed the withdrawal of analogue and sub 2Mbit/s digital services to give users such as the energy utilities more time to migrate to other services. Where demand remains commercially viable BT now intends to support these services until March 2018 and has also committed to give at least three years notice if it decides to bring the withdrawal date forward for individual services.¹⁰⁷⁵
- 10.24 Recognising the critical nature of the utilities' telemetry applications, BT has also established a regular dialogue with the electricity utilities via the Energy Networks Association. The utilities have made arrangements to migrate their telemetry applications away from the analogue and 2Mbit/s digital services and are keeping BT informed of the progress of their migration programmes.

New voluntary undertakings for sub 2Mbit/s services

- 10.25 In April 2011, we accepted new voluntary undertakings from BT¹⁰⁷⁶ in which BT undertook to:
- continue to supply new analogue retail circuits until December 2013 or earlier if, subject to industry agreement and our consent, the underlying platform is closed at an earlier date; and
 - continue to supply new sub 2Mbit/s digital retail circuits until December 2013 or earlier if, subject to industry agreement and our consent, the underlying platform is closed at an earlier date.
- 10.26 At the same time, we were unable to agree a new price cap with BT for analogue leased lines for the years 2011-12, so a cost orientation obligation came into effect, as envisaged for such circumstances in the 2007/08 Review.

Replicability

- 10.27 An important element of our approach as set out in the Telecoms Strategic Review¹⁰⁷⁷ was that we anticipated that once 'replicability' had been achieved for BT's retail services it would be possible for us to concentrate our regulatory intervention at the wholesale level and ultimately withdraw ex-ante regulation at the retail level.

¹⁰⁷⁵ http://www.globalservices.bt.com/CampaignDetailAction.do/Campaigns/tdm-services/param/Record/tdm_services_campaign_all_en-gb/fromPage/Furl/chapterKey/1

¹⁰⁷⁶ <http://stakeholders.ofcom.org.uk/consultations/bcmr08/renewal/>

¹⁰⁷⁷ http://stakeholders.ofcom.org.uk/consultations/statement_tsr/

- 10.28 Replicability is an important regulatory threshold. It reflects the availability of fit-for-purpose wholesale inputs from BT which allow its competitors to replicate BT's retail products effectively, both technically and commercially. Therefore, once replicability is achieved, we would expect competition downstream to improve significantly, with benefits for customers in terms of lower prices and more choice of services and providers.
- 10.29 The technical and commercial issues that we considered to be barriers to replicability of low bandwidth retail leased lines were set out in the Replicability Statement, published in 2006¹⁰⁷⁸.
- 10.30 In the 2007/08 Review we concluded that BT had not fully addressed the replicability issues. We therefore maintained the pricing obligations and non-discrimination obligations and encouraged BT to address these issues.
- 10.31 We proposed that once BT had addressed the impediments to competitors effectively replicating BT's retail digital circuits at bandwidths up to 2Mbit/s from BT's wholesale inputs, we would consider relaxing retail pricing restrictions applied to BT as a result of its SMP. In particular we said that, once replicability had been achieved, we would consider granting BT the freedom to set bespoke prices for these services and relaxing the presumption that bundles of SMP and non SMP products are anti-competitive.
- 10.32 In November 2008, BT wrote to us setting out how it considered it had addressed the replicability issues identified in the Replicability Statement. Consequently, in June 2009 we published the 2009 Replicability Consultation¹⁰⁷⁹. This set out our provisional view that replicability had been achieved and therefore BT's low bandwidth digital leased lines could be replicated by its competitors. Consequently we proposed that BT should be given greater pricing freedom.
- 10.33 We subsequently suspended work pending the outcome of the Leased Lines Charge Control Appeal (LLCC Appeal)¹⁰⁸⁰. In light of the delay and subsequent developments in the market, in 2011 we decided to defer consideration of the replicability proposals to this market review.
- 10.34 In the June BCMR Consultation we reviewed the responses to the 2009 Replicability Consultation and reported that we remained of the view that BT's competitors can replicate BT's sub 2Mbit/s and 2Mbit/s digital products using wholesale inputs.¹⁰⁸¹ Consequently in the June BCMR Consultation we considered whether there was scope to relax retail regulation.
- 10.35 Taking these developments into account, we then set out our assessment of appropriate remedies for, respectively:
- analogue services; and

¹⁰⁷⁸ Entitled "The replicability of BT's regulated business services and the regulation of business markets" (<http://www.ofcom.org.uk/consult/condocs/busretail/statement/>). Annex 9 of the June BCMR Consultation provides further background and lists the replicability issues.

¹⁰⁷⁹ Entitled "Replicability and the regulation of BT's low bandwidth leased lines" (http://stakeholders.ofcom.org.uk/consultations/low_bandwidth/).

¹⁰⁸⁰ <http://www.catribunal.org.uk/237-4334/1112-3-3-09-Cable--Wireless-UK.html>.

¹⁰⁸¹ See paragraphs 9.41 to 9.43, and Annex 9, of the June BCMR Consultation.

- sub 2Mbit/s services.

Analogue services

- 10.36 We noted that, according to our SMP assessment, BT had a 96% share of retail sales of analogue services, almost unchanged since the 2007/08 Review, and that volumes have been in steady decline as end users migrate to more modern services.
- 10.37 We also noted there are currently no upstream wholesale services available to CPs and, given the legacy nature of these services and their impending withdrawal, we considered there is little prospect retail competition would increase even if we were to require BT to offer wholesale services to CPs. We therefore considered that wholesale regulation would be insufficient to perform our duties in relation to these services.
- 10.38 Due to the virtual absence of retail competition for these services, we considered competition is unlikely to constrain BT's conduct during the period covered by our review and consequently we considered that *ex-ante* retail regulation was needed to address the competition problems we identified.

Refusal to supply

- 10.39 We remained of the view that these services should be regarded as legacy services that are approaching the end of their life. Our main concern in relation to refusal to supply related to the withdrawal arrangements and in particular the need to ensure that end users were provided with adequate notice of service withdrawal.
- 10.40 We noted that in order to address the concerns of the utility companies and other users with critical applications, BT had significantly delayed the withdrawal of analogue circuits and had given a public commitment to give end users at least three years' notice of the withdrawal of analogue circuits and to consult key stakeholders should it decide to bring forward the withdrawal date from March 2018.¹⁰⁸²
- 10.41 Given the critical nature of some of the services that use these leased lines we considered it was appropriate to retain regulatory oversight of their withdrawal. We proposed that BT should be subject to an obligation to supply retail analogue leased lines that would:
- not require BT to supply new analogue circuits;
 - require BT to supply existing analogue services until it gives end users and us notice of at least one year of their withdrawal; and
 - require BT to comply with directions we may make in relation to the condition.
- 10.42 We considered it was appropriate to impose a minimum notice period for service withdrawal as a backstop, in order to provide additional assurance to end users that sufficient notice would be given to allow them to migrate critical applications to alternative services. On balance, we considered that a one year notice period would be adequate as a backstop for this purpose and would not interfere with the commercial arrangements that BT had proposed.

¹⁰⁸² http://www.globalservices.bt.com/CampaignDetailAction.do/Campaigns/tdm-services/param/Record/tdm_services_campaign_all_en-gb/fromPage/Furl/chapterKey/1

Excessive pricing

- 10.43 In light of our SMP assessment, we noted BT's entrenched position of SMP which arose, in particular, as a result of the absence of a wholesale input product, the legacy nature of analogue services and their impending withdrawal. We also identified that BT's profitability was high. We therefore considered there was a risk that BT might use its position to charge excessive prices. Given the circumstances, we considered that a specific charging constraint in the form of a safeguard cap was appropriate, and that setting the cap at the same level as the basket cap on wholesale TISBO and trunk charges would both provide an appropriate level of protection and allow BT to recover a reasonable level of retail and network costs.

Undue discrimination

- 10.44 In order to address the risk that BT might engage in unduly discriminatory conduct we considered it appropriate that BT should be subject to an obligation not to do so. In the absence of such a requirement we considered that BT would have the incentive to discriminate against particular groups of retail customers (such as those least able to switch to AI services) by charging excessive prices, imposing unfair terms or offering inadequate quality of service.
- 10.45 To provide transparency and to support this obligation we considered that BT should also be subject to a requirement to publish a reference offer specifying prices and other terms and conditions.

Sub 2Mbit/s digital services

- 10.46 This segment of the market has some similarities to the analogue circuits assessed above. As noted in Section 7, BT retains a high share of retail sales of these services and volumes are in steady decline. These services are provided on the same platform as some of the analogue services (BT's DPCN platform) and BT announced the withdrawal of these services in conjunction with the analogue services – i.e. by March 2018 at the latest. An important difference is that, unlike the analogue services, BT provides upstream wholesale inputs in the form of PPCs.
- 10.47 The approach that we adopted in the 2007/08 was partially successful. BT addressed the barriers to replicability and responded positively to stakeholder concerns about the withdrawal of these services by delaying their withdrawal. However, competition did not develop as expected. In the presence of replicability we had expected retail competition to improve significantly with benefits for customers in terms of lower prices and more choice of services and providers.
- 10.48 In the June BCMR Consultation we reported that although BT's share of this product segment fell from 79% in 2007 to 73%, it remained significantly higher than its share of 2Mbit/s services, which fell from 60% to 45% over the same period. We have since revised our service share calculations and now estimate that BT's share of sub 2Mbit/s services has fallen to 54% and its share of 2Mbit/s services has fallen to 34%.
- 10.49 The reason for these differences may be that sub 2Mbit/s services are declining more rapidly than 2Mbit/s services. Sub 2Mbit/s services are increasingly regarded as legacy services by both CPs and end users. CPs told us that most of the remaining activity in this segment is related to migrating users to more modern services where possible. We were also told that consolidation is occurring as CPs with lower volumes find it unprofitable to continue to support them. Given the circumstances, the

prospects for increased competition appeared weak and there was some prospect of further consolidation of supply.

10.50 As set out above, under section 91(2) of the Act we have an obligation to consider whether the imposing of wholesale regulation in the upstream market suffices to achieve our duties and objectives in the relevant downstream market. Therefore, with replicability achieved, we considered whether we could take steps to relax retail regulation either by removing it or by implementing the replicability proposals set out in the TSR. However:

- in relation to removing ex-ante retail regulation, we considered relying on wholesale regulation for sub 2Mbit/s would not address the competition problems we identified.
- in relation to implementing the replicability proposals, we considered this would also not address the competition problems we identified.

10.51 Consequently, we considered some form of ex-ante retail regulation was required.

Refusal to supply

10.52 We remained of the view that these services should be regarded as legacy services that are approaching the end of their life. It would have been inappropriate for us to seek to extend the availability of these services artificially. We therefore considered that it would be disproportionate to require BT to supply new services and we proposed not to seek a further voluntary undertaking from BT in relation to the supply of new services beyond December 2013 as provided for in the existing voluntary undertaking.

10.53 Thus our main concern in relation to refusal to supply related to the withdrawal arrangements and in particular the need to ensure that end users were provided with adequate notice of service withdrawal.

10.54 We noted that in order to address the concerns of the utility companies and other users with critical applications, BT had delayed significantly the withdrawal of sub 2Mbit/s digital circuits and gave a public commitment to give end users at least three years' notice of the withdrawal of sub 2Mbit/s digital circuits and to consult key stakeholders should it decide to bring forward the withdrawal date from March 2018.

10.55 Given the critical nature of some of the services that use these leased lines we considered that it was appropriate to retain regulatory oversight of their withdrawal. We proposed that BT should be subject to an obligation to supply retail sub 2Mbit/s digital leased lines that would:

- not require BT to supply new sub 2Mbit/s digital circuits;
- require BT to supply existing sub 2Mbit/s digital services until it gives end users and us notice of at least one year of their withdrawal; and
- require BT to comply with directions we may make in relation to the condition.

10.56 We considered it was appropriate to impose a minimum notice period for service withdrawal as a backstop to provide additional assurance to end users that sufficient notice would be given to allow end users to migrate critical applications to alternative services. On balance, a one year notice period was in our view adequate as a

backstop for this purpose and would not interfere with the commercial arrangements that BT had proposed.

- 10.57 We considered that this obligation in conjunction with BT's public commitment should provide end users with sufficient assurance about the withdrawal arrangements and give them sufficient notice to migrate the remaining critical applications to other services.

Excessive pricing

- 10.58 We were less concerned about the risk of excessive pricing of sub 2Mbit/s digital services than of analogue services because retail competition based on upstream wholesale inputs is possible and, in addition, some users may be able to switch to 2Mbit/s services. We considered that as in the 2007/08 Review we could rely on competition to provide a constraint on BT's retail prices and we therefore did not propose to apply price controls to these services.

Undue discrimination

- 10.59 In order to address the risk that BT might engage in unduly discriminatory conduct we considered that it would be appropriate that BT be subject to an obligation not to discriminate unduly. In the absence of such a requirement BT would have the incentive to discriminate against particular groups of retail customers by charging excessive prices, imposing unfair terms or offering inadequate quality of service.
- 10.60 To provide transparency and to support this obligation we considered that BT should also be required to publish a reference offer specifying charges, terms and conditions.

Remedies proposed in the June BCMR Consultation

- 10.61 Our proposed remedies were the result of the cumulative application of the following:

- our assessment of the competition problems in the TI very low bandwidth retail market, in which:
 - we identified what they were, in light of our market analysis, in particular our SMP assessment;
 - we set out our view that national and Community competition law remedies would be insufficient to address those competition problems;
 - as a result, we set out our view that over the course of the review period of three years, competition would be ineffective in the market.
- our assessment of remedies appropriate to address the identified competition problems, which included our reasoning as to why wholesale regulation in the relevant upstream market would not suffice to achieve our duties and objectives with regard to this retail market.

- 10.62 The table below summarises the competition problems we have identified in this market and the remedies we have concluded are appropriate to address them.

Summary of competition issues and remedies for BT

Competition issues	Remedies
<ul style="list-style-type: none"> Refusal to supply 	<ul style="list-style-type: none"> Obligation to supply existing retail services and to give no less than one year's notice of withdrawal
<ul style="list-style-type: none"> Price discrimination Non price discrimination 	<ul style="list-style-type: none"> Obligation not to discriminate unduly; and Obligation to publish a reference offer
<ul style="list-style-type: none"> Excessive pricing 	<ul style="list-style-type: none"> In relation to analogue leased lines, safeguard cap on retail prices

Consultation responses

- 10.63 We received few responses to our proposed retail remedies, but those that we did receive were generally supportive of our proposals.
- 10.64 BT said that the remedies were generally appropriate and properly reflective of the legacy nature of the services concerned, noting nevertheless that it disagreed with our market power assessment. BT also noted that it did not consider that remedies are required at all because its existing commercial commitments provided protection to users of residual services, and that at least the obligation to send a copy of the reference offer to Ofcom should be removed on the basis that it is an unnecessary administrative burden given the requirement to publish the offer on the website as well.
- 10.65 SSE welcomed BT's commercial commitment both to support services until 2018 and to provide a three-year notice period prior to withdrawal, but nonetheless endorsed our regulatory proposals as an ultimate protection.
- 10.66 For completeness, we also note that Level 3 commented about 2Mbit/s services which fell within the scope of our original market definition but which fall outside its scope under the revised market definition. Level 3 Communications opposed the removal of supply obligations on 2Mbit/s services, as some existing retail customers require security-accredited products, and commercial or operational risk would arise for some of Level 3's key customers if such a product, or an appropriate alternative, were not available.

Our consideration of the consultation responses

- 10.67 We have addressed BT's concerns with our market power assessment in Section 7. As a result of our analysis of this retail market we have concluded BT has both the ability and incentive to behave to an appreciable extent independently of competitors and ultimately consumers, in particular to refuse to supply, to price excessively and to engage in unduly discriminatory practices. These competition problems exist despite the parallel existence of BT's commercial commitments which, in its view, provide protection to users of residual services. We are obliged to impose appropriate remedies to address these competition problems and, in doing so, have taken into account both the fact that this market is declining and that it is still the largest market by circuit volume. As a result, our decision to impose remedies also reflects the need, revealed by our market analysis, to provide appropriate certainty to

both BT and the market in general over the course of the review period. Lastly, we do not consider the obligation to send a copy of the reference offer as unduly onerous since the alternative is for us to continuously monitor BT's website for changes; it is more efficient for them, as the originators of the document, to notify us of changes.

10.68 Level 3 Communications' concern is focused on the IL2 security accreditation which will be uniquely held by 2Mbit/s TI leased lines in the period between BT Wholesale's withdrawal of its Datastream service, and the accreditation of its Wholesale Broadband Connect service and Openreach's Ethernet services. If BT then chose to withdraw 2Mbit/s retail TI leased lines there would be no retail alternative available for Level 3 Communications to offer to those elements of its client base which require this level of security accreditation. We consider, however, that:

- large volumes of 2Mbit/s services are still in use and there is no realistic prospect of BT withdrawing them in the short term;
- in the medium term, IL2 accreditation is likely to be awarded to the newer services; and
- ultimately, wholesale supply obligations we are applying to 2Mbit/s leased lines do provide a further, and sufficient, assurance of availability.

Ofcom's conclusions on the appropriate remedies

10.69 We have concluded that wholesale regulation in the relevant upstream market would not suffice to achieve our duties and objectives with regard to this retail market and that consequently, pursuant to section 91(1) of the Act, the sorts of SMP conditions authorised or required by sections 87 to 89 should be set in this retail market.

10.70 We have concluded that the most appropriate remedies to address the competition problems identified remain those that we proposed in the June BCMR Consultation.

10.71 Our conclusions are the result of our cumulative consideration of:

- our assessment of the appropriate remedies, as set out in the June BCMR Consultation and set out above;
- our considerations of consultation responses; and
- all the evidence available to us.

10.72 In reaching our conclusions we have also taken due account of all applicable guidelines and recommendations issued by the EC, and we have had regard to relevant guidance from the ERG, Oftel and ourselves.

10.73 Below we set out:

- the aim of the remedies that we have concluded should be imposed on BT in the very low bandwidth TI retail market;
- the obligations imposed on BT by the remedies; and
- the reasons why we consider the remedies comply with the relevant legal tests in the Act.

10.74 The SMP conditions which give effect to our conclusions are set out in Annex 7.

Requirement to supply retail leased lines

Aim of regulation

10.75 As discussed above, given the critical nature of some of the services that use analogue and sub 2Mbit/s digital leased lines, it is important that end users are given adequate notice of their withdrawal. BT has given a public commitment that it will give end users three years notice of their withdrawal (subject to certain conditions); we consider this should give end users sufficient notice, particularly as BT has already significantly extended the availability of these services in response to end user concerns. However, given the critical nature of some of the services that use leased lines we consider it would be appropriate to retain regulatory oversight of their supply.

SMP Condition

10.76 We have concluded that BT should be subject to an obligation to supply retail analogue leased lines and retail T1 digital leased lines at bandwidths below 2Mbit/s. This obligation:

- does not require BT to supply new circuits;
- requires BT to supply existing services until it gives end users and us notice of at least one year of their withdrawal;
- requires such supply to be on fair and reasonable terms, conditions and charges; and
- requires BT to comply with directions we may make under the SMP condition in relation to the requirement to supply retail leased lines.

10.77 We consider that this obligation should provide end users with sufficient assurance about the withdrawal arrangements and give them sufficient notice to migrate the remaining critical applications to other services. We note that BT's public commitment about service withdrawal provides some additional assurance to existing end users.

Legal tests

10.78 We are satisfied that the SMP condition in relation to analogue and sub 2Mbit/s digital services meets the various tests set out in the Act.

10.79 First, section 87(3) of the Act authorises the setting of an SMP condition requiring the dominant provider – i.e. in this case BT – to:

- provide network access to its network;
- allow the use of its network; and
- to make available relevant facilities.

10.80 These conditions may, pursuant to section 87(5) of the Act, include provision for securing fairness and reasonableness in the way in which requests for network

access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

10.81 When considering the imposition of such conditions in a particular case, we must take into account six factors set out in section 87(4) of the Act, including, *inter alia*:

- the technical and economic viability of installing and using other facilities, including the viability of other network access products whether provided by the dominant provider or another person¹⁰⁸³, that would make the proposed network access unnecessary;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed (taking account of any public investment); and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

10.82 We have taken all six factors into account in reaching our conclusion that BT should be subject to an obligation to supply retail leased lines.

10.83 Secondly, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP condition furthers the interests of citizens and consumers in relation to communications matters by ensuring that analogue and sub 2Mbit/s services are not withdrawn prematurely.

10.84 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that, absent this obligation, there is a risk BT might withdraw these services with insufficient notice for some end users to install alternative circuits to support critical applications such as electricity network telemetry circuits. This would not be in the interests of such end users and their customers. We have recognised that this concern relates specifically to existing customers, and have therefore limited the obligation accordingly;
- not unduly discriminatory, in that only BT and no other operator has been found to hold a position of SMP in this market and would therefore have the ability and incentive to exploit customers by withdrawing analogue and sub 2Mbit/s digital services with inadequate notice to end users;
- proportionate, in that it is the least onerous obligation which addresses this particular risk of harm to end users and citizens and will otherwise allow BT to withdraw these legacy services with insufficient notice. In particular, wholesale remedies alone (which we have not, anyway, implemented) would be insufficient in relation to these particular services in the UK because the rapidly declining and legacy nature of the services means there is little prospect that alternative suppliers would step in using wholesale inputs were such services withdrawn by BT with insufficient notice; and

¹⁰⁸³ i.e. A CP other than BT.

- transparent, in that the SMP condition is clear in its intention, and in that the purpose and meaning of the obligation and the reasons for imposing it are clearly explained in this document.

Requirement not to discriminate unduly

Aim of regulation

10.85 In light of our analysis, particularly in relation to the replicability of BT's retail very low bandwidth leased lines from wholesale inputs and about the strength of competition in this market, we consider that it is appropriate that BT should be subject to an obligation not to discriminate unduly in the provision of services at bandwidths below 2Mbit/s. We consider that in the absence of such a requirement, BT would have an incentive to distort competition by discriminating against particular groups of retail customers e.g. through charging higher prices where competition is weak and lower prices where it is stronger. BT would also have an incentive to charge excessive prices, impose unfair terms or offer inadequate quality of service to particular groups of customers.

SMP condition

- 10.86 We have concluded that BT should be subject to an obligation not to discriminate unduly against particular persons or against a particular description of persons, in relation to matters connected with the supply of retail analogue leased lines and retail TI digital leased lines at bandwidths below 2Mbit/s.
- 10.87 Although we do not consider this requires specific provision in the condition, we note that there is a particular risk in relation to saw-tooth discounts which will often be unduly discriminatory, in view of their potentially anti-competitive effects. Saw-tooth discounts are discounts which can lead to a decline in the overall level of charges following an increase in the level of consumption. To give a simple example, a supplier may offer a 10% discount if pre-discount expenditure exceeds £100. If the discount applies to all expenditure, rather than just the incremental expenditure in excess of £100, an increase in volumes, which just triggers the pre-discount expenditure threshold, could lead to a reduction in post-discount spending.
- 10.88 We consider that saw-tooth discounts may often act as a barrier to market entry or expansion and, in a market characterised by SMP, may restrict the development of competition.
- 10.89 We consider that application of a non-discrimination condition should not prevent BT from setting geographically de-averaged tariffs i.e. charging different prices for retail leased lines at different locations (as it does currently for the Central London Zone (CLZ)), provided that in doing so it does not discriminate unduly between customers.

Legal tests

- 10.90 We are satisfied that the SMP condition in relation to analogue and sub 2Mbit/s digital services meets the various tests set out in the Act.
- 10.91 First, section 87(6)(a) of the Act authorises the setting of an SMP condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with network access relevant network or with the availability of the relevant facilities.

- 10.92 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the condition is aimed at preventing the distortion of competition and harm to particular groups of end users in the form of high prices, unfair terms or inadequate service that might occur if BT had the freedom to unduly discriminate in the provision of services at bandwidths below 2Mbit/s.
- 10.93 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, proportionate and transparent. The SMP condition is:
- objectively justifiable, in that BT would otherwise be able to distort competition by discriminating against particular groups of retail customers – e.g. through charging high prices where competition is weak and lower prices where it is stronger. It also ensures that BT does not abuse its SMP position by charging excessive prices, imposing unfair terms or offering inadequate quality of service to particular groups of customers. The requirement therefore promotes competition and furthers the interests of consumers;
 - not unduly discriminatory, in that only BT and no other operator has been found to hold a position of SMP in this market and would therefore have the ability and incentive to exploit customers by charging excessive prices, imposing unfair terms or offering inadequate quality of service. Indeed, in relation to analogue services, BT is the only supplier of such services in the UK, and competition remains weak in sub 2Mbit/s digital services. Therefore, no other operator would have the incentive and ability to distort competition by setting discriminatory prices, terms or conditions;
 - proportionate, in that it is the least onerous obligation which addresses this particular risk of harm to competition and also because we have limited the scope of the obligation to those services which we consider most susceptible to this type of harm – i.e. analogue and sub 2Mbit/s digital services. As noted in relation to the obligation to supply, we do not consider wholesale remedies (which we have not, anyway, implemented) would be sufficient because there is little prospect that alternative suppliers would step in using wholesale inputs were BT to charge excessive prices, impose unfair terms or offer inadequate quality of service; and
 - transparent, in that the condition is clear in its intention, and in that the purpose and meaning of the obligation and the reasons for imposing it are clearly explained in this document.

Requirement to publish a reference offer (setting out prices, terms and conditions) and same day price notification

Aim of regulation

- 10.94 The publication provision has an important role in the regulation of BT's activities in this market because it provides transparency over pricing. In conjunction with the non-discrimination obligation, the effect is to prevent BT from bundling very low bandwidth leased lines together with other, non-SMP, services and from offering bespoke prices in order to secure business contracts against competition from other CPs.
- 10.95 In light of our analysis discussed above, particularly in relation to the replicability of BT's retail low bandwidth leased lines from wholesale inputs and about the strength

of competition in this market, we consider that it is appropriate to retain a requirement for BT to publish a reference offer for analogue and sub 2Mbit/s retail leased lines. This is because wholesale inputs are not available for analogue services and although we consider that sub 2Mbit/s services are fully replicable from wholesale inputs, given the relative weakness of competition we consider the risk of adverse consequences of relaxing these obligations to be greater than the potential benefits.

SMP condition

10.96 We have concluded that BT should be subject to an obligation requiring it to publish a reference offer for retail TI leased lines services at bandwidths below 2Mbit/s that includes at least the following:

- the technical characteristics of the services including the physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point;
- charges, including the initial connection charges, the periodic rental charges and other charges;
- information concerning the ordering procedure;
- contractual details; and
- any refund procedure.

10.97 The obligation also prevents BT from departing from the terms specified in the reference offer except with our permission and it also obliges BT to comply with any directions we may make under the SMP condition in relation to its reference offer.

Legal tests

10.98 We are satisfied that the SMP condition in relation to analogue and sub 2Mbit/s digital TI services meets the various tests set out in the Act.

10.99 First, section 87(6) of the Act authorises the setting of SMP conditions that require the dominant provider to publish information about network access to ensure transparency and to publish terms and conditions.

10.100 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP condition is aimed at preventing BT from using bundling or bespoke (hidden) discounts in a way which could harm competition and consequently the interests of citizens and consumers.

10.101 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that it provides certainty to operators and prevents BT from withholding information from customers and competitors, or misusing information in a way which could harm competition, which would be a real risk in the absence of the condition. In addition it facilitates monitoring of compliance with the other obligations, notably the obligation not to unduly discriminate;

- not unduly discriminatory, in that BT and no other operator has been found to hold a position of SMP in this market and would therefore have the ability and incentive to exploit customers by withholding or misusing information;
- proportionate, in that it is targeted at addressing the market power that BT holds in this market, and in that the information which BT is obliged to publish is necessary to prevent it from using bundling or bespoke (hidden) discounts in a way which could harm competition. This is necessary because wholesale remedies have not been fully effective in removing BT's retail market power (there is moreover, no wholesale analogue product). The transparency obligations support the other conditions imposed to address BT's SMP in this market. Without this information CPs would be unable to compete fairly with BT. As noted in relation to the obligation to supply, we do not consider wholesale remedies would be sufficient because there little prospect that alternative suppliers would step in using wholesale inputs were BT to withhold or misuse information. Additionally, a wholesale remedy would not be capable of supporting the other obligations at the retail level referred to above; and
- transparent, in that the SMP condition is clear in its intention, and in that the purpose and meaning of the obligation and the reasons for imposing it are clearly explained in this document.

Safeguard cap charge control

Aim of regulation

- 10.102 We propose, in relation to analogue retail services, to impose a safeguard price cap condition (a form of price control) to address BT's ability and incentive to charge excessive prices.
- 10.103 In a competitive market, prices would be expected to be cost-reflective. However, where a provider has SMP, competition cannot be expected to provide effective constraints and ex-ante regulation may be desirable to prevent charges from being set at an excessive level. Such intervention could also have as its objectives the aim of promoting efficiency and of allowing the development of effective competition in downstream markets.
- 10.104 In this market BT has SMP and as previously discussed there is little likelihood of new entry; BT therefore has an incentive and the ability to charge excessive prices. We have noted the legacy nature of these services and that remedies at the wholesale level would not realistically be capable of addressing the issue at the retail level.
- 10.105 Having identified this relevant risk of an adverse effect arising from price distortion in our market analysis, we consider that this risk should be addressed by the imposition of a specific charging constraint. As discussed above, our proposal is that a safeguard price cap is appropriate in these circumstances.
- 10.106 We set out the obligations imposed on BT by the imposition of a safeguard price cap, and the reasons why we consider this remedy complies with the relevant legal tests in the Act, in Section 24.

Section 11

Remedies for the wholesale TI markets

Introduction

- 11.1 In this section we set out the remedies that we have decided to impose on BT in the following markets:
- Wholesale market for low bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the UK excluding the Hull area at bandwidths up to and including 8Mbit/s;
 - Wholesale market for medium bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the UK excluding the Hull area and the WECLA at bandwidths above 8Mbit/s and up to and including 45Mbit/s;
 - Wholesale market for high bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the UK excluding the Hull area and the WECLA at bandwidths above 45Mbit/s and up to and including 155Mbit/s; and
 - Wholesale market for TI regional trunk segments.
- 11.2 The remedies we have imposed are those which we conclude are appropriate to address the competition problems we have identified in the markets set out above as a result of our market analysis, in particular our respective SMP assessments, and which we conclude national and Community competition law alone would be insufficient to address. We set out the competition problems further below in this Section.
- 11.3 The competition problems we have identified, and our assessment of the appropriate remedies, in each of the markets set out above, are very similar. Therefore we have considered them together. Unless stated otherwise, we refer to the markets set out above collectively as the wholesale TI markets, and the remedies that we set out apply to all of the wholesale TI markets.
- 11.4 The wholesale TI markets are now in long-term decline as many customers who do not have specific latency/jitter requirements switch to alternative services such as AI and MI leased lines. The wholesale TI markets nevertheless remain considerably larger by circuit volume than the AI and MI markets.
- 11.5 Our SMP analysis indicates that significant entry barriers continue to exist in these markets. In the low bandwidth TISBO market where BT maintains a market share of 88% the main barrier is the low value of retail leased lines compared to costs and the fact that the market is declining. In the medium bandwidth TISBO market where BT has market share of 77% we do not expect to see any material demand for new circuits and due to the decline in the market, in all but exceptional circumstances we do not expect CPs to make investments to contest BT's current or future supply over the course of this review period of three years. Similarly, in the high bandwidth TISBO market which is declining rapidly and where BT has a market share of 51%, CPs are unlikely to make investments to contest BT's supply over the course of this review period.

- 11.6 Apart from the enlargement of the London geographic market to include West London and Slough, our SMP findings for the wholesale TI markets closely mirror those of the 2007/8 Review, particularly in relation to BT's market shares which have remained broadly the same as in the 2007/8 Review.
- 11.7 To date, our approach to regulating the wholesale TI markets has been focused on encouraging competition based on access to BT's PPC products. We have required BT to provide PPCs on a non-discriminatory basis and have applied charge controls. We consider that this approach continues to be appropriate for the period of this market review to address the competition problems we have identified.

Summary of our conclusions

- 11.8 Figure 11.1 below summarises the competition problems we have identified in this market and the remedies we have concluded are appropriate to address them.

Figure 11.1 Summary of competition problems and remedies

Competition problems	Remedies for the wholesale TI markets
<ul style="list-style-type: none"> Refusal to supply 	Requirement to provide Network Access on reasonable request including an obligation to offer fair and reasonable charges, terms and conditions
	PPC direction and RBS Backhaul direction
<ul style="list-style-type: none"> Price discrimination; Non-price discrimination, e.g. different terms and conditions, delaying tactics (different delivery timescales for provision and fault repair); strategic design of products; exclusive dealing; quality discrimination; different SLAs and SLGs; Predatory pricing; Margin squeeze. 	Obligation not to unduly discriminate
	Publication of reference offer
	Requirement to notify changes to charges and T&Cs
	Publication of quality of service as required by Ofcom
<ul style="list-style-type: none"> Price and non-price discrimination; Excessive pricing; Predatory pricing; Margin squeeze. 	Notification of technical information
	Accounting separation and cost accounting obligations
<ul style="list-style-type: none"> Cross-subsidisation; Excessive pricing; Over investments; Excessive costs/inefficiencies. 	Charge control
<ul style="list-style-type: none"> Refusal to supply new network access; Price discrimination; Non-price discrimination, e.g. delaying tactics, strategic product design. 	Requests for new Network Access

Charge control remedy

11.9 In this Section, we set out our reasons why, at a high level, we remain of the view that a charge control in the wholesale TI markets should be imposed. Our conclusions, together with our reasons, consultation responses and considerations of those responses, with regard to the detail of the charge control we are imposing, are set out in Section 19.

Other pricing remedies

11.10 As part of our assessment of the appropriate package of pricing remedies, together with the non-pricing remedies, to address the competition problems we have identified in the wholesale TI markets, we have considered the following, set out below. Our conclusions, together with our reasons, consultation responses and

considerations of those responses, in relation to i) to iii) are set out in Section 9 and Section 16.

- i) the imposition of a cost orientation obligation;
- ii) the scope of the fair and reasonable obligation according to which BT must provide general network access; and
- iii) the imposition of accounting separation and cost accounting obligations.

11.11 In relation to i), we have decided, as per our proposal in the June BCMR consultation, not to impose a cost orientation obligation on BT in the wholesale TI markets.

11.12 In relation to ii), we have decided to broaden the scope of the obligation requiring the provision of network access by BT in the wholesale TI markets to be on fair and reasonable terms and conditions, to include also fair and reasonable charges.

11.13 In relation to iii), we have decided, as per our proposals in the June BCMR consultation and the November BCMR consultation, to impose accounting separation and cost accounting obligations on BT in the wholesale TI markets.

Remedies as a whole in the wholesale TI markets

11.14 We consider the remedies as a whole in the wholesale TI markets would achieve our statutory duties and would satisfy the relevant legal tests. In reaching our conclusions we have taken account of our regulatory experience from two previous market reviews, recent developments in the wholesale TI markets, consultation responses, and expected developments over the review period of three years.

11.15 In reaching our conclusions on the appropriate remedies, we have taken due account of all applicable guidelines and recommendations issued by the European Commission (EC), and we have taken utmost account of the BEREC Common Position.¹⁰⁸⁴ We have also had regard to relevant guidance from the European Regulators' Group (ERG), Ofcom and ourselves.

Structure of this section

11.16 This section is structured as follows:

¹⁰⁸⁴ BEREC Common Position on best practices in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale lease lines, BoR (12) 83.

Sub-section	Description
Introduction	
Assessment of the competition problems in the wholesale TI markets	High-level discussion of competition problems identified as a result of our SMP assessment
Assessment of appropriate remedies for the wholesale TI markets	<p>The assessment is performed through five steps:</p> <ol style="list-style-type: none"> 1. Setting out the regulated wholesale products BT provides in the wholesale TI markets 2. Approach taken in the 2007/8 Review 3. Developments in the wholesale TI markets since the 2007/8 Review; 4. Analysis of issues raised by stakeholders in the June BCMR consultation and the further November consultation 5. Ofcom's assessment of the issues
Remedies for the wholesale TI markets	Our conclusions of the appropriate remedies based on the above assessment. For each remedy we clarify the aim and the legal basis.

Assessment of the competition problems in the wholesale TI markets

11.17 We summarise below our assessment of the competition problems in the Wholesale TI markets before setting out the remedies we have concluded, having considered consultation responses, are appropriate to address those problems.

Competition problems identified in the wholesale TI markets

11.18 In light of our SMP assessment, we summarise below the competition problems we have identified in the wholesale TI markets and which behaviour, in the absence of ex-ante regulation, we have concluded BT would have the incentive, and its market power would afford it the ability, to engage in. These include, in particular:

- refusal to supply access at the wholesale level and monopolise the provision of services in the TI retail leased lines markets. In addition, a refusal to supply wholesale TISBO services or wholesale TI regional trunk services would adversely affect the provision of downstream mobile services as wholesale TI services are used for the supply of backhaul connectivity in mobile networks;
- leveraging of its position of SMP from the TI regional trunk market into the adjacent TI markets for example by charging excessive prices or by discriminating unduly;
- engaging in undue price discriminatory practices – e.g. by charging its competing providers more than the amount charged to its downstream divisions;
- engaging in undue non-price discriminatory practices – e.g. by supplying the same products on different terms and conditions, different timescales for provision and fault repair, quality discrimination, different SLAs and SLGs, creating new variants to fulfil the requirements of its downstream division and taking longer to address, or avoiding addressing the requirements of its competitors;

- charging excessively high prices, margin squeeze, engaging in predatory pricing and/or anti-competitive cross subsidisation; and
- refusal to supply, or engage in delaying tactics in the provision of, new network access services requested by its competitors.

11.19 We have concluded that BT would have the incentive to engage in these practices in order to adversely affect the development of competition in the related downstream retail markets and thus enable it to act independently of competitors, customers and ultimately of consumers in those markets.

Insufficiency of national and Community competition law remedies

11.20 For the reasons set out at the end of this Section, and by reference to the package of remedies we are imposing, we have concluded that national and Community law remedies would be insufficient to address the competition problems we have identified.

11.21 This has led us to conclude, as per our view in the June BCMR Consultation, that over the course of the review period of three years, competition would be ineffective in the wholesale TI markets.

11.22 We now turn to the approach we adopted in the June BCMR Consultation which followed on from our assessment of the competition problems.

Approach in the June BCMR Consultation

Assessment of appropriate remedies

11.23 We first set out developments since the 2007/08 Review that we considered were relevant to informing our assessment of appropriate remedies.

Role of the Undertakings in the wholesale TI markets

11.24 BT's Undertakings, given to Ofcom under Section 155 of the Enterprise Act in lieu of a market reference to the Competition Commission, require BT to comply with a series of regulatory obligations to apply to some of its wholesale access and backhaul services.

11.25 The Undertakings were designed to ensure that BT does not discriminate between its own downstream divisions (BT Retail and BTGS) and competitors when offering access services. The set of remedies set out in the Undertakings were particularly engineered to address non price discrimination for example in relation to service quality or through inferior terms of conditions of service.

11.26 Most of the Undertakings obligations that relate to wholesale terminating segments relate to the AI & MI markets and are discussed in more detail in Section 12 and 13. However, in relation to the wholesale TI markets, the Undertakings commit BT to make available to any CP within a reasonable period of time new disaggregated TI local access and backhaul products. Existing wholesale TI services, however, do not have to be provided on an EOI basis.

11.27 We did not consider the Undertakings were sufficient to address the competition problems we have identified in the wholesale markets as a whole in which we proposed to find BT has SMP.

Wholesale products that BT provides in these markets

11.28 We described the PPC and RBS Backhaul services that BT is required to provide in these markets.

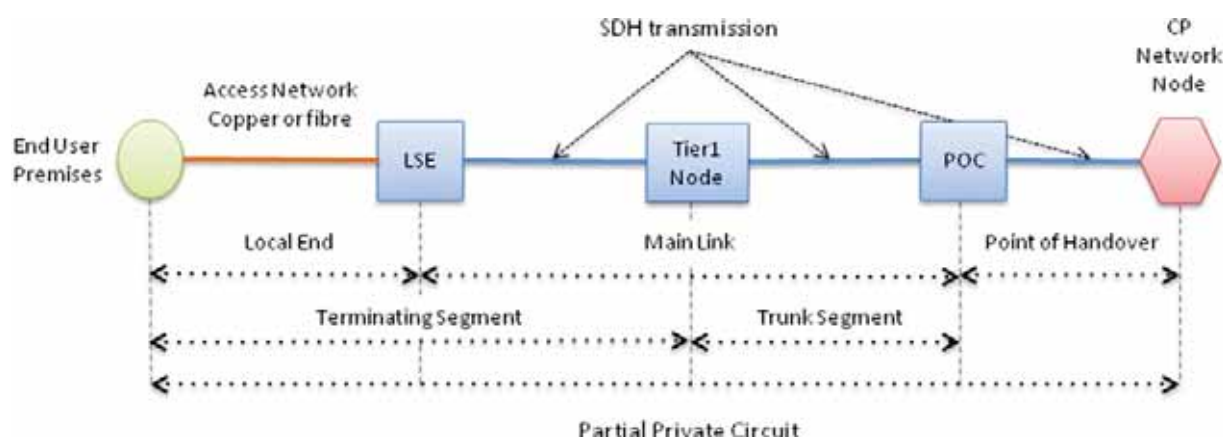
Partial Private Circuits

11.29 PPCs provide dedicated symmetric transmission using PDH or SDH technologies between an end-user's premises and a CP's network via a Point of Connection (POC).

11.30 There are three main elements to a PPC:

- The 'Local End' is a dedicated link between the third party customer premise and the BT serving exchange generally using BT's copper or fibre access network or exceptionally a point-to-point microwave link.
- The 'Main Link' provides dedicated transmission capacity between the BT serving exchange and the CP's POC with BT's network. This Main Link can have a mixture of backhaul and trunk network transmission. The boundary between the backhaul and trunk element of a PPC is currently drawn at 46 aggregation nodes corresponding to major population and business centres.
- The Point of Handover (POH) is a high capacity link that connects the CP's network with BT's network. A POH can deliver multiple PPC circuits. BT is required to provide three different types of handover configuration:
 - In-Span Handover (ISH): interconnection is provided at a joint-box or man-hole adjacent to the BT POC exchange;
 - In-Span Handover Extension (ISH Extn): interconnection is provided at a joint-box or manhole further from the BT POC exchange; and
 - Customer Sited Handover (CSH): interconnection is provided at the CPs network node.

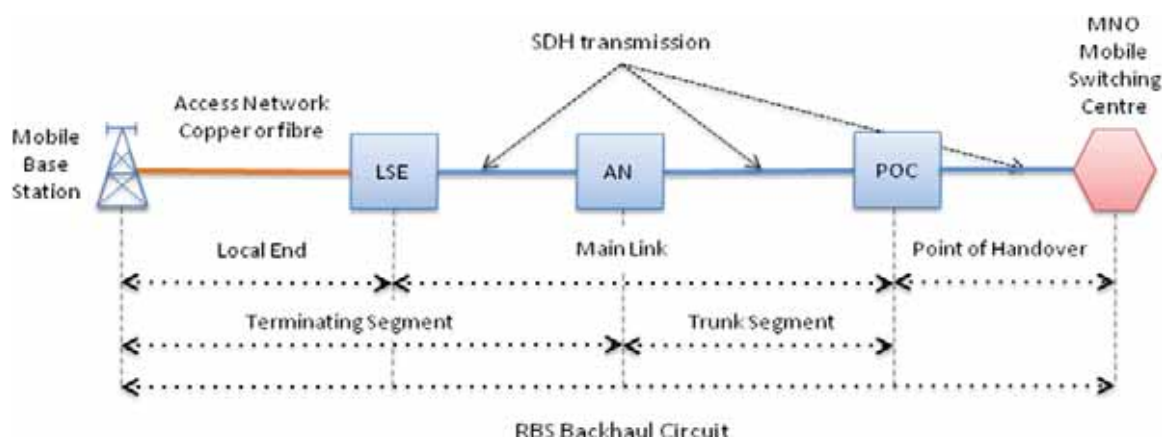
Figure 11.2 Partial Private Circuit



Radio Base Station Backhaul

- 11.31 An RBS backhaul circuit is a PPC that provides dedicated symmetric transmission at bandwidths up to 2Mbit/s between a Mobile Network Operator (MNO) radio base station and the MNO Mobile Switching Centre (MSC). The base station is linked to BT's local serving exchange using BT's copper or fibre access network or point-to-point microwave links.

Figure 11.3: Radio Base Station Backhaul



Developments since the 2007/8 Review

The 2009 Replicability Consultation

- 11.32 In the 2009 Replicability Consultation we proposed that BT had addressed the barriers to replicability identified in the Replicability Statement and consequently we proposed to relax certain SMP obligations in the downstream retail market.
- 11.33 We subsequently suspended work pending the outcome of the Leased Lines Charge Control Appeal (LLCC Appeal).¹⁰⁸⁵ In light of the delay and subsequent developments in the market, in 2011 we decided to defer consideration of the replicability proposals to this market review.

Development of disaggregated TI wholesale products

- 11.34 Our proposal in the 2007/8 Review to engage with BT in connection with requests for disaggregated products was related to a commitment that BT made in the Undertakings, in which it committed that Openreach would offer disaggregated access and backhaul TI products within a reasonable period following a request from a CP.¹⁰⁸⁶ The purpose of these products was to enable CPs to replicate commercially PPCs from disaggregated components and to promote competition in backhaul by enabling CPs to combine traffic from TI access segments at BT local exchanges with traffic for other services such as LLU backhaul.
- 11.35 When Openreach consulted CPs in 2007 on the supply of disaggregated access and backhaul components of PPCs, there was limited interest because the TDM equipment used for PPCs was regarded as legacy technology. Respondents felt that

¹⁰⁸⁵ <http://www.catribunal.org.uk/237-4334/1112-3-3-09-Cable--Wireless-UK.html>

¹⁰⁸⁶ These were described as Traditional Interface Leased Line Access Product (TILLAP) and Traditional Interface Leased Line Backhaul Product (TILLBP) in the Undertakings.

Openreach should instead dedicate resources to developing 'next generation' TDM interface products based on WDM technology. As a result, this was one of the product developments that CPs asked Openreach to prioritise in the Openreach Industry Commitments (OIC) that were agreed in May 2009.¹⁰⁸⁷ This development, which Openreach committed to deliver by September 2010, took longer to develop than anticipated. Openreach trialled the access product called TDM Access Bearer with STM-1, STM-4 and STM-16 SDH interfaces (155Mbit/s, 622Mbit/s & 2.488Gbit/s) in autumn 2011 and launched it in June 2012.

Responses to the CFI about wholesale TI remedies

11.36 We set out responses to the CFI relating to wholesale TI remedies and provided our comments to the points raised. The main points raised by respondents were:

- TI services would continue to play an important role during the period covered by this review. UCKTA expected a gradual decline in volumes and noted that previous forecasts of a rapid decline had proved incorrect.
- UKCTA considered that given the legacy status of TI services, Ofcom should try to avoid further upheaval in the market.
- UKCTA urged Ofcom to maintain its focus on the remedies in the TI markets, particularly the cost base and barriers to replicability.
- CWW said that a new regulatory focus on migration/switching arrangements is required.
- BT suggested that we should make several changes to the wholesale TI remedies, including changes to the PPC directions, to the notification periods for price changes and finally to withdraw cost orientation obligations.

11.37 We gave our initial views on these points and took the comments into account when developing our proposals.¹⁰⁸⁸

Ofcom's assessment in June BCMR Consultation

11.38 As noted above, BT is currently subject to a package of remedies in each of the wholesale TI markets comprising an obligation to provide network access, an obligation not to unduly discriminate, cost orientation and accounting separation obligations, and a set of transparency obligations.¹⁰⁸⁹ These remedies have been applied in broadly their current form since the 2003/4 Review.

11.39 Our analysis of these markets indicated that all of the wholesale TI markets are now in long-term decline as many customers who do not have specific latency / jitter requirements switch to alternative services such as AI and MI leased lines. Our analysis indicated that the wholesale TI markets nevertheless remain considerably larger by circuit volume than the AI and MI markets.

¹⁰⁸⁷ The Openreach Industry Commitments are a set of product and systems developments that BT committed to undertake when some of its Undertakings commitments relating to support systems functional separation were relaxed. <http://stakeholders.ofcom.org.uk/consultations/btundertakings/statement/>

¹⁰⁸⁸ See paragraphs 10.39 to 10.51 and 10.188 of the June BCMR Consultation for a more detailed description of stakeholders' responses to the CFI and our comments on them.

¹⁰⁸⁹ The charge control that formed part of this package of remedies expired on 1 October 2012.

- 11.40 Our SMP analysis indicated that significant entry barriers continue to exist in these markets. Our analysis indicated that in the low bandwidth TISBO market where BT was found to have a market share of 86% the main barrier is the low value of retail leased lines compared to costs and the fact that the market is declining. In the medium bandwidth TISBO market where BT was found to have a market share of 75% we did not expect to see any material demand for new circuits and due to the decline in the market, in all but exceptional circumstances we did not expect CPs to make investments to contest BT's current or future supply over the course of this review period of three years. Similarly, in the high bandwidth TISBO market which is declining rapidly and where BT was found to have a market share of 50%, CPs are unlikely to make investments to contest BT's supply over the course of this review period.
- 11.41 Apart from the enlargement of the CELA into the WECLA, our SMP findings closely mirrored those of the 2007/8 Review, particularly in relation to BT's market shares which had remained broadly the same as in the 2007/8 Review.
- 11.42 We noted that CFI respondents favoured an approach to the wholesale TI markets that minimised disruption. The main points made by respondents were in relation to PPC charges and barriers to replicability. As noted in Section 9 of the June BCMR Consultation, in our view BT had addressed the barriers to replicability.
- 11.43 In light of our analysis and stakeholders' views, we considered that it would be appropriate to maintain broadly the current set of SMP conditions and the PPC directions. Below we discuss the rationale for each of the proposed remedies.

Trunk segments

- 11.44 Our SMP analysis indicated that there are relatively high barriers to entry and expansion in the TI regional trunk segment market and BT retained a share of 89%. We found demand for regional trunk services is falling and we believed that competition is unlikely to provide an effective constraint on BT over the review period.
- 11.45 Our analysis indicated that in many respects the regional TI trunk market is more like a terminating segment market in character. CPs will continue to purchase PPCs from BT, some of which will require trunk segments. The main difference compared with the 2007/8 Review being that only regional trunk segments will fall within the scope of the regulated market and the much longer national trunk segments will not be regulated.

Remedies proposed in the June BCMR Consultation

- 11.46 In light of all of the above, we then set out our assessment of the appropriate remedies for the wholesale TI markets.

Figure 11.4 Summary of competition problems and remedies proposed in the June BCMR Consultation

Competition problems	Remedies for the wholesale TI markets
<ul style="list-style-type: none"> Refusal to supply 	Requirement to provide Network Access on reasonable request
	PPC direction and RBS Backhaul direction
<ul style="list-style-type: none"> Price discrimination; Non-price discrimination, e.g. different terms and conditions, delaying tactics (different delivery timescales for provision and fault repair); strategic design of products; exclusive dealing; quality discrimination; different SLAs and SLGs; Predatory pricing; Margin squeeze. 	Obligation not to unduly discriminate
	Publication of reference offer
	Requirement to notify changes to charges and T&Cs
	Publication of quality of service as required by Ofcom
	Notification of technical information
<ul style="list-style-type: none"> Price and non-price discrimination; Excessive pricing; Predatory pricing; Margin squeeze. 	Accounting separation obligations
<ul style="list-style-type: none"> Cross-subsidisation Excessive pricing Over investments Excessive costs/inefficiencies 	Price control
<ul style="list-style-type: none"> Refusal to supply new network access; Price discrimination; Non-price discrimination, e.g. delaying tactics, strategic product design. 	Requests for new Network Access

Summary of the remedies proposed for the wholesale TI markets in the June BCMR Consultation

11.47 Below we summarise the key elements of our proposed remedies for the wholesale TI markets.

Requirement to provide network access

11.48 In proposing that BT is required to meet reasonable requests for network access, we aimed to address BT's incentive to deny such access and monopolise the provision of services in the downstream markets.

11.49 We did not, however, propose that the fair and reasonable obligation, according to which this general network access requirement must be provided, should include fair and reasonable charges. This is discussed further in Section 9, including our consideration of responses received.

11.50 We also proposed that BT should be subject to a direction under the general access condition to provide Partial Private Circuits (PPCs) in each of the markets, and in the low bandwidth TISBO market only a direction requiring it to provide Radio Base Station backhaul (RBS backhaul). These directions specify detailed requirements for the provision and repair of PPCs and RBS backhaul including:

- Migration arrangements (for migration of retail private circuits to PPCs);
- Forecasting arrangements for capacity ordering; and
- Service level agreements including provision and repair performance targets and Service level guarantee payments.

11.51 These directions are designed to ensure that BT provides PPC and RBS Backhaul services in a non-discriminatory manner and with a level of performance that meets CPs requirements.

Requirement not to unduly discriminate

11.52 In proposing a non discrimination obligation we sought to prevent BT from discriminating in favour of its own downstream divisions and to ensure that competing providers are placed in an equivalent position.

11.53 Non discrimination obligations can have different forms of implementation. In the case of wholesale TISBO markets, we did not consider it proportionate to require Equivalence of Inputs (EOI) since BT's current wholesale services for TI are PPCs and an EOI requirement over PPCs would entail a major re-engineering of BT provisioning systems and processes.

11.54 We proposed a less strict interpretation for TISBO markets under which BT would be required to ensure that any discrimination is not undue and proposed to interpret this obligation in accordance with our guidelines of November 2005.

Transparency

11.55 In order to ensure that BT is complying with obligations to provide network access and not to unduly discriminate, we proposed additional obligations related to ensuring transparency. Such obligations provide third parties with access to information they need to make informed decisions about purchasing BT's wholesale products.

11.56 We proposed the following obligations on BT:

- a requirement to publish a reference offer;
- an obligation to give 28 days' notice of price reductions and to give 90 days' notice of all other changes to prices, terms and conditions for existing wholesale TI services;
- an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new wholesale TI services;
- a requirement to notify technical information with 90 days' notice; and
- an obligation to publish quality of service information, as directed by Ofcom.

Requests for new network access

11.57 In order to ensure that BT does not discriminate in favour of its own downstream business in relation to the handling of requests for new types of network access, we proposed obligations which included:

- a requirement for BT to publish reasonable guidelines specifying the required content and form of requests for new network access and how they will be handled;
- a requirement for BT to provide sufficient technical information to CPs to allow them to draft product specifications that are efficient and which satisfy the reasonable requirements; and
- timescales within which BT must acknowledge and process requests.

Price controls

11.58 We proposed to impose a charge control to address BT's ability and incentive to charge excessive prices. We proposed that the charge control should encompass, with a few exceptions, charges for all of the services BT currently offers in the wholesale TI markets and would therefore include:

- charges for low bandwidth TISBOs in the UK excluding the Hull area;
- charges for medium and high bandwidth TISBOs in the UK excluding the WECLA and the Hull area;
- the interconnection and accommodations services that BT provides in connection with wholesale TISBO services in these markets; and
- ancillary services including excess construction charges.

11.59 We did not, however, propose to impose on BT a cost orientation obligation in the wholesale TI markets. This is discussed further in Section 9, including our consideration of responses received.

TI regional trunk segment market

11.60 We considered that in many respects the regional TI trunk market is like a terminating segment market in character. Consequently we proposed that the remedies proposed to the adjacent TISBO markets, including the charge control would also be suitable for the TI regional trunk market. We also proposed to maintain the PPC Direction.

Interconnection and accommodation services

11.61 In order to use the wholesale TISBO and TI regional trunk segment services that BT provides in these markets CPs also require certain interconnection and accommodation services. To achieve an overall solution we considered that it was necessary to regulate the provision of these ancillary services, in the absence of which, we considered BT would have an incentive to refuse to supply or to supply in a discriminatory manner, for example by charging excessive prices.

- 11.62 Network access is defined in sections 151(3) and (4) of the Act and includes interconnection services and/or any services or facilities that would enable another CP to provide electronic communications services or electronic communication networks. We considered that a requirement to provide network access would, therefore, include any ancillary services as may be reasonably necessary for a third party to use the services. Consequently, each of the obligations that we proposed in relation to the wholesale TISBO and TI regional trunk segment markets also applied to the provision of accommodation and interconnection services that are reasonably required by CPs in connection with the provision of the regulated services.

Consultation responses to proposed wholesale TI remedies and Ofcom's response

Consultation responses in relation to requirement to provide network access

- 11.63 Zen Internet agreed with our proposal that BT should be required to provide network access.

Consistency with the retail supply obligations for analogue and low bandwidth digital services

- 11.64 BT noted that it has already announced its intention to withdraw its sub 2Mbit/s TI retail services (with the aim of platform closure by 2018). BT considered that Ofcom should align the wholesale network access obligation with the supply obligation proposed for the retail market and should not impose a requirement to supply new PPCs.

Ofcom's response

- 11.65 The retail remedy to which BT refers (Condition 11) reflects our conclusion that wholesale regulation alone would be insufficient in the context of certain legacy services (i.e. that there is little practical prospect of retail competition arising as a result of the wholesale regulation and in particular Condition 1). It is limited in that it allows BT to withdraw a product reaching the end of its life, on adequate notice. We do not agree, however, that the fact that we consider Condition 1 insufficient in one particular case implies we should limit the generality of its application. The network access obligation in Condition 1, which requires BT to provide network access on "reasonable request" is, in any event, sufficiently flexible to accommodate the withdrawal of products by BT in response to changing patterns of demand.

Consultation responses in relation to transparency and notification obligations

- 11.66 BT supported our proposal to reduce the notice period to 28 days for price reductions but was disappointed that we had proposed to maintain a 90 day notice period for price increases.
- 11.67 BT argued that since it is required to comply with a charge control which also contains sub-caps restricting price increases, the industry will have clear understanding of what a potential price increase could be over a three year period of the control. BT argued that PPCs are long-term investments and CPs will (and should) use the structure of the controls rather than a price at a given moment in time as a buying guide. Therefore, Ofcom's concern (regarding the financial exposure to CPs from reducing the notification period from 90 days to 28 days) was unfounded.

- 11.68 BT argued that when setting prices it has the flexibility to adjust individual prices to meet the overall basket controls. Flexibility in this context means increasing some prices while decreasing others. Having different notice periods for price increases and decreases brings an additional level of complexity to price setting which is likely to lead to more price changes within a charge control year. BT argued that the notice period for price increases should be reduced to 28 days in line with price increases.
- 11.69 BT considered that the wording of Condition 7.4 should be clarified so that it is clear that price increases back up to the original price (or a lower price) for price reductions would also only require 28 days' notice.
- 11.70 Zen Internet agreed with our proposals for proposals.

Ofcom's response

- 11.71 Charge controls give CPs visibility of the overall trend in prices generally for baskets of BTs services. However they give BT flexibility to vary individual charges within the confines of charge control baskets and to decide when to vary charges. Thus the movement of individual charges and consequently the impact on CPs of price revisions is uncertain. Given the level of investment in leased line services we consider that CPs need time to assess the impact of BT's pricing revisions and if necessary to take action such as revising prices for their own downstream services. We remain of the view that there is a risk with a 28 day notice period that CPs would have insufficient time to react to BT price rises and could be left financially exposed.
- 11.72 Conversely, where prices are being reduced we do not consider there should be a risk of financial exposure for CPs. We therefore consider there is scope to reduce the notification period for price reductions to 28 days.
- 11.73 We are not persuaded that having different notice periods for price increases (90 days) and price reductions (28 days) has any material impact on the complexity of price setting. We also note that it remains open to BT to notify price reductions with a longer notice period should it consider that this reduces the complexity for itself and the market.
- 11.74 We confirm that the 28 day notice period will apply to special offers by which we mean price notifications that specify a limited term price reduction and where the price immediately following the special offer is no higher than immediately before the special offer commenced. We have re-worded Condition 7.4 to clarify this position.

Consultation responses about the inclusion of SLAs and SLGs in the PPC directions

- 11.75 In its response to the June BCMR Consultation BT reiterated and expanded on the comments it made in response to the CFI about the inclusion of SLA and SLGs in the PPC directions. BT argued that the SLA and SLG provisions should be removed from the PPC directions for several reasons:
- BT would not have an incentive to restrict the supply of PPCs or degrade their performance as the resultant migration to Ethernet services would be likely to lose BT business.
 - CPs are adequately protected by the provisions of the PPC contracts that prevent BT from changing the SLA/SLG arrangements without CPs consent.

- Ofcom would retain powers under Condition 1 (requirement to provide network access) to issue further directions concerning SLAs and SLGs if required.

Ofcom's response

- 11.76 We are not persuaded that the risk of accelerated migration to Ethernet services would necessarily dissuade BT from proposing discriminatory changes to PPC SLA/SLG arrangements. BT could for instance have an incentive to propose inferior SLA or SLG terms that would reduce its compensation payments and could, in our view, do so without accelerating migration.
- 11.77 Whilst the contractual arrangements between BT and CPs provide CPs with some protection they permit BT to propose changes. Given BT's SMP, negotiations would be likely to be unequal, leaving the possibility that BT could effectively impose new terms on CPs.
- 11.78 The current SLA/SLG arrangements reflect the findings of an industry review led by the OTA and as far as we are aware they are regarded as satisfactory by CPs. Furthermore, no other consultation respondents indicated a desire for change. Given the mature nature of the PPC product it seems unlikely there will be a need for significant change.
- 11.79 We therefore remain of the view that ex-ante obligations provide CPs with greater certainty and are likely to provide a more efficient outcome than relying solely on contractual arrangements.

Consultation responses about notification requirements

- 11.80 BT proposed that Ofcom should modify the proposed SMP conditions to remove the following obligations that require it to notify Ofcom of changes to its services:
- to send Ofcom a copy of Access Charge Change Notices (Condition 7.2); and
 - to send Ofcom a copy of notices of changes to technical features of its services (Condition 9.4(b)).
- 11.81 BT argued that these requirements place an unnecessary administrative burden on BT given that the information is routinely published on BT websites. BT further argued that Ofcom needs to demonstrate that it makes sufficient use of the notifications to justify BT's administrative effort.
- 11.82 BT also proposed that Ofcom should remove Condition 9.4(c) which requires it to notify wholesale customers about technical changes to existing wholesale services arguing that publication on its website should be sufficient.

Ofcom's response

- 11.83 In the exercise of our duties, we monitor developments in the supply of BT's wholesale leased lines services. To facilitate this we consider it appropriate that BT should be required to send to Ofcom, copies of the notices that it sends to its wholesale customers about changes to these SMP services. Absent these requirements it would be necessary for us to monitor BT's website for changes, placing an additional administrative burden on Ofcom. In our view, these obligations place only a very small burden on BT. In practice BT needs only to ensure that it

includes Ofcom on its email distribution lists for these notices. We have therefore decided to maintain these obligations.

- 11.84 It is clearly important that BT's wholesale customers are made aware of technical changes to BT's wholesale services. In our view, the most efficient approach is for BT as originator of the changes to notify proactively its wholesale customers. We have therefore decided to maintain this obligation.

Consultation responses in relation to inclusion of usage factors in ACCNs

- 11.85 BT proposed that Condition 7.5 (d) relating to the content of Access Charge Change Notices (ACCNs) should be removed. In BT's view this goes further than is necessary by requiring the publication of the network usage factors of the components reconciled to the new charge. BT argues that usage factors are relevant when calculating the price of an individual PPC circuit – but not relevant when determining the price of an individual service (i.e. Local End and Main Link including the distance of trunk and terminating kilometres included in the main link). As prices are set at a service level and not component level, this information is of no value to CPs.
- 11.86 Although information on component usage factors to derive Fully Allocated Costs is published in Appendix 1 of BT's Regulatory Financial Statements – pricing usage factors are not specifically derived. BT suggest that Condition 7.5(d) should be amended to “(d) the current and proposed new charge” with the remainder of the sentence (“and the relevant Usage Factors applied to each Network Component comprised in that network access, reconciled in each case with the current or proposed new charge”) deleted.

Ofcom's response

- 11.87 The provisions of Condition 7.5 and similar provisions in Condition 6 (requirement to publish a reference offer) are separate to the requirements relating to BT's regulatory financial statements. They provide that Ofcom may specify a set of network components and require BT to break down its charges by the usage of those components. They are designed to reduce the risk of discriminatory pricing by providing transparency about the pricing of network components that are common to multiple products.
- 11.88 Moreover, the terms of Condition 7.5, together with terms contained in Condition 7 as a whole and the terms in Conditions 6, 8 and 9, operate cumulatively to address the risk we have identified of BT engaging in unduly discriminatory pricing and non-pricing practices. Reducing the scope of these Conditions would reduce their cumulative effectiveness in addressing the competition problems. Consequently, we have concluded it would not be appropriate to remove or amend Condition 7.5(d).

Consultation responses in relation to requests for new network access

- 11.89 BT proposed several changes to the proposed new network access condition.

Requirement to use best endeavours to complete feasibility studies

- 11.90 BT proposed that Conditions 10.10(a) and 10.13(a) should be modified such that BT would be required to use “reasonable endeavours” rather than “best endeavours” to complete feasibility studies within the specified timescales.

- 11.91 BT argued that in the context of Condition 10, the obligation for BT to use its best endeavours goes against the principle that BT should be allowed to act as a commercial business when considering requests for new network access. This is something which is explicitly recognised in section 5.11 of BT's Undertakings, which states that Openreach is entitled to accept or reject SORs on the basis of *"(a) fit with the assets, skills and resources and terms of reference of Openreach; (b) commercial attractiveness to Openreach; and (c) opportunity cost to Openreach."*
- 11.92 BT argued that requiring it to use its best endeavours would impose a disproportionate and unjustified burden, in that it could very well lead to BT having to act in a way that goes against its commercial interests, which should not be the purpose of Condition 10. Consequently, the condition as drafted goes further than required and should be amended to reasonable endeavours.

Ofcom's response

- 11.93 We do not consider section 5.11 of the Undertakings to be relevant in this context as it relates to product development requests that fall outside markets in which BT has SMP.
- 11.94 In these markets in which we have found BT to have SMP, we have concluded that it would have an incentive to refuse to supply new forms of network access and also to treat requests in a discriminatory fashion. Given this, there is clearly a risk that BT might consider it to be in its commercial interests to delay feasibility studies. We therefore consider that it is appropriate to require BT to use its 'best endeavours' to complete the feasibility studies within the specified timescales rather than 'reasonable endeavours' which would allow BT to take greater account of its commercial interests.

Timescales for feasibility studies

- 11.95 BT proposed that Condition 10 should be amended to allow for changes to the SOR process to be agreed with industry. This change was made to Condition AAA1(b) of the last wholesale narrowband market review (Ofcom statement on the review of the fixed narrowband services wholesale markets of 15 September 2009) and Condition FAA2 in the wholesale local access market in relation to LLU (Ofcom statement on the review of the wholesale local access market of 7 October 2010). In both cases, the timescales for responding to SORs have been totally removed. BT encourages Ofcom to align this SMP condition across all relevant market reviews to ensure a consistent approach to addressing SORs. If Ofcom does not make this change, the Condition should be amended to acknowledge that BT is free to reject SORs on commercial grounds. This is explicitly acknowledged in section 5.11 of the Undertakings (see above).¹⁰⁹⁰

Ofcom's response

- 11.96 We do not consider it would be appropriate to make changes to the new network access conditions in light of BT's suggestions.
- 11.97 Given the CP concerns about the time that BT takes to progress requests for new forms of network access in these markets we consider it appropriate to continue to specify these timescales to ensure that requests are processed in a timely manner.

¹⁰⁹⁰ BT response to June BCMR Consultation, page 254.

11.98 One of the competition problems that we have identified in these markets is that BT would be likely to have an incentive to refuse requests for new forms of network access. We therefore do not consider that it would be appropriate to give BT greater commercial freedom to reject such requests. We remain of the view that the obligation (as set out in the requirement to provide network access (Condition 1)) to meet reasonable requests for network access is appropriate. We do not consider section 5.11 of the Undertakings to be relevant in this context as it relates to product development requests that fall outside markets in which BT has SMP.

Initial notification of processes to Ofcom

11.99 BT considered that the requirement in Condition 10.15 to provide Ofcom within two months of a description of the processes BT has put in place to ensure compliance with Condition 10 is superfluous. This information is routinely published on Openreach's and BT Wholesale's websites and as such is available to Ofcom.

Ofcom's response

11.100 It is unlikely that BT will need to change its SOR processes as a result of the imposition of this obligation as it is not materially different from the obligation implemented in the 2007/8 Review. Given this, an obligation for BT to provide us with details of its SOR processes seems unnecessary. We have therefore removed this provision from Condition 10.

11.101 We note that under Condition 10.2 BT is obliged to publish its SOR processes and to consult Ofcom and CPs before making any changes to the processes.

Consultation responses in relation to the practical implementation of remedies across the relevant markets that make up the wholesale TI markets

11.102 BT requested that we specify how PPCs that cross the boundary of the WECLA geographic market should be classified.

11.103 BT argued that any circuit with a customer end in WECLA should be treated as being in WECLA even if the CP chooses a hand-over point outside WECLA. WECLA has a competitive supply of access infrastructure and CP presence at BT nodes. Thus if a CP chooses a hand-over point outside WECLA it would be a commercial decision and BT should not be regulated as a result.

11.104 Level 3 considered the wording of the proposed remedy in relation to circuits between WECLA and non-WECLA locations appeared to raise some questions of interpretation and invited Ofcom to ensure that the final wording of the relevant SMP condition was absolutely clear and explicit.

Ofcom's response

11.105 We understand that the classification arrangements described by BT have been applied by BT to PPCs with customer ends in the CELA since the 2007/8 Review and are generally accepted by CPs. These arrangements are also consistent with our view of competitive conditions in the WECLA (i.e. CPs should be able to serve premises within the WECLA from network nodes/hand-over points located in the WECLA). We therefore consider that BT should continue to apply this interpretation.

11.106 Respondents also made similar comments about the practical implementation of the AISBO remedies. We discuss these in section 12.

Ofcom's conclusions on the appropriate remedies in wholesale TI markets

11.107 In order to address the competition problems we have identified in the wholesale TI markets, we have concluded it is appropriate to:

- adopt the remedies proposed in the June and November¹⁰⁹¹ BCMR Consultations; and
- broaden the scope of the obligation requiring the provision of network access by BT to be on fair and reasonable terms and conditions, to include also fair and reasonable charges.

11.108 Our conclusions are the result of our cumulative consideration of:

- our assessment of the appropriate remedies, as set out in the June BCMR Consultation, the November BCMR Consultation and set out above;
- our considerations of consultation responses; and
- all the evidence available to us.

11.109 Below we set out:

- the aim of the remedies that we have concluded should be imposed on BT in the Wholesale TI markets;
- the obligations imposed on BT by the remedies; and
- the reasons why we consider the remedies comply with the relevant legal tests in the Act.

11.110 The SMP conditions, and accompanying directions made under those SMP conditions, which give effect to our conclusions are set out in Annexes 7 and 8.

Requirement to provide network access

Aim of regulation

General requirement to provide network access

11.111 We have concluded that it is appropriate to impose a requirement for BT to meet reasonable requests for network access.

11.112 We consider that, in the absence of the nature of the network access obligation we are imposing, BT would have the ability and incentive to refuse to provide network access or to supply on such terms that amount to a refusal to supply, which would otherwise prevent or restrict competition in the wholesale TI markets and enable BT to monopolise the provision of services in the downstream markets.¹⁰⁹²

¹⁰⁹¹ Our conclusions regarding accounting separation and cost accounting, together with our considerations of responses received, are set out in Section 16.

¹⁰⁹² See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of assurance of access.

11.113 Further, in light of consultation responses, which we set out together with our considerations of those responses and our reasons in Section 9, we have concluded that the scope of the fair and reasonable obligation according to which BT must provide network access, should be broadened to include fair and reasonable charges.¹⁰⁹³

11.114 The way in which Ofcom might assess reasonable demands for access is set out in the Access Guidelines. We consider that it is appropriate in cases where a CP has SMP to impose an access obligation on that provider requiring it to meet all reasonable requests for network access within the relevant wholesale market, irrespective of the technology required, on fair and reasonable charges, terms and conditions.¹⁰⁹⁴

11.115 Our analysis in Section 7 has shown that the lack of competition in the wholesale TI markets stems primarily from entry barriers, particularly the magnitude of sunk costs, BT's scale within these markets and the ubiquity of BT's access network. All these factors mean that BT's cost of supply are significantly lower than its competitors and that, as a consequence, it is unlikely to be economically viable for BT's competitors to invest in the provision of network facilities on a sufficient scale to provide effective constraint on BT's SMP in these markets. Further, competitors are unlikely to be willing to make the necessary investments as each of these markets is declining. Also, relative to BT, its competitors face higher costs which in light of a declining market and low value contracts in the low bandwidth TISBO market are likely to present an additional barrier to investment.

11.116 Given these entry barriers, we consider that an obligation for BT to meet reasonable requests for access to its network will assist in promoting competition in the wholesale TI markets. Such an obligation will overcome the entry barriers by allowing CPs to provide services using network components rented from BT.

Requirement to provide PPC and RBS Backhaul

11.117 Section 45(10)(a) of the Act authorises the giving of directions with respect to the matters to which SMP conditions relate. In addition to the obligation to provide network access upon reasonable request, BT is currently required to provide two network access products in the wholesale TI markets under the existing directions:

- PPCs: an obligation to provide PPC terminating segments in the UK, excluding the Hull area (and excluding the CELA for the medium and high bandwidth markets); and
- RBS Backhaul: an obligation to provide RBS Backhaul traditional interface circuits at bandwidths up to and including 2Mbit/s to mobile network operators in the UK, excluding the Hull area.

11.118 BT is also subject to the PPC direction in the wholesale regional trunk market. Collectively these directions require BT to provide PPCs including both terminating and regional trunk segments. Regional trunk segments are components of PPCs and are not provided in isolation. Thus a 45Mbit/s regional trunk segment is only ever provided as part of a 45Mbit/s PPC. In practice this means that BT will not have to

¹⁰⁹³ As set out in Section 9, in reaching this conclusion we have taken utmost account of the BEREC Common Position.

¹⁰⁹⁴ We also discuss in Section 9 how the fair and reasonable charges obligation complements other pricing remedies.

provide regional trunk segments where it does not have SMP in the corresponding TISBO market. So BT will not have to provide:

- TI regional trunk segments at bandwidths above 155Mbit/s anywhere in the UK; and
- TI regional trunk segments at bandwidths above 8Mbit/s in the WECLA.

11.119 These directions specify detailed requirements for the provision and repair of PPCs and RBS backhaul including:

- Migration arrangements (for migration of retail private circuits to PPCs);
- Forecasting arrangements for capacity ordering; and
- Service level agreements including provision and repair performance targets and Service level guarantee payments.

11.120 These directions are designed to ensure that BT provides PPC and RBS Backhaul services in a non-discriminatory manner and with a level of performance that meets CPs' requirements. The SLGs are designed to incentivise BT to ensure that performance meets the specified targets and also to compensate CPs when performance does not meet the targets. If we were to lift these directions, in the absence of other suitable substitute products from BT, BT could change the product terms and conditions and technical specification in order to restrict or disrupt competition.

11.121 PPCs account for the vast majority of terminating segments provided in this market and we expect this to continue to be the case, particularly given the mature nature of this market and the gradual transition to AI services. Although the migration of mobile backhaul circuits to AI services is now well under way, MNOs are likely to continue to require TI RBS backhaul for the duration of this review.

11.122 We therefore consider that PPCs and RBS Backhaul remain the relevant products for fostering competition in downstream markets and that their specific access should be required to promote infrastructure competition.¹⁰⁹⁵ We therefore consider it appropriate to reapply these directions, modified to take account of the enlarged London geographic market where appropriate. The specification of the service that BT is required to provide is detailed in the PPC/RBS Backhaul Direction in Annex 8.

SMP Condition

11.123 We have concluded that BT should be subject to a general requirement to meet reasonable requests for network access.

Legal tests

11.124 We are satisfied that that the SMP conditions (as set out in Annex 7) and directions (at Annex 8) meet the relevant tests set out in the Act.

11.125 First, section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide such network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include

¹⁰⁹⁵ See, in this respect, **BP3a** from the BEREC Common Position.

provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

11.126 When considering the imposition of such conditions in a particular case, we must take into account six factors set out in section 87(4) of the Act, including inter alia:

- the technical and economic viability of installing and using other facilities, including the viability if other network access products whether provided by the dominant provider¹⁰⁹⁶ or another person¹⁰⁹⁷, that would make the proposed network access unnecessary;
- the feasibility of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed (taking account of any public investment made); and
- the need to secure effective competition, including where it appears to us to be appropriate, economically efficient infrastructure based competition, in the long term.

11.127 In imposing the general requirement for the provision of network access, and for the provision of PPC and RBS backhaul via direction, we have taken all these six factors into account. In particular, we consider these requirements are necessary for securing effective competition, including economically efficient infrastructure based competition, in the long term. The requirements for BT only to meet reasonable network access requests also ensures that due account is taken of the technical and economic viability of installing and using other facilities, the feasibility of the proposed network access, and of the investment made by BT initially in providing the network.

11.128 Secondly, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the conditions and directions are aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by facilitating the development of competition in downstream markets.

11.129 Thirdly, sections 47 and 49 of the Act require conditions and directions respectively to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP conditions and directions are:

- objectively justifiable, in that they facilitate and encourage access to BT's network and therefore promote competition to the benefit of consumers;
- not unduly discriminatory, as they are imposed only on BT and no other operator has been found to hold a position of SMP in the wholesale TI markets;
- proportionate, since they are targeted at addressing the market power that we have found BT holds in the wholesale TI markets and does not require it to provide access if it is not technically feasible or reasonable; and

¹⁰⁹⁶ i.e. in this instance BT.

¹⁰⁹⁷ i.e. other CPs.

- transparent in that the condition is clear in its intention to ensure that BT provides access to its networks in order to facilitate effective competition.

11.130 In relation to our conclusion that the scope of the fair and reasonable obligation according to which BT must provide network access, should be broadened to include fair and reasonable charges, we consider this is appropriate in order to promote efficiency and sustainable competition in the wholesale TI markets and to provide the greatest possible benefits to end-users by enabling OCPs to purchase network access at levels that should be expected in a competitive wholesale market. In this respect, we have also taken into account the extent of investment of BT in the matters to which the broadened scope of the fair and reasonable obligation would relate.¹⁰⁹⁸

11.131 For all the reasons set out above, we consider that the SMP conditions and directions respectively are appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement not to unduly discriminate

Aim of regulation

11.132 We have concluded it is appropriate to impose a requirement on BT not to discriminate unduly in the provision of network access in the wholesale TI markets. In light of stakeholder responses,¹⁰⁹⁹ we confirm that this obligation applies to both non-pricing *and* pricing practices.

11.133 A non discrimination obligation is intended as a complementary remedy to the network access obligation, principally to prevent the dominant provider from discriminating in favour of its own downstream divisions and to ensure that competing providers are placed in an equivalent position. Without such an obligation, the dominant provider is incentivised to provide the requested wholesale network access service on terms and conditions that discriminate in favour of its own downstream divisions. For example, BT may decide to charge its competing providers more than the amount charged to its own downstream units or it might strategically provide the same services but within different delivery timescales. Both these behaviours could have an adverse effect on competition.¹¹⁰⁰

11.134 Non discrimination obligations can however have different forms of implementation. A strict form of non discrimination, i.e. a complete prohibition of discrimination, would result in the SMP operator providing exactly the same products and services to all CPs (including its own downstream divisions) on the same timescales, terms and conditions (including price and service levels), by means of the same systems and processes and by providing the same information. Essentially, the inputs available to all CPs (including the SMP operators' own downstream divisions) would be provided on a truly equivalent basis, an arrangement which has become known as

¹⁰⁹⁸ In this respect, we consider the extent of investment – if required at all – would not be significant given the strictly behavioural nature of this specific remedy – i.e. it serves to impose an *ex ante* qualification on the manner in which BT must comply with the main obligation which is to meet reasonable requests for network access.

¹⁰⁹⁹ See Section 9 for further discussion.

¹¹⁰⁰ See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of a level playing field.

Equivalence of Inputs (EoI).¹¹⁰¹ The concept of EoI was first identified in the Strategic Review of Telecoms in 2004/5 as one of our key policy principles to ensure that regulation of the telecommunication markets is effective. Following on from this review, a specific form of EoI was implemented in 2005 by means of the BT Undertakings.

11.135 On the other hand, a less strict interpretation of non discrimination may allow for flexibility and result in a more practical and cost-effective implementation of wholesale inputs in cases where it is economically justified.

11.136 As part of this review, we have considered what form of non discrimination obligation would be appropriate. In the case of wholesale TI markets, we do not consider it proportionate to require EoI. BT's current wholesale services for TI are Partial Private Circuits. An EoI requirement over PPCs would entail a major re-engineering of BT provisioning systems and processes and would be disproportionate, given that the TI market is declining and on a forward-looking basis that PPCs will be replaced by Ethernet-based leased lines.

11.137 We therefore consider that a less strict interpretation is appropriate for the wholesale TI markets under which BT would be required to ensure that any discrimination is not undue and we propose to interpret this obligation in accordance with our guidelines of November 2005 on Undue discrimination by SMP providers (the Discrimination Guidelines).¹¹⁰² We consider that undue discrimination in particular would occur where, in the absence of objective justification:

- BT was to refuse to reflect relevant differences between (or was to refuse to reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers; and
- BT was to discriminate between internal and external wholesale customers.

11.138 We have also considered our stance in relation to various types of discount that BT might offer and whether any changes are required in the obligation in relation to undue discrimination are appropriate to address particular types of discount.

Volume discounts

11.139 First in relation to volume discounts, we recognise that these would very often in practice constitute undue discrimination since BT's retail arm would almost inevitably be the main beneficiary and there is therefore a strong potential for anti-competitive effects. However, we believe that this point is well understood by CPs and do not consider a change in the obligation is required specifically to reflect this.

Geographic discounts

11.140 As discussed in Section 5, we have conducted a detailed analysis of the geographic scope of each of the relevant retail and wholesale product markets. In summary, and as set out in more detail in Section 5, geographic areas can comprise a single relevant geographic market to the extent that:

¹¹⁰¹ See also, in this respect, **BP10a** from the BEREC Common Position. EoI is relevant to the form of non-discrimination remedy we have concluded it is appropriate to impose to address the competition problems we have identified in the two AISBO and MISBO markets (see Sections 12 and 13).

¹¹⁰² <http://stakeholders.ofcom.org.uk/consultations/undsmp/contraventions/>

- competitive conditions in the geographic area are sufficiently homogeneous; and
- the areas can be distinguished from neighbouring areas where the competitive conditions are appreciably different.

11.141 We note that for the geographic markets where we have found SMP, the underlying costs and competitive conditions will not be completely homogeneous throughout the UK (even outside the WECLA).

11.142 This suggests that some freedom to charge in a way that reflects more accurately the costs incurred and to respond to the local characteristics of competition that exist in these markets would be efficient. Moreover, given the level of cost differences that may exist and the extent of competition in some areas, BT's ability to compete could be limited if it were required to maintain nationally uniform prices. Hence, geographically differentiated prices may reflect BT responding legitimately to cost differences in the face of competition.

11.143 We therefore consider that geographic discounts may or may not be unduly discriminatory depending on the circumstances. In the event of an allegation of offering unduly discriminatory geographic discounts, we would judge each alleged breach of the no undue discrimination obligation on a case by case basis.

11.144 In Section 19 of this statement we have considered how geographic discounts should be treated in the specific price control remedy we have imposed.

Term discounts

11.145 In principle, we consider this form of discount could raise competition concerns, for example:

- if BT's downstream operations were at an advantage compared to downstream competitors. In principle, the largest beneficiary of term discounts could be BT's downstream operations, as they may see no commercial disadvantage in being contractually tied to BT's wholesale services for a lengthy period of time. If so, it could provide BT with the ability to undercut downstream competitors in ways that they could not match (where those competitors rely on wholesale services from BT, but do not wish to sign up to the discounts).
- term discounts may increase the barriers to entry/growth for upstream competitors to Openreach, if purchasers of wholesale services are tied into longer term contracts (and so increasing the switching costs).

11.146 It is not necessarily the case, however, that we should automatically view all forms of term discount as harmful to consumers.

11.147 We therefore consider term discounts may or may not be unduly discriminatory depending on the circumstances. In the event of an alleged breach we would judge each alleged breach on a case by case basis.

11.148 In Section 19 of this statement we have considered whether there should be any restrictions on the term discounts that BT may offer and how they might be taken into account in the specific price control remedy we have imposed.

SMP Condition

11.149 We have concluded that BT should be subject to a general requirement not to unduly discriminate.

Legal tests

11.150 We are satisfied that the SMP conditions (as set out in Annex 7) meet the relevant tests set out in the Act.

11.151 First, we consider section 87(6)(a) of the Act authorises the setting of an SMP condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

11.152 Secondly, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by preventing BT from leveraging its SMP into downstream markets.

11.153 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT discriminating unduly in favour of its own downstream activities or between different competing providers;
- not unduly discriminatory in that it is only imposed on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate in that it only seeks to prevent undue discrimination; and
- is transparent in that the SMP condition is clear in what it is intended to achieve.

Charge controls

Aim of regulation

11.154 For the reasons set out in Section 9, we are imposing a charge control remedy to address the competition problems we have identified, in particular the risk of excessive pricing.¹¹⁰³

11.155 Section 87(9) of the Act authorises the setting of an SMP services condition setting price controls for network access and relevant facilities. Section 88 of the Act specifies that Ofcom are not to set a price control unless it appears to Ofcom that there is a risk of adverse effects due to pricing distortions and it appears to Ofcom that setting a price control would promote efficiency, sustainable competition and confer the greatest benefits on the end users.

11.156 A price control can take a variety of forms¹¹⁰⁴, including but not limited to a charge control, cost orientation and/or safeguard cap.

¹¹⁰³ See, in this respect, Figure 11.1 summarising the competition problems and remedies.

11.157 In a competitive market, the charges for services would be set on the basis of the commercial judgements of individual companies and could be expected to deliver cost reflective prices. However, as discussed above, one of the competition problems we have identified as a result of our market analysis of the wholesale TI markets, in particular our respective SMP assessments and the unlikelihood of new entry, is the risk of BT engaging in excessive pricing. Excessive prices at the wholesale level could make it difficult for third party CPs to compete at the retail level with BT and in the long term, may result in market exit. Unjustifiably high wholesale charges are also likely to result in high retail prices – i.e. consumers would be paying more for a service than they should expect if wholesale prices were constrained by effective competition.¹¹⁰⁵

11.158 Having identified this relevant risk of an adverse effect arising from price distortion in our market analysis,¹¹⁰⁶ we have concluded that this risk should be addressed by the imposition of an appropriate price control remedy in the wholesale TI markets. We have concluded that the price control remedy also appears appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on end-users.¹¹⁰⁷

11.159 We have also taken account of the extent of the investment of BT in the matters to which the price control remedy relates.

11.160 Our conclusions, together with our reasons, consultation responses and considerations of those responses, with regard to the detail of the price control we are imposing, and the reasons why we consider this remedy complies with the relevant legal tests in the Act, are set out in Section 19.¹¹⁰⁸

Transparency and notification obligations

Aim of regulation

11.161 We have concluded that BT should be subject to a set of obligations, aimed at promoting transparency and ensuring non-discrimination.¹¹⁰⁹ The obligations which we discuss in more detail below are:

- an obligation to publish a reference offer, including terms and conditions of provisioning and repair;

¹¹⁰⁴ As suggested by Recital 20 of the Access Directive.

¹¹⁰⁵ See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of fair and coherent access pricing.

¹¹⁰⁶ Within the meaning of section 88(3) of the Act. See Section 19 of this Statement for further detail.

¹¹⁰⁷ Within the meaning of section 88(1)(b) of the Act. See Section 19 of this Statement for further detail.

¹¹⁰⁸ In Section 19 we also set out how, as noted above, we have taken utmost account of the BEREC Common Position.

¹¹⁰⁹ ¹¹⁰⁹ In this respect, we consider the set out obligations aimed at promoting transparency and ensuring non-discrimination are consistent with the relevant best practices identified in the BEREC Common Position.

- an obligation to give 28 days' notice of price reductions and to give 90 days' notice of all other changes to prices, terms and conditions for existing wholesale TI services;
- an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new wholesale TI services;
- a requirement to notify technical information with 90 days notice;
- an obligation to publish quality of service information, as directed by Ofcom; and
- obligations relating to requests for new network access.

11.162 These requirements are designed to support the general, and specific, network access and non-discrimination obligations. These forms of discrimination are particularly relevant when dealing with a vertically integrated incumbent, as in BT's case. They are designed to ensure that BT does not use non-price discrimination to restrict competition in downstream markets.

11.163 In our view, since their imposition as a result of the 2007/8 Review, these SMP obligations have been on the whole effective in supporting the non-discrimination obligation to address BT's ability and incentive to engage in anti-competitive discriminatory practices.

11.164 We therefore consider it appropriate to apply these obligations to BT.

Legal test

11.165 Section 87(6) of the Act authorises the setting of SMP services conditions that require the dominant provider to publish information about network access to ensure transparency and to publish terms and conditions.

11.166 We discuss each of the transparency obligations in more detail in the sub sections below.

Requirement to publish a Reference Offer

Aim of regulation

11.167 We have concluded that BT should be required to publish a Reference Offer (RO) for products in these markets.

11.168 A requirement to publish an RO has two main roles, namely:

- to assist transparency for the monitoring of potential anti-competitive behaviour; and
- to give visibility to the terms and conditions on which other providers will purchase wholesale services.

11.169 This helps to ensure stability in markets without which we consider incentives to invest might be undermined and market entry less likely.

11.170 The publication of a RO has an additional role in potentially allowing for speedier negotiations, avoiding possible disputes and giving confidence to those purchasing

wholesale services that they are being provided on non-discriminatory terms. Without this, market entry might be deterred to the detriment of the long-term development of competition and hence consumers.

11.171 We consider the requirement to publish an RO imposed as a result of the 2007/8 Review has been effective in carrying out the three roles explained above. Therefore we consider it appropriate to impose the same requirement on BT in this market review.

11.172 The final condition requires the publication of a RO and specifies the information to be included in that RO (set out below) and how the RO should be published. It prohibits the dominant provider from departing from the charges, terms and conditions in the RO and requires it to comply with any directions Ofcom may make from time to time under the condition. The published RO must set out (at a minimum) such matters as:

- a clear description of the services on offer including technical characteristics and operational process for service establishment, ordering and repair;
- the locations of points of network access and the technical standards for network access;
- conditions for access to ancillary and supplementary services associated with the network access including operational support systems and databases etc;
- contractual terms and conditions, including dispute resolution and contract negotiation/renegotiation arrangements;
- charges, terms and payment procedures;
- service level agreements and service level guarantees; and
- to the extent that BT uses the service in a different manner to CPs or uses a similar service, BT is required to publish a reference offer for in relation to those services.

SMP Condition

11.173 We have concluded that BT should be subject to a requirement to publish a reference offer.

Legal tests

11.174 We are satisfied that the SMP condition (as set out in Annex 7) meets the relevant tests set out in the Act.

11.175 First, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the SMP condition is aimed at promoting competition firstly by ensuring that providers have the necessary information to allow them to make informed decisions about purchasing wholesale TI services in order to compete in downstream markets and by providing transparency in order to assist in the monitoring of anticompetitive behaviour.

11.176 Secondly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it requires that terms and conditions are published in order to encourage competition, provide stability in markets and allow monitoring of anti-competitive behaviour;
- not unduly discriminatory in that it is imposed only on BT and no other operator has been found to hold a position of SMP in the wholesale TI markets;
- proportionate in that only information that is considered necessary to allow providers to make informed decisions about competing in downstream markets, is required to be provided; and
- transparent in that it is clear in its intention to ensure that BT publishes details of its service offerings.

Requirement to notify charges and terms and conditions

Aim of regulation

11.177 We have concluded that BT should be subject to an obligation to notify changes to its charges, terms and conditions.

11.178 Notification of changes to services at the wholesale level can assist competition by giving advanced warning to CPs purchasing wholesale services that also compete with the dominant provider in downstream markets. It also supports the non-discrimination obligation by ensuring that BT does not notify changes in a discriminatory manner. Notification of changes to charges therefore helps to ensure stability in markets and without which we consider incentives to invest might be undermined and market entry made less likely. However, there may be some disadvantages to notifications, particularly in markets where there is some competition. It can lead to a 'chilling' effect where CPs follow BT's prices rather than act dynamically to set competitive prices.

11.179 Currently the notification period for changes to prices, terms and conditions of existing products and services in these markets is 90 days. We need to ensure that the regulatory approach that we adopt in each market adequately addresses the competition issues which we have identified. In the WBA market we concluded that a 28 day notice period was appropriate but in other markets such as the WLA market, we concluded that the competition issues warranted maintaining a 90 day notice period for LLU services.

11.180 The investment required to use wholesale TI services is significantly greater and requires CPs to build more complex networks than for most of the services to which we have applied a 28 day notice period. Wholesale TI services also support multiple downstream services. This means that changes to wholesale TI services are likely to have a greater impact on CPs than changes to downstream services where we apply a 28-day notice period and will also be more complex to assess. Typically this might involve modelling the impact of the new charges on the cost of providing downstream services, securing internal approval for a pricing revision and finally notifying end-users (which may be subject to a minimum notice period, typically 28 days). With a shorter notification period, there is a risk that CPs would have insufficient time to react to changes to wholesale terms and could for instance be left financially exposed by changes to wholesale prices. For these reasons we consider that the advantages of a 90 day notice period outweigh the disadvantages and that a 90 day notice period is therefore still generally appropriate.

11.181 However, when prices are being reduced there should not be a risk of financial exposure for CPs and we therefore consider there is scope to reduce the notification period for price reductions to 28 days. Often price reductions are given as part of a special offer to which conditions are attached so the shorter notice period would also need to apply to such conditions.

11.182 We could maintain the 90 day notice period and grant waivers if we receive similar requests in future. However, in our view there is a likelihood that such requests would be granted, and we therefore consider that it would be more proportionate and less administratively burdensome to reduce the notice period for price reductions to 28 days.

11.183 We have therefore concluded that the following notification periods should apply:

- 28 day notice for prices, terms and conditions relating to new service introductions;
- 28 days notice for price reductions and associated conditions (for example conditions applied to special offers); and
- 90 days notice for all other changes to prices terms and conditions.

SMP Condition

11.184 We have concluded that BT should be subject to a requirement to notify charges, terms and conditions.

Legal tests

11.185 We are satisfied that the SMP condition (as set out in Annex 7) meets the relevant tests set out in the Act.

11.186 First, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that CPs have the necessary information about changes to terms, conditions and charges sufficiently in advance to allow them to make informed decisions about competing in downstream markets.

11.187 Secondly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that there are clear benefits from the notification of changes in terms of ensuring that providers are able to make informed decisions within an appropriate time frame about competing in downstream markets;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate, as 90 days is considered the minimum period necessary to allow competing providers to plan for changes to existing network access, and 28 days would be sufficient for new network access and price reductions; and
- transparent in that it is clear in its intention to ensure that BT provides notification of changes to their charges and terms and conditions.

Requirement to notify technical information

Aim of regulation

- 11.188 We have concluded that changes to technical information should be published in advance, so that competing providers have sufficient time to prepare for them.
- 11.189 Under the requirement to publish a RO, BT is required to publish technical information. Advance notification of changes to technical information is important to ensure that providers who compete in downstream markets are able to make effective use of the wholesale services provided by BT.
- 11.190 For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes to wholesale services offered by BT.
- 11.191 Technical information includes new or amended technical characteristics, including information on network configuration, locations of the points of network access and technical standards (including any usage restrictions and other security issues).
- 11.192 We consider the requirement to notify technical information imposed as a result of the 2007/8 Review has been effective in allowing providers sufficient time to prepare for such changes. Therefore we consider it is appropriate to impose the same requirement in this market review.
- 11.193 The condition requires the notification of new technical information within a reasonable time period but not less than 90 days in advance of providing new wholesale services or amending existing technical terms and conditions. We consider that 90 days is the minimum time that competing providers need to modify their network to support a new or changed technical interface or support a new point of access or network configuration.
- 11.194 Longer periods of notification may also be appropriate in certain circumstances. For example, if BT were to make a major change to its technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary. We consider that regulations are not necessary to address such circumstances, because they are likely to be sufficiently rare for us to address them on a case-by-case basis.

SMP Condition

- 11.195 We have concluded that BT should be subject to notify technical information.

Legal tests

- 11.196 We are satisfied that the SMP condition (as set out in Annex 7) meets the relevant tests set out in the Act.
- 11.197 First, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to wholesale TI services to enable them to compete in downstream markets.

11.198 Secondly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it enables providers to make full and effective use of network access to be able to compete in downstream markets;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate in that 90 days is the minimum period that Ofcom considers is necessary to allow competing providers to modify their networks; and
- transparent in that it is clear in its intention that BT notify changes to technical information in advance.

Quality of service information

Aim of regulation

11.199 We have concluded that BT should be required to publish specific quality of service information.

11.200 Vertically integrated operators have the ability to favour their own downstream business over third party CPs by differentiating on price or terms and conditions. This discrimination could also take the form of variations in quality of service (either in service provision and maintenance or in the quality of network service provided by the dominant provider to external providers compared to its own retail operations). This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage in terms of the services they can offer consumers to compete with the downstream retail business of the vertically integrated operator.

11.201 We consider the requirement to publish quality of service information imposed as a result of the 2007/8 Review has been effective in mitigating the risk of this type of discrimination. Therefore we consider it is appropriate to impose the same requirement on BT in this market review.

11.202 We have concluded that for each of the wholesale TI markets, BT should be subject to an obligation to publish information about the quality of service of the network access it provides. The obligation requires BT to publish information as directed by Ofcom, rather than requiring BT to publish specific information from the date of the imposition of the obligation.

11.203 The main benefit of this obligation is that BT can be required to publish information that would enable other CPs to determine whether the service they receive from BT is equivalent to that provided by BT to its own retail divisions.

11.204 BT already publishes a set of Key Performance Indicators (KPIs) that have been agreed with industry and the OTA. Given this agreement we do not consider it necessary to issue a direction specifying the quality of service information that BT should publish. This obligation will therefore function as a backstop that would allow Ofcom to require BT to publish specific information if satisfactory agreements cannot be reached in future.

SMP Condition

11.205 We have concluded that BT should be subject to publish quality of service information.

Legal tests

11.206 We are satisfied that the SMP condition (as set out in Annex 7) meets the relevant tests set out in the Act.

11.207 First, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have visibility of the quality of service that BT provides to itself and to other providers.

11.208 Secondly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it aims to support the non discrimination obligation in the provision of service by requiring BT to publish quality of service information about the service it provides to itself and to other providers;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate because it only requires BT to publish information as directed by Ofcom in the event we consider such information is required to monitor BT's compliance with its other obligations, which is the minimum condition to ensure the desired objective; and
- transparent in that it is clear in its intention that BT is required to publish quality of service information.

Requests for new network access

Aim of regulation

11.209 We have concluded that BT should be subject to obligations that determine how requests for new types of network access should be handled.

11.210 Section 87(3) of the Act authorises the setting of SMP services conditions in relation to the provision of network services. Under section 87(5)(a) such conditions may include conditions that secure fairness and reasonableness in the way in which requests for new network access are made and responded to.

11.211 Vertically integrated operators have the ability to favour their own downstream business over third party CPs by differentiating on price or terms and conditions. One form of discrimination is in relation to the handling of requests for new types of network access. This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage compared with the downstream retail business of the vertically integrated operator in terms of their ability to introduce new services to meet their customer needs and in terms of their ability to offer innovative services in order to compete more effectively.

11.212 In order to ensure that BT does not discriminate in this way, we consider that BT should be subject to a set of obligations that specify how it should handle requests for new types of network access. These obligations would support the obligation not to unduly discriminate by specifying how requests should be handled.

11.213 We consider that the obligations which are currently applied in these markets are fit for purpose and should be retained. These obligations include:

- a requirement for BT to publish reasonable guidelines specifying the required content and form of requests for new network access and how they will be handled;
- a requirement for BT to provide sufficient technical information to CPs to allow them to draft product specifications that are efficient and which satisfy the reasonable requirements; and
- timescales within which BT must acknowledge and process requests.

SMP Condition

11.214 We have concluded that BT should be subject to a requirement to determine how it responds to requests for new network access.

Legal tests

11.215 We are satisfied that the SMP condition (as set out in Annex 7) meets the relevant tests set out in the Act.

11.216 First, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by facilitating the development of competition in downstream markets.

11.217 Secondly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that its purpose is to support the non discrimination obligation in the processing of requests for new network access;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate as it continues to provide a SOR process based on the currently implemented process, while allowing scope for industry to be involved in agreeing process improvements; and
- transparent in that the condition is clear in its intention to set requirements for the processing of requests for new network access.

Disaggregated wholesale products

11.218 Although it is likely that over the next few years many end users will migrate from TI to AI leased lines, there is likely to be ongoing demand for TI services, particularly

from end-users whose applications have very demanding latency and jitter performance requirements.

11.219 We have concluded that in line with its OIC commitments, BT is required to launch disaggregated TI interface products provided there is reasonable demand.

Conclusions

Insufficiency of national and Community competition law remedies

11.220 At the beginning of this Section we set out our conclusion that national and Community law remedies would be insufficient to address the competition problems we have identified in the wholesale TI markets.

11.221 We set out below, by reference to the remedies we have decided to impose, our reasons supporting this conclusion, and which reasons lead us to conclude that competition would be ineffective in the wholesale TI markets over the course of the three year review period.

11.222 First, we do not consider that the nature and scope of the remedies we are imposing to address the competition problems we have identified could be imposed equally effectively under competition law. This includes reliance on the BT Undertakings which are, in essence, a remedy under national competition law.¹¹¹⁰ As we explained in 2005 when we accepted them in lieu of a reference to the Competition Commission, the BT Undertakings are intended to complement *ex ante* regulation under the Act. They seek to deploy a variety of mechanisms aimed at defining equivalent treatment, and at preventing and detecting discriminatory conduct by BT when supplying wholesale network access and backhaul services to its downstream competitors. In contrast, the SMP remedies we are imposing are needed to address the competition problems we have identified in this market review and which we consider will pervade over the course of the three year review period. For example:

- we are imposing a general network access obligation, in the manner and form set out in Condition 1, that applies in all of the wholesale TI markets – i.e. not just in one relevant market;
- Condition 1 provides, amongst other things, that the provision of general network access “shall also include such associated facilities as are reasonably necessary for the provision of network access and such other entitlements as Ofcom may from time to time direct.”¹¹¹¹ In this respect, under Condition 1.3, we are imposing two directions on BT setting out detailed terms according to which BT must provide two network access products – PPC and RBS Backhaul – and these are relevant to all the wholesale TI markets. This direction-making power is important since it allows us to direct BT as to the application of the general network access obligation – whether that should be in one or all of the wholesale TI markets – and so ensure its application can be specifically tailored to address the competition problem(s) we have identified, both now and over the course of the three year review period;
- we are imposing specific cost accounting obligations;

¹¹¹⁰ Enterprise Act 2002.

¹¹¹¹ Condition 1.3.

- the *ex ante* remedies we are imposing provide, amongst other things, that new products and services provided in the wholesale TI markets are captured by the relevant SMP obligations,¹¹¹² thus ensuring their continued effectiveness to address the competition problems over the course of the three year review period.

11.223 Secondly, as evidenced by the suite of remedies we are imposing, the requirements of intervening to address the competition problems in the wholesale TI markets are extensive. We list the remedies below:

- a requirement to provide network access including an obligation to offer fair and reasonable charges, terms and conditions;
- a requirement to provide cost accounting information;
- a requirement not to unduly discriminate;
- a charge control;
- a requirement to publish a reference offer;
- a requirement to give notice of changes to prices terms and conditions:
 - 28 days notice for the introduction of prices, terms and conditions for new services;
 - 28 days notice for price reductions for existing services; and
 - 90 days notice for all other changes to prices, terms and conditions.
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

11.224 Thirdly, based on our regulatory experience from two previous market reviews, recent developments in the wholesale TI markets, consultation responses and expected developments over the three year review period, we remain of the view that providing continued certainty in the wholesale TI markets is of paramount concern – both to BT and OCPs, and to end-users. We consider this is best achieved through *ex ante* regulation which, in comparison to competition law remedies and in light of our analysis of the relevant markets, will:

- will provide greater certainty over the course of the three year review period on the types of behaviour that are/are not allowed;
- allow for timely intervention – proactively by us and/or by parties being regulatory disputes to us for swift resolution¹¹¹³ – and consequently timely enforcement using the considerable enforcement powers accorded us under the Act to secure

¹¹¹² See for example, Condition 1 which provides that the provision of network access – i.e. both existing and new – is on fair and reasonable terms, conditions and charges.

¹¹¹³ See sections 185 to 191 of the Act, in particular section 185(1A).

compliance,¹¹¹⁴ through a process with which the market in general is familiar and which is also set out in the Act.

Conclusions regarding the remedies we are imposing in the wholesale TI markets

11.225 We have concluded that the following remedies should be imposed on BT in the wholesale TI markets:

- a requirement to provide network access, including an obligation to offer fair and reasonable charges, terms and conditions;
- a requirement to provide cost accounting information;
- a requirement not to unduly discriminate;
- a charge control;
- a requirement to publish a reference offer;
- a requirement to give notice of changes to prices terms and conditions:
 - 28 days notice for the introduction of prices, terms and conditions for new services;
 - 28 days notice for price reductions for existing services; and
 - 90 days notice for all other changes to prices, terms and conditions.
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

11.226 We have concluded that BT is also be subject to a direction under the general access condition to provide Partial Private Circuits (PPCs) in each of the markets, and in the low bandwidth TISBO market only a direction requiring it to provide Radio Base Station backhaul (RBS backhaul).

11.227 As explained above we have concluded that these remedies also apply to interconnection and accommodation services that BT provides in connection with wholesale TI services.

¹¹¹⁴ See sections 94 to 104 of the Act.

Section 12

Remedies for wholesale AI markets

Introduction

- 12.1 In this Section we set out the remedies that we have decided to impose on BT in the following markets:
- wholesale market for low bandwidth Alternative Interface Symmetric Broadband Origination (AISBO) in the WECLA at bandwidths up to and including 1Gbit/s; and
 - wholesale markets for low bandwidth Alternative Interface Symmetric Broadband Origination (AISBO) in the UK excluding the WECLA and the Hull area at bandwidths up to and including 1Gbit/s.
- 12.2 Unless stated otherwise, we refer to the markets set out above as the AISBO markets.
- 12.3 The remedies we have imposed are those which we conclude are appropriate to address the competition problems we have identified in the markets set out above as a result of our market analysis, in particular our respective SMP assessments, and which we conclude national and Community competition law alone would be insufficient to address. We set out the competition problems further below in this Section.
- 12.4 The wholesale low bandwidth AISBO markets have grown significantly since the 2007/8 Review. Ethernet services have become established as the preferred option for new installations at bandwidths up to 1Gbit/s for all but a minority of customers. Since the 2007/8 Review, BT's Openreach division has launched a second generation of Ethernet services based on significant investments in new backhaul infrastructure.
- 12.5 Current regulation in these markets is focused on promoting competition by regulating BT's provision of disaggregated wholesale Ethernet access and backhaul products on a non-discriminatory basis in conjunction with charge controls. We consider that this approach to regulating these markets continues to be appropriate for the period of this market review.

Summary of our conclusions

- 12.6 Figure 12.1 below summarises the competition problems we have identified in these markets and the remedies we have concluded are appropriate to address them.

Figure 12.1: Summary of the competition problems and remedies

Competition problems	Remedies for the wholesale low bandwidth AISBO market in the UK excluding the WECLA and the Hull area	Remedies for the wholesale low bandwidth AISBO market in the WECLA
Refusal to supply	Requirement to provide network access on reasonable request including an obligation to offer fair and reasonable charges, terms and conditions	Requirement to provide network access on reasonable request including an obligation to offer fair and reasonable charges, terms and conditions
	Requirement to provide Ethernet services on reasonable request <ul style="list-style-type: none"> disaggregated Ethernet access and backhaul; and end-to-end Ethernet products 	Requirement to provide Ethernet services on reasonable request <ul style="list-style-type: none"> disaggregated Ethernet access and backhaul; and end-to-end Ethernet products
<ul style="list-style-type: none"> Price discrimination; Non-price discrimination, e.g. different terms and conditions, delaying tactics (different delivery timescales for provision and fault repair); strategic design of products; exclusive dealing; quality discrimination; different SLAs and SLGs; Predatory pricing; Margin squeeze. 	Requirement to provide network access on Equivalence of Input basis	Requirement to provide network access on Equivalence of Input basis
	Obligation not to discriminate unduly	Obligation not to discriminate unduly
	Publication of reference offer	Publication of reference offer
	Requirement to notify changes to charges and T&Cs	Requirement to notify changes to charges and T&Cs
	Publication of quality of service as required by Ofcom	Publication of quality of service as required by Ofcom
	Notification of technical information	Notification of technical information
<ul style="list-style-type: none"> Price and non-price discrimination; Excessive pricing; Predatory pricing; Margin squeeze. 	Accounting separation and cost accounting obligations	Accounting separation and cost accounting obligations
<ul style="list-style-type: none"> Cross-subsidisation Excessive pricing Over investments Excessive costs/inefficiencies 	Charge control	Less strict form of charge control
<ul style="list-style-type: none"> Refusal to supply new network access; Non-price discrimination, e.g. delaying tactics, strategic product design, etc. 	Requests for new network access	Requests for new network access

Charge control remedy

- 12.7 In this Section, we set out our reasons why, at a high level, we remain of the view that charge controls in the AISBO markets should be imposed. Our conclusions, together with our reasons, consultation responses and considerations of those responses, with regard to the detail of the charge control we are imposing in each of the AISBO markets, are set out in Section 20 in respect of Ethernet services and Section 21 in respect of AISBO in the WECLA.

Other pricing remedies

- 12.8 As part of our assessment of the appropriate package of pricing remedies, together with the non-pricing remedies, to address the competition problems we have identified in the AISBO markets, we have considered the following, set out below. Our conclusions, together with our reasons, consultation responses and considerations of those responses, in relation to i) to iii) are set out in Section 9 and Section 16.
- i) cost orientation;
 - ii) the scope of the fair and reasonable obligation according to which, amongst other things, BT must provide general network access; and
 - iii) accounting separation and cost accounting obligations.
- 12.9 In relation to i), we have decided, as per our proposal in the June BCMR Consultation, not to impose a cost orientation obligation on BT in the AISBO markets.
- 12.10 In relation to ii), we have decided to broaden the scope of the obligation requiring the provision of network access by BT in the AISBO markets to be on fair and reasonable terms and conditions, to include also fair and reasonable charges.
- 12.11 In relation to iii), we have decided, as per our proposals in the June and November BCMR Consultations, to impose accounting separation and cost accounting obligations on BT in the AISBO markets. This is discussed in Section 16.

Remedies as a whole in the AISBO markets

- 12.12 We have decided to make some changes relative to the 2007/8 Review.
- First, we are introducing obligations in the SMP conditions requiring BT to provide Ethernet services on the basis of Equivalence of Input (EOI). In particular, we require BT to provide network access in the AISBO markets (except where we have said otherwise) on the basis of EOI.
 - Secondly, we provide more clarity around the routing arrangements that we expect should apply between areas served by different Trunk Aggregation Nodes (TANs). In the 2007/8 Review we relied on general access obligations and did not specify product-related obligations explicitly. This has at times led to a difference in view between BT and CPs with regard to the implementation of BT's general network access obligations, particularly in relation to circuit routing. We therefore consider it important to provide greater clarity as to what BT's obligations are.
 - Thirdly, we consider it important that BT continues to work with the industry to develop In Span Handover (ISH) interconnection and the 'high density handover' Ethernet aggregation capability requested by CPs. These developments have the potential to make interconnection more efficient and to reduce the pressure on co-location space (which is often in short supply). An ISH option would also be better suited to the needs of larger CPs with network infrastructure, enabling them to avoid co-locating in BT exchanges. In light of the potential benefits, we consider it important that Openreach works with CPs to develop these new forms of interconnection as soon as reasonably practicable so that deployment can proceed and CPs, and ultimately end-users, could begin to benefit from these enhancements.

- Lastly, we note that the only difference between the remedies imposed inside and outside the WECLA is the charge control remedy. This reflects our SMP assessment which found the prospects for the development of competition are more favourable in the AISBO market in the WECLA than outside it.

12.13 We consider that the remedies as a whole in the AISBO markets would achieve our statutory duties and would satisfy the relevant legal tests. In reaching our conclusions we have taken account of our regulatory experience from two previous market reviews, recent developments in the AISBO markets, consultation responses, and expected developments over the review period of three years.

12.14 In reaching our conclusions on the appropriate remedies to impose, we have taken due account of all applicable guidelines and recommendations issued by the European Commission (EC), and we have taken utmost account of the BEREC Common Position.¹¹¹⁵ We have also had regard to relevant guidance from the European Regulators' Group (ERG), Ofcom and ourselves.

Structure of this Section

12.15 This Section is structured as follows:

Sub-section	Content
Assessment of competition problems the AISBO markets	Assessment of competition problems, insufficiency of national and Community competition law remedies and the result of our assessment.
Approach in the June and November BCMR Consultations and the remedies we proposed	Summary of the assessment we carried out in the June and November BCMR Consultations and our proposed remedies.
Consultation responses and Ofcom's considerations	Summary of stakeholders' comments on our June and November BCMR Consultations and our considerations in respect of those comments.
Ofcom's conclusions on the appropriate remedies	Details of the remedies we have decided to impose and, in relation to each, a statement of its aim and the legal tests we have applied to it.

Assessment of competition problems in the wholesale AISBO markets

12.16 We summarise below our assessment of the competition problems in the wholesale AISBO markets before setting out the remedies¹¹¹⁶ we have concluded are appropriate to address those problems.

Competition problems identified in the wholesale AISBO markets

12.17 In light of our SMP assessment, we summarise below the competition problems we identified in the AISBO markets and the behaviour in which, in the absence of *ex ante* regulation, we have concluded BT would have the incentive, and its market power would afford it the ability, to engage in. These include, in particular:

- refusal to supply access at the wholesale level and thus restrict competition in the provision of services in the retail AI leased lines markets, the residential fixed broadband market and mobile market;

¹¹¹⁵ BEREC Common Position on best practices in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale lease lines, BoR (12) 83.

¹¹¹⁶ This approach is consistent with our approach in the June BCMR Consultation.

- unduly discriminatory pricing practices – e.g. by charging its competing providers more than the amount charged to its downstream divisions;
- unduly discriminatory non-pricing practices – e.g. by supplying the same products on different terms and conditions, different timescales for provision and repair, quality discrimination, different SLAs and SLGs, creating new variants to fulfil the requirements of its downstream division and taking longer to address, or avoiding addressing, the requirements of its competitors;
- charging excessively high prices, margin squeeze, predatory pricing and/or anti-competitive cross subsidisation; and
- refusal to supply and/or delaying tactics in the provision of new network access services requested by its competitors.

12.18 We have concluded that BT would have the incentive and ability to engage in these practices in order to adversely affect the development of competition in the related downstream retail markets and thus enable it to act independently of competitors, customers and ultimately of consumers in those markets.

Insufficiency of national and Community competition law remedies

12.19 For the reasons set out at the end of this Section, and by reference to the remedies we are imposing, we have concluded that national and Community law remedies would be insufficient to address the competition problems we have identified.

12.20 This has led us to conclude, as per our view in the June BCMR Consultation, that over the course of the review period of three years, competition would be ineffective in the AISBO markets.

12.21 We now turn to the approach we adopted in the June BCMR Consultation which followed on from our assessment of the competition problems.

Approach in the June BCMR Consultation

Assessment of appropriate remedies

12.22 We set out below our initial assessment of appropriate remedies based on our analysis of how competition operates in the regulated AISBO markets taking into account stakeholder responses to our CFI. We published this initial assessment in our June BCMR Consultation.

12.23 In our June BCMR Consultation we proposed remedies which would require BT to provide its competitors with wholesale access to its network and would define the rules that would apply to its provision of such access. To assess the appropriate form of the remedies we proposed, we carried out an analysis of how competition operates in the AISBO markets, and took into account views expressed by stakeholders in response to the CFI. We summarise below the following specific issues we identified as a result of this provisional analysis.

- in relation to refusal to supply:
 - provision of Ethernet access, Ethernet backhaul and Ethernet end-to-end specific products;

- provision of integrated Ethernet access and backhaul;
- provision of new forms of Ethernet interconnection (a high-density handover product);
- provision of specific backhaul products for mobile networks, e.g. SyncE; and
- availability of space and power available in BT's exchanges.
- in relation to non-price discrimination:
 - potential restriction of circuit routing rules so that CPs are forced to adopt inefficient network topologies;
 - design of adequate switching and migrations processes;
 - potential adoption of delaying tactics during the Statement of Requirement process; and
 - potential discriminatory behaviour through Openreach Project Services.
- in relation to pricing:
 - concerns about excess construction charges.

Analysis of how competition operates in the AISBO markets

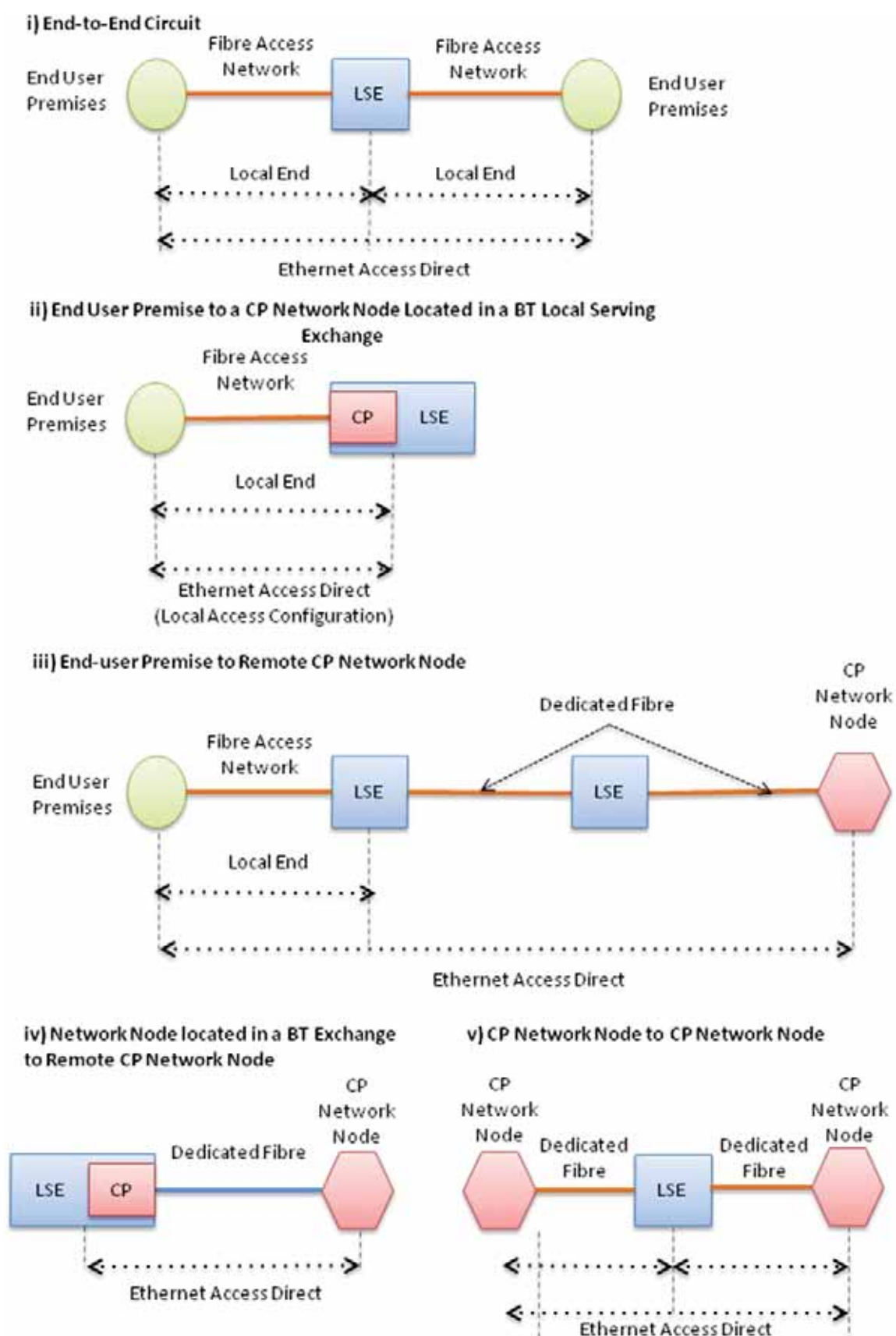
12.24 We set out below the analysis we carried out of how competition operates based on BT's regulated AISBO services.

BT's current AISBO products

- 12.25 BT currently provides both wholesale access and backhaul services in the AISBO markets.
- 12.26 Since the 2007/8 Review, BT has withdrawn most WES, WEES and BES products from new supply.¹¹¹⁷ These first-generation products are being replaced by a second generation of Ethernet access and backhaul products, Ethernet Access Direct (EAD) and Ethernet Backhaul Direct (EBD).
- 12.27 Wholesale access Ethernet services such as BT's EAD service are used to provide short-range services, typically up to 25 km (up to 35km in the case of EAD 1Gbit/s), and include:
- i) end-to-end services between two of the end-users' premises;
 - ii) terminating segments between an end-user's site and a CP's network node (which could be located in the CP's building or in co-location space rented by the CP in a BT exchange); and
 - iii) terminating segments between CP's network nodes (which could be located in co-location facilities in a BT exchange or in the CP's own premises).
- 12.28 Figure 12.2 below illustrates selected examples of these configurations for EAD.

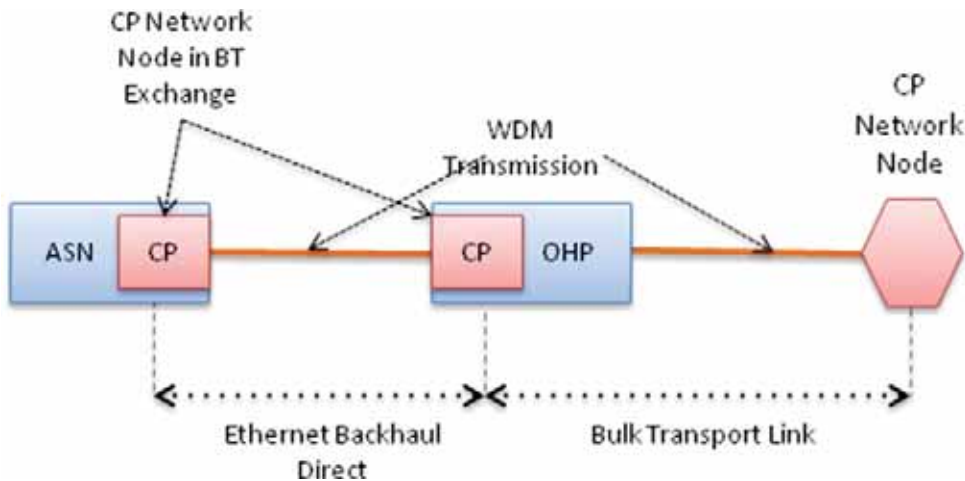
¹¹¹⁷ The WES Aggregation product and the 2.5Gbit/s and 10Gbit/s versions of WES, WEES and BES are still available for new supply although BT has subsequently notified industry of its intention to withdraw these remaining services from new supply in 2013.

Figure 12.2: Wholesale Ethernet access services



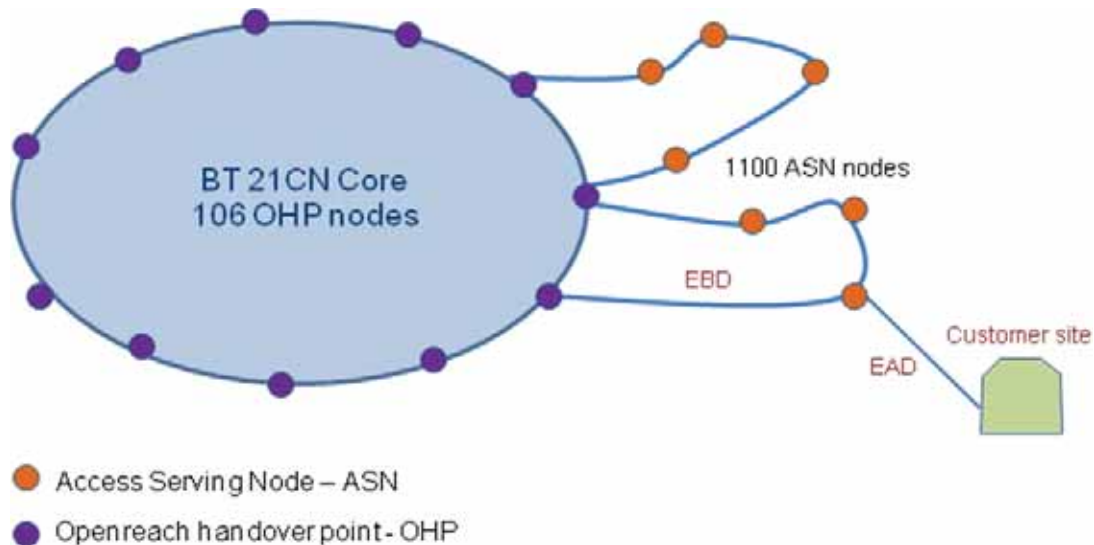
- 12.29 Wholesale access services generally use dedicated fibre circuits between their end-points and therefore do not make use of CPs' backhaul transmission systems.
- 12.30 Wholesale backhaul services are used to provide high capacity backhaul links between an operator's network nodes. These circuits generally make use of CPs' backhaul transmission systems and aggregate multiple individual circuits into higher capacity links. Figure 12.3 below illustrates the BT backhaul products EBD and Bulk Transport Link (BTL).

Figure 12.3: Wholesale Ethernet backhaul services



- 12.31 BT introduced EBD in 2009, a backhaul product based on its Orchid network.¹¹¹⁸ EBD provides backhaul connectivity from around 1,100 BT exchanges designated as Access Serving Nodes (ASNs), typically located in larger towns and cities, to corresponding major exchanges designated as Openreach Handover Points (OHPs), which are co-located in major urban centres with BT's 21CN core network nodes. Below is a schematic of the Orchid infrastructure.

Figure 12.4: Orchid network architecture



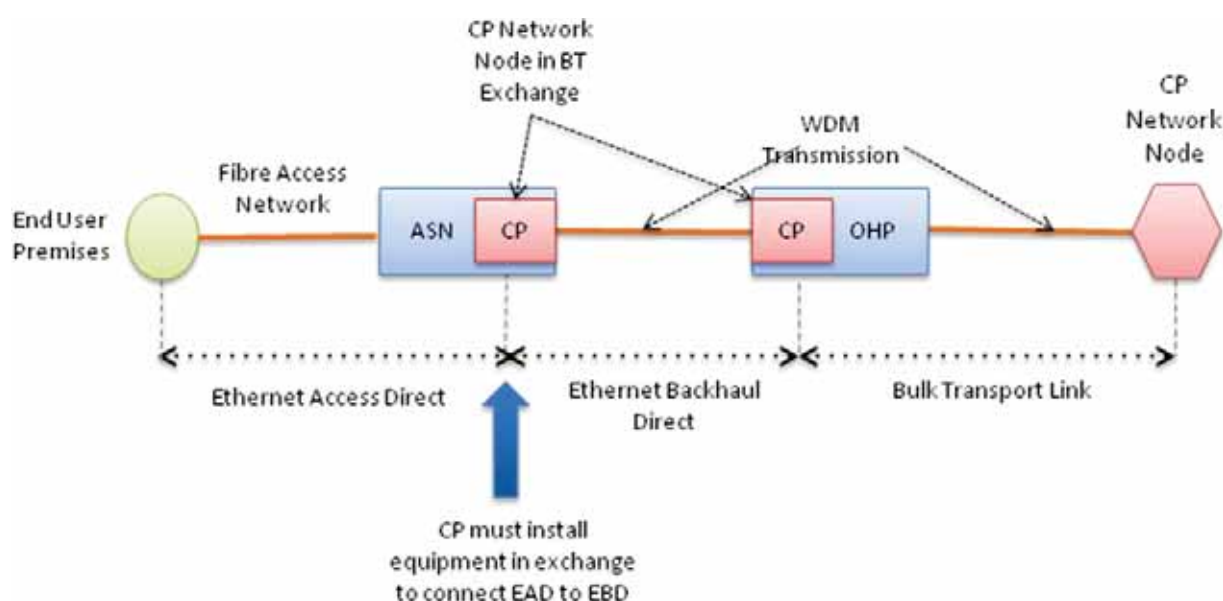
¹¹¹⁸ The industry normally refers to the Openreach EBD architecture as the Orchid network, from the original name of Openreach' network design project.

- 12.32 The EBD service only provides connectivity from ASNs to their parent OHPs, therefore it is only available to purchase from the 1,100 ASNs. It is currently available with bandwidths of 10Mbit/s, 100Mbit/s, 1Gbit/s and 10Gbit/s.¹¹¹⁹

Comparison of PPCs and wholesale Ethernet services

- 12.33 Figure 12.5 below illustrates how the BT wholesale access and backhaul Ethernet products may be used together to provide longer distance terminating segments for retail leased lines.

Figure 12.5: BT Ethernet portfolio



- 12.34 There are similarities between the network topologies of BT's wholesale Ethernet services and TI PPCs but several significant differences:
- the wholesale Ethernet services are only supplied on a disaggregated basis (i.e. access and backhaul services are sold separately and cannot be purchased as complete terminating segments comprising both access and backhaul);
 - in order to connect EAD circuits to EBD circuits, CPs must rent co-location space in the BT ASN exchange and install their own multiplexing equipment; and
 - there is no ISH option, so CPs must either rent co-location space at the OHP exchange where the circuit can be terminated and provide their own onward transmission or use a BTL to have the circuit terminated at their own network node.

CPs' consumption of BT's regulated products

- 12.35 Since the 2007/8 Review the volumes of TI services have been in sustained long-term decline and AI services, particularly Ethernet services, have become

¹¹¹⁹Openreach has introduced higher speeds gradually according to customer demand and technical availability. In the future, higher speeds such as 40 Gbit/s and 100Gbit/s may be introduced.

established as the preferred option for new installations. These trends have been driven mainly by the following factors:

- demand for higher bandwidth leased lines has increased significantly in the last few years. This is driven by many organisations which require dedicated services at higher bandwidth, as well as by increased take-up and speed of consumer broadband services, both fixed and mobile, which drives demand for high bandwidth backhaul. At the end of 2011, the total take-up of broadband services has reached 76% of UK households, with 20.4 million households using fixed broadband lines and over 5 million using mobile broadband;¹¹²⁰ and
- the cost per unit of bandwidth of Ethernet technology is lower than that of legacy TDM-based technology.

12.36 As a consequence, take-up of Ethernet-related leased lines has increased significantly since the last market review; our estimates indicate that compared to 2007/8, volumes of Ethernet services operating at speeds up to and including 1Gbit/s have grown by approximately 45%.

12.37 CPs have adopted a wide range of network architectures and patterns of consumption of Ethernet services. Nevertheless the following trends are evident:

- aggregation – CPs, including BT, generally purchase individual wholesale services and aggregate them using their own equipment which is typically located in Points of Presence (PoPs) in BT exchanges. This differs from the approach used with PPCs for TI services in which BT aggregates circuits for handover on high capacity interconnection links;
- network architecture – For its own downstream services BT has adopted a 'backhaul and core' network architecture which involves aggregating traffic at ASNs for transmission over EBD circuits to OHPs for interconnection with its 21CN core network. In contrast, some CPs have adopted a mesh architecture for backhaul, linking aggregation nodes typically located in BT exchanges to each other. Sometimes this arrangement does not have a clearly defined core network;
- consumption of access-only products - CPs are increasingly establishing PoPs at larger BT local exchanges so that they can consume 'access only' products such as EAD Local Access; and
- usage of EBD for backhaul – BT and LLU operators are the main users of BT's WDM-based EBD backhaul service. Most other CPs continue to use point-to-point fibre Ethernet services such as EAD, BES and WES for backhaul.

12.38 These trends point to significant differences in the approach adopted by BT and CPs, particularly in relation to network architecture and usage of EBD services. A number of factors may have contributed to these differences:

- early network deployments were on a small scale so a mesh structure may have made more sense initially;
- EBD was not introduced until BT launched its second generation of Ethernet products while its first generation products all had distance limitations initially,

¹¹²⁰ "Communication Market Report 2012" a Research Document published by Ofcom on 18 July 2012 and available at http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr12/CMR_UK_2012.pdf.

and this may have encouraged CPs to build networks using short links between BT local exchanges;

- EBD aggregates traffic efficiently by using WDM technology over pre-defined routes between ASNs and their parent OHPs. Its efficiency, however, may not serve the needs of CPs as well as it serves those of BT. For example, CPs may have established PoPs in different locations and may not need to convey traffic along BT's predefined EBD routes;
- point-to-point Ethernet services are less resilient than SDH services which are based on a self-healing ring architecture. Although resilient options of Ethernet services are available, a mesh architecture may be a more cost-effective way of introducing resilience;
- BT has not offered a product which combines access and backhaul, which would enable CPs connected only to BT's OHP nodes to reach all end-users. In order to reach end-users located beyond the maximum range of an EAD circuit from an OHP, a CP needs currently to purchase a high bandwidth EBD circuit and install aggregation equipment at the appropriate ASN to connect EAD circuits serving end-users to the EBD circuit. This may not be a cost-effective proposition for a CP which serves a low volume of circuits, and connection to BT's OHP nodes may have limited benefit for such CPs;
- siting Ethernet switches in BT local exchanges provides CPs with an opportunity to reduce backhaul costs by aggregating traffic at these local exchanges. This may have further increased their incentive to use local exchanges as hubs for their networks; and
- CPs are incentivised to locate their PoPs in BT's fibre-serving exchanges because BT's EAD Local Access service can offer significantly lower tariffs than other EAD services.

12.39 It is currently unclear whether the differences between the approach adopted by BT and CPs are due to enduring factors such as differences in scale and scope or whether they are primarily a function of strategies adopted by CPs during the early stages of market development. Several of the factors discussed above suggest the latter may be the case. Also, as discussed in more detail below, CPs' approach is evolving as evidenced by the product development requests that have been submitted to BT.

Relevance of the Undertakings to the AISBO markets

12.40 BT's Undertakings, given to Ofcom under Section 155 of the Enterprise Act in lieu of a market reference to the Competition Commission, require BT to comply with a series of regulatory obligations to apply to some of its wholesale access and backhaul services. Some of BT's commitments in its Undertakings relate to specific products in the AISBO markets, including:

- to provide WES and BES services on the basis of EOI; and
- to provide new WES Access, WES Backhaul and WEES products on the basis of EOI.¹¹²¹

¹¹²¹ Section 3.1 of the Undertakings.

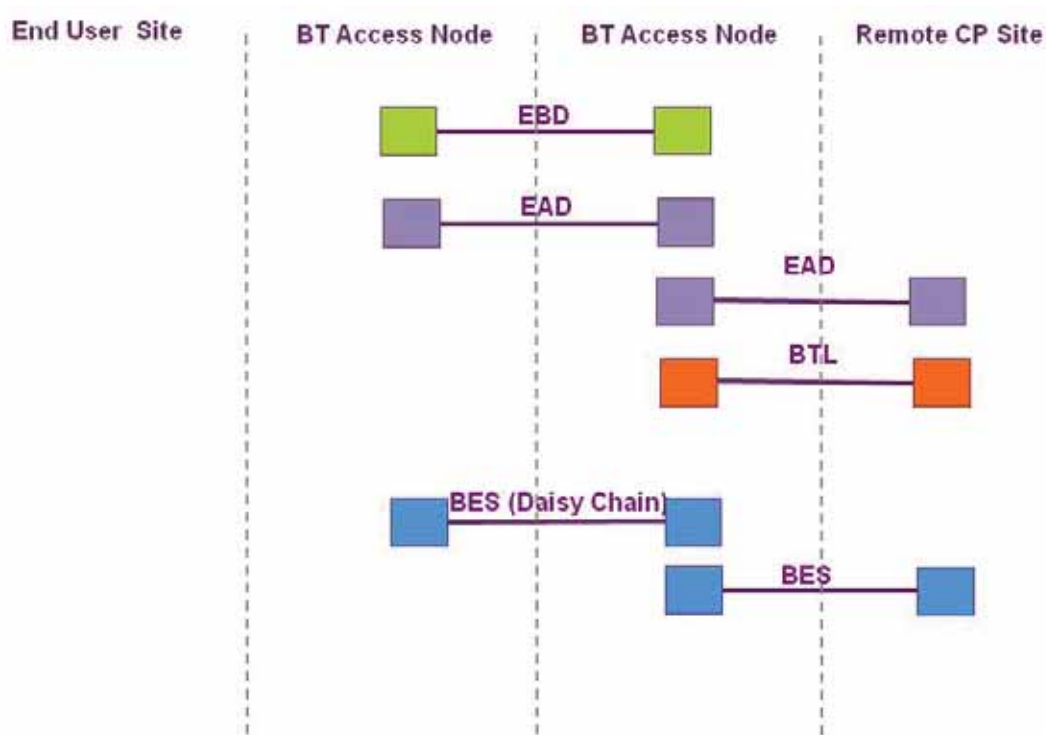
- 12.41 The Undertakings established the principle of EOI, which means that BT provides, in respect of a particular product or service, the same product or service to all CPs (including BT) on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all CPs (including BT) of the same commercial information about such products, services, systems and processes. In particular, it includes the use by BT of such systems and processes in the same way as other CPs and with the same degree of reliability and performance as experienced by other CPs.¹¹²²
- 12.42 The Undertakings were designed to ensure that BT does not discriminate between its own downstream divisions (including, for example, BT Retail, BT Wholesale and BT Global Services) and competitors when offering access services. The set of remedies set out in the Undertakings were particularly designed to address non-price discrimination.
- 12.43 As set out further below, as part of the suite of SMP remedies, we proposed including an obligation on BT to provide Ethernet services on an EOI basis.

Development of AISBO products

Developments in LLU backhaul

- 12.44 In relation to LLU backhaul services, the main development since the 2007/8 Review has been the launch by BT of the second generation of Ethernet products and the partial withdrawal from new supply of the first generation of products. Particularly for LLU backhaul, BT has withdrawn BES products at bandwidths lower than 2.5Gbit/s.
- 12.45 We also noted that bandwidth requirements for LLU backhaul are growing steadily. The increased take-up of fixed broadband combined with increasing consumers' demand for higher speed broadband connectivity has driven demand for higher bandwidth backhaul services.
- 12.46 With the introduction of the new Ethernet products, LLU providers now use both EAD and EBD for LLU backhaul. Figure 12.6 below provides an overview of the Openreach products most commonly used and their possible combinations.

¹¹²² Section 2.1 of the Undertakings.

Figure 12.6: Openreach LLU backhaul solutions

- 12.47 Typically, if an LLU operator requires backhaul connectivity of at least 1Gbit/s bandwidth from an ASN (i.e. a BT exchange which supports EBD) it would consider buying a 1Gbit/s EBD. EBDs, however, are only provided between specific BT nodes (ASNs and OHPs) and cannot reach out to the CP's remote site. Therefore, in addition to the EBD, the LLU provider must provide or purchase a point-to-point Ethernet connection from the OHP to its remote site. Depending on the capacity requirement, the point-to-point connection, if purchased from BT, can be either an EAD (available at 1Gbit/s and 10Gbit/s) or a BTL (only available at 10Gbit/s). BTL would be purchased where the CP aggregates several 1Gbit/s connections.
- 12.48 If, on the other hand, the serving Local Exchange is not an ASN, the LLU operator would purchase a point-to-point Ethernet connection at 1Gbit/s, i.e. 1Gbit/s EAD. In the old product portfolio, the main product used for Ethernet-based backhaul was BES, also available in its daisy chain version to connect two or more BT Local Exchanges in a chain.

Developments in mobile backhaul

- 12.49 Since the 2007/8 Review, MNOs have witnessed strong growth in the demand for mobile data services. The growth has been fuelled by advances in mobile devices and applications (e.g. the introduction of smart phones) and the development of advanced radio access technologies which provide higher capacities. MNOs predict the increase to continue at a similar rate with additional cell capacity becoming available through the use of 900MHz and 1800MHz spectrum for 3G data services and the deployment of 4G (LTE) services using the additional 800 MHz and 2.6 GHz spectrum that was auctioned this year.¹¹²³

¹¹²³ Everything Everywhere Ltd, Hutchison 3G UK Ltd, Niche Spectrum Ventures Ltd (a subsidiary of BT Group plc), Telefónica UK Ltd and Vodafone Ltd all won spectrum.

- 12.50 In response to the traffic growth, MNOs are gradually replacing TI backhaul links with Ethernet based backhaul links to benefit from the higher capacity and the lower unit cost of bandwidth.
- 12.51 In addition to carrying voice and data traffic, mobile backhaul services also perform another function which is essential to the operation of mobile networks. This is to distribute timing information to keep mobile base stations in accurate synchronisation with each other and with other network elements. TI mobile backhaul circuits can perform this function because they operate on synchronous networks that are synchronised to a highly stable common reference clock. As a result, timing information is present in the synchronous data stream carrying the traffic on every circuit. This capability is not available with generic carrier Ethernet services as the transmission technology is asynchronous in nature.
- 12.52 In the short term, MNOs are likely to retain some TI circuits at each mobile base station for synchronisation purposes or use TI circuit emulation techniques over Ethernet services, but in order to complete the transition to Ethernet backhaul, MNOs are also making alternative arrangements for synchronisation.
- 12.53 The two technologies preferred by MNOs for synchronisation over carrier Ethernet services are the IEEE 1588 and SyncE protocols. It is currently unclear whether a single solution will prevail or whether both protocols will be required.
- 12.54 SyncE requires a variant of carrier Ethernet but IEEE 1588 uses a packet layer approach that can operate over generic carrier Ethernet services. Both technologies are designed to transmit timing information over carrier Ethernet services. Unlike TI services, the timing information is not already present in the network and must be derived from an external reference clock specifically for mobile backhaul and distributed across the network.
- 12.55 At the time we published our June BCMR Consultation, we understood Openreach was about to introduce a SyncE variant of its EAD product in response to a request from BT Wholesale and other CPs.

Ofcom's considerations of the issues

- 12.56 In Section 11 (paragraphs 11.59 to 11.64) of our June BCMR Consultation we summarised the responses we received to the CFI. We have not reproduced that summary in this Statement but detail below the specific issues that we considered needed to be addressed in relation to AISBO remedies based on the operation of competition in AISBO markets set out above, the responses we received to our CFI and our discussions with stakeholders. These issues were:
- in relation to refusal to supply:
 - provision of Ethernet access, Ethernet backhaul and Ethernet end-to-end specific products;
 - provision of integrated Ethernet access and backhaul;
 - provision of new forms of Ethernet interconnection (high-density handover product);
 - provision of specific backhaul products for mobile networks, e.g. SyncE;

- availability of space and power available in BT's exchanges.
- in relation to non-price discrimination:
 - potential restriction of circuit routing rules so that CPs are forced to adopt inefficient network topologies;
 - design of adequate switching and migrations processes;
 - potential adoption of delaying tactics in product development processes;
 - potential discriminatory behaviour through Openreach Project Services.
- in relation to pricing:
 - concerns about excess construction charges.

12.57 In our June BCMR Consultation we discussed these points in turn as set out below.

Whether specific remedies for Ethernet access, backhaul and end-to-end are required

12.58 At the time of Ofcom's Telecoms Strategic Review (TSR)¹¹²⁴, there was a prospect that convergence brought about by deployment of next-generation networks (NGNs) might in future generate additional opportunities for competition in backhaul, since CPs would be able to aggregate different types of traffic, hitherto carried on service specific platforms, onto common backhaul circuits from BT local exchanges. In particular, we envisaged that by combining LLU backhaul with backhaul for other services, CPs might gain sufficient scale to support sustainable investment in competing infrastructure to provide backhaul circuits to BT exchanges.

12.59 We sought to promote such investment, and, therefore, BT's Undertakings committed BT to introduce separate Ethernet access and backhaul services to allow CPs to aggregate leased lines and broadband traffic at BT's local exchanges. We continued to support investment in competing backhaul infrastructure in the 2007/8 Review, although we did not require BT to provide specific forms of network access in this respect.

12.60 Our analysis in this current review indicated that convergence had not developed to the extent envisaged. This was because most CPs, with the notable exception of BT, tended to specialise in either the consumer or the business markets and thus have fewer opportunities to aggregate different types of traffic.¹¹²⁵

12.61 In the TSR we also set out our intention to promote infrastructure competition where it is effective and sustainable. On this basis our regulations have favoured the provision of separate regulated access and backhaul products so that CPs have the possibility to exploit economies of scale of their networks and, where sustainable, invest in their own backhaul.

12.62 In light of the above, we considered it to be appropriate to require BT to provide Ethernet access and Ethernet backhaul and we therefore proposed introducing

¹¹²⁴ See, for example, Ofcom final statement of the Strategic review of Telecommunications <http://stakeholders.ofcom.org.uk/binaries/consultations/752417/statement/statement.pdf>

¹¹²⁵ We gave an overview of the CPs active in this market in Section 2 of our June BCMR Consultation.

specific SMP conditions in this regard. The aim of these requirements would be to ensure that BT continues to supply disaggregated Ethernet access and backhaul. Due to pre-existing regulation, CPs have developed their business models around the availability of disaggregated Ethernet services, and their withdrawal would be extremely disruptive to CPs and consumers.

- 12.63 For similar reasons, we also considered it appropriate to require BT to provide short range end-to-end wholesale services. BT already supplies such services, subject to a 25km radial distance limit (as set out in the Undertakings). Such services provide a more efficient solution for short range services than constructing services using terminating segments and consequently their withdrawal would be disruptive for CPs. We considered that the 25km limit is reasonable as CPs can use other access products efficiently to deliver longer range services.

Whether an integrated access and backhaul Ethernet product is required

- 12.64 One of the concerns about BT's current low-bandwidth AISBO product set cited by CFI respondents was that Openreach has not provided an integrated access and backhaul product that would allow CPs to achieve national coverage by interconnecting with BT only at the 56 Trunk Aggregation Nodes (TANs). Currently, CPs must establish PoPs at ASN exchanges and install aggregation equipment in order to use EBD circuits.
- 12.65 The unit cost of EBD backhaul is significantly lower than point-to-point fibre based services such as EAD so we would be concerned if the lack of an integrated product created a scale barrier that prevented CPs from making use of EBD services to the same extent as BT should they wish to do so. However, this did not appear to be the case. For example, EBD 1Gbit/s rental charges are either lower or are comparable with EAD 10Mbit/s and 100Mbit/s rental charges in typical deployment scenarios. This suggested that there is a strong case for using EBD services for backhaul rather than EAD services.
- 12.66 On this basis, it was not clear to us that there was a significant scale barrier that would prevent CPs using the disaggregated products to achieve national coverage and therefore there did not seem to be a strong case for requiring BT to introduce one, particularly as CPs were likely to prefer to deploy their own aggregation equipment as it gives them additional flexibility to define service characteristics. More generally, since all of the regulated products in this market are currently available on the basis of EOI, there did not appear to be any other barriers to CPs making greater use of EBD services with the exception of the accommodation and circuit routing issues, which we discussed further in Section 11 of the June BCMR Consultation and below.

New forms of Ethernet Interconnection (high-density handover)

- 12.67 CPs have submitted several requests to BT for new forms of Ethernet interconnection. These include the Ethernet aggregation development that was part of Openreach's Industry Commitments¹¹²⁶, a more recent development request

¹¹²⁶ In 2009, we agreed to relax some of BT's commitments in its Undertakings which related to operational support systems separation which had been affected by Openreach resource constraints in product development. In conjunction with this change, Openreach gave a firm commitment as part of the Undertakings to deliver a set of important product and systems developments that it had agreed with the industry to prioritise. These developments, which became known as the 'Openreach Industry Commitments' (OICs), included several developments relating to AI services. One of these AI developments was the deployment of aggregation functionality at larger exchanges to allow multiple circuits to be multiplexed onto higher bandwidth circuits for

known as ‘high density handover’¹¹²⁷ for In Building Handover (IBH) interconnection¹¹²⁸ and also a request for an ISH interconnection¹¹²⁹ option. All of these requests have a common theme which is a requirement for aggregation of Ethernet circuits for handover. This would enable multiple Ethernet circuits to be handed over to CPs on a single high bandwidth handover link rather than as individual circuits. This functionality is the standard method of handover for TI services but is not currently available for BT’s AISBO services.

- 12.68 Aggregated handover has the potential to make interconnection more efficient by reducing the overall amount of equipment required (and as a result reduce the amount of space and power consumed) and therefore to reduce costs. It could also help reduce pressure on space in BT exchanges which is a concern for CPs. An aggregated ISH handover option would be better suited to CPs with extensive network infrastructure and would enable CPs to interconnect at BT exchanges where no space is available.
- 12.69 Two of the three solutions analysed in the Openreach feasibility study proposed to aggregate multiple CPs’ EAD circuits by means of an Ethernet switch deployed and managed by Openreach. Openreach would then deliver multiple EADs to each CP aggregated onto high bandwidth links.
- 12.70 Given the potential benefits we considered it important that Openreach works with CPs to develop these new forms of interconnection as soon as reasonably possible so that deployment could proceed and CPs could begin to benefit from these enhancements.

Whether there is a need for any further intervention to support mobile backhaul

- 12.71 We did not consider it necessary to introduce a specific obligation requiring BT to provide mobile backhaul. As discussed above, MNOs will use either generic carrier Ethernet services or variants that support synchronisation capabilities, both of which fall within the scope of the wholesale low bandwidth AISBO markets. We considered that the proposed Ethernet access and backhaul obligations together with the obligation for BT to provide services on an EOI basis will be sufficient to address any competitive concerns. At the time we noted that Openreach was preparing to launch a SyncE variant of EAD that will be available to other CPs on an EOI basis.
- 12.72 Some CPs expressed concern that BT had refused them access to reference clock sources at local exchanges. They argued that they should also have access to these timing sources from which BT derives the timing information that it adds to mobile backhaul services (at BT local exchanges) for onward transmission to mobile base stations for synchronisation purposes.
- 12.73 We would be concerned if CPs were unable to self-provide timing information in a manner that would allow them to compete effectively with BT. However, from the information available to us it was not clear why CPs could not reasonably self-provide

handover. In February 2012, Openreach closed this commitment to Ethernet aggregation on the basis that a feasibility study was conducted and concluded. At the time BT proposed to proceed with revised proposal from industry called High Density Handover (see footnote below) subject to industry supplying evidence of commercial demand.

¹¹²⁷ Statement of Requirements 8166

¹¹²⁸ i.e. for interconnection at collocation space rented by a CP in a BT exchange

¹¹²⁹ i.e. interconnection in a manhole adjacent to a BT exchange

timing information at their PoPs at BT local exchanges (for example by distributing timing information across their own backhaul networks). We also noted that Openreach was working with CPs to resolve any contractual issues with co-location space that may impede timing distribution. Consequently there did not seem to be a strong case for requiring BT to provide access to timing information.

Availability of space and power in BT's local exchanges

- 12.74 We acknowledged that accommodation services such as space and power in BT's local exchanges are an important element of the regulated services that BT provides in the AISBO market. In Section 13 of the June BCMR Consultation we discussed stakeholders' concerns about the availability and allocation of accommodation services in more detail.

Circuit routing restrictions

- 12.75 In defining remedies to address BT's market power in the 2007/8 Review, we reflected on how competition downstream of the AISBO market could develop further.
- 12.76 We considered that operators could benefit from economies of scale by building networks in a manner designed to exploit opportunities to aggregate traffic. In our view, CPs could realise economies of scale in the core of their networks to a much greater extent than in the access segments.
- 12.77 A number of CPs had built core networks by establishing PoPs in main population centres and had connected them with high-capacity resilient links. We considered that a CP's choice of location for a PoP would be driven by the number and concentration of customers it served in the area. Similarly, the design of a core network connecting those PoPs would be driven by the scale of traffic to be transmitted between the different areas. We observed that BT's network design had then established 106 main core nodes, which aggregated traffic from all the different services.
- 12.78 Our inference on how competition would work in the AI market was mainly based on the observations of the TI market. For the TI market, we noted that, in most circumstances, a CP would not locate (i.e. interconnect with BT) at more than one Tier 1 node in close proximity to another Tier 1 node within the same urban area. A CP would do so only if there was a sufficient volume of traffic within a particular urban centre to justify additional interconnection and therefore opportunities to exploit the economies of scale.
- 12.79 Therefore, our decision on the boundary between trunk and terminating segments in AI services was based on CPs' typical choice of interconnection, rather than on the location of core nodes in BT's network. In particular, we considered that it would be sustainable for a CP to reach national coverage in the AI market by interconnecting its core network with BT at just 56 different points, rather than at all 106 of BT's core nodes. For this purpose we grouped BT's 106 core nodes into 56 regional groups known as TANs.
- 12.80 When BT subsequently introduced its EAD service we understood that it had defined geographic catchment areas for each TAN based on the exchanges 'served' by each ASN (strictly those exchanges that can be reached from each ASN by EAD circuits subject to the distance limits imposed by BT). It then initially barred EAD circuit routings that crossed the boundaries of these TAN areas except for end-to-end

circuits (i.e. those between two end-user premises). Following discussions with CPs, these restrictions were subsequently suspended. However, CPs regard them as unduly restrictive and remain concerned that BT may reintroduce them.

- 12.81 The basis for the restrictions applied by BT is that EAD circuit routings that cross one of the TAN boundaries, as defined by BT, contain a trunk segment, which BT is not obliged to provide.
- 12.82 Having carefully considered this issue, we thought we should clarify the rules concerning routing of AI services between TANs.
- 12.83 For AI services, we define trunk segments as circuits between aggregation nodes rather than circuits routed between the catchment areas served by those aggregation nodes. Thus circuits that cross a catchment area boundary do not necessarily contain a trunk element. This differs from the approach in TI markets (as discussed in Section 6 of the June BCMR Consultation). On this basis, we believed it to be inappropriate to bar EAD circuits or other point-to-point circuits such as WES & BES from crossing the TAN boundaries. These are indeed point-to-point circuits that do not use any trunk element.
- 12.84 Furthermore, restrictions on point-to-point Ethernet circuits crossing catchment areas are likely to limit CPs' freedom to aggregate circuits in locations other than the ASN exchanges that BT has chosen for its own backhaul network and may therefore limit their ability to utilise their own network assets for backhaul. Such an outcome would be contrary to our objective of encouraging competition in backhaul. Therefore in our view, the TAN crossing restrictions should not be reintroduced in their current form.
- 12.85 In our view, the technical transmission limits which limit circuit radial distances (currently to 25km for the standard products and 35km for the extended reach products) should be sufficient to ensure that those products are not used to provide trunk connections. However we considered that it may be unnecessarily restrictive to specify distances limits in the SMP conditions since the technical capabilities of the equipment may change from time to time. We therefore proposed to adopt a more flexible approach and to require BT to provide circuits within TAN areas and between adjacent TAN areas.
- 12.86 In the interest of transparency, we clarified the circuit routing rules in the proposed SMP conditions. In particular we:
- i) Defined access segments, backhaul segments, end-to-end segments and trunk segments;
 - ii) Specified that BT is required to provide access segments, backhaul segments, end-to-end segments but not trunk segments; and
 - iii) Specified that BT is required to provide access segments and backhaul segments that cross boundaries between adjacent TAN areas.

Migration and switching processes

- 12.87 Given the likely volume of migration from TI to AI services over the next few years, we considered whether migration arrangements could smooth this transition by minimising service interruptions and migration costs. However it appeared to us that the opportunities to do this may be fairly limited. Firstly, many businesses were likely to prefer the conventional approach, whereby a new service is installed alongside the

existing service as it provides the greatest assurance that the service interruption will be kept to a minimum. Secondly, whilst some aspects of migration arrangements might offer savings (for example through reuse of access network fibre) other aspects might be more costly than standard provision/cessation arrangements (for example simultaneous intervention at multiple points in a circuit to minimise service interruption).

- 12.88 We considered that Openreach should continue to explore opportunities for TI to AI migration processes in conjunction with CPs, and that it should provide further explanation about its reasons for rejecting the PPC/RBS to Ethernet upgrade path development that was part of the OICs.

Openreach's product development process

- 12.89 Several CPs told us that they are concerned about the operation of Openreach's product development process for AISBO services. They have the following specific concerns:
- CPs considered that Openreach has been slow to develop its product set to meet CPs' requirements and, in particular, had not delivered Ethernet aggregation and TI migration products as originally requested by industry as part of the OICs;
 - there is a widespread view amongst CPs that Openreach operates the product development process in a discriminatory manner, favouring the developments required by BT's downstream divisions over those required by other CPs;
 - the product development process, and particularly the initial evaluation of product development requests, is regarded as too slow. CPs considered that Openreach incorrectly classifies requests as commercial requests and consequently does not process them in accordance with the timetable and notification requirements specified in its regulatory obligations;
 - CPs considered that Openreach unreasonably refuses product development requests on the grounds that forecast product volumes would be insufficient or that developments would not be financially viable; and
 - CPs considered that Openreach unreasonably refuses product developments on grounds that BT Wholesale already provides unregulated services with similar functionality.
- 12.90 During the last few years, the industry, in cooperation with the OTA, had made significant improvements to the operational aspects of the product development process, particularly in relation to the coordination of requests by CPs to develop a shared vision of the developments that industry requires. For example, the SoR process had recently become more transparent: authorised CPs are now able to access the SoRs submitted by other CPs, decide to support them or simply follow Openreach's progress on each requirement. Under current arrangements, the industry discusses SoRs related to Ethernet products and systems in industry fora where CPs can engage with Openreach, articulate the rationale and details of their requirements and follow up on Openreach progress and conclusions. The OTA attends these meetings to facilitate discussion among industry stakeholders and help find solutions where issues arise.
- 12.91 The OTA has completed a review of Openreach's SoR process, covering all SoRs submitted in 2010 and 2011 across all products managed by Openreach (i.e.

including products outside the business connectivity markets such as WLR as well as Ethernet products). In relation to Ethernet-related SoRs, the OTA noted that there were similarities in the number of SoRs submitted by BT and CPs. However, there were differences in the time taken to process requests. In particular the OTA noted that SoRs from CPs that are still open, i.e. either being discussed or 'in development', had been in this state for an average of 479 days compared with an average of 365 days for those from BT's downstream businesses. To some extent, the differences appear to relate to the subject matter of the requests; however, the OTA has recommended that Openreach make some changes to improve the SoR process.

- 12.92 Whilst we acknowledged that there were concerns about the operation of the product development process for AISBO services, the concerns appeared to be mostly operational in nature, relating to how individual requests are processed. We therefore considered that generally these concerns could not easily be addressed by changes to the SMP conditions. In our view, the new network access obligations together with the obligation not to discriminate unduly (which we proposed to change to require EOI) would provide a clear framework under which BT must operate.
- 12.93 We therefore considered these concerns were best addressed at an operational level in the industry fora and in cooperation with the OTA. In cases where this proved unsuccessful, concerns could be escalated to Ofcom either informally or formally through the disputes and complaints processes.
- 12.94 However, we considered that it would be useful to clarify that we did not regard it as appropriate for Openreach to process some product development requests in accordance with its commercial process which has a more flexible timetable than that specified in the new network access SMP conditions. This condition, both in its existing and proposed forms, relates generally to requests for new product developments in the low-bandwidth AISBO markets and we would therefore expect that all requests relating to services within these markets (such as an Ethernet access or backhaul service or an associated interconnection/handover service at bandwidths up to and including 1Gbit/s) to be processed in accordance with this obligation, even where there may be some overlap with unregulated services provided by other parts of BT. We would therefore expect Openreach to process requests in accordance with the timetable specified in the condition. In particular, if there is no need to carry out a feasibility study, BT must respond within 15 working days. If a feasibility study is required BT must provide a response within 60 working days or exceptionally 85 working days. BT may only extend the timescale beyond 85 working days with agreement of the requestor or Ofcom.¹¹³⁰

Openreach Project Services

- 12.95 Project Services is a project coordination and management service provided by Openreach. It can be used to coordinate the provision of business connectivity services and also other Openreach services including projects containing a mix of services.
- 12.96 As Project Services is available to BT and CPs on an EOI basis, it seemed unlikely that the current arrangements were discriminatory. We noted that in 2011, in response to a request from CPs, the Equivalence of Access Office (EAO) investigated Project Services, concluding that BT had complied with its EOI obligations in the Undertakings in respect of Project Services.

¹¹³⁰ The condition provides for an extended timeline in cases where the need for a feasibility study is identified later in the process.

- 12.97 Although some aspects of Project Services are generic project management and coordination activities, it is unlikely that CPs could fully replicate the service as they would not have the internal knowledge of Openreach processes or have access to Openreach systems and personnel which Project Services is able to draw on. We therefore considered that when purchased in conjunction with regulated business connectivity services, Project Services should be regarded as a provisioning option for the service being purchased rather than as a downstream activity. Consequently when Project Services are provided in such circumstances they would be subject to the SMP conditions that we proposed for this market, including the EOI requirement that we proposed as part of the obligation for BT not to discriminate unduly.

Excess construction charges

- 12.98 UKCTA, CWW and Verizon raised concerns in the CFI about Excess Construction Charges (ECCs) which are levied by BT whenever customer-specific network construction work is required in association with an order. The issues fall into four categories:
- i) level of ECCs – CPs are concerned that ECCs may be overpriced as ECCs are higher than commercial construction rates;
 - ii) accounting treatment – CPs are concerned there may be an element of double counting if BT capitalises the assets which have been charged to CPs in ECCs;
 - iii) efficient design – CPs argue that BT's current practice of serving business sites from remote fibre flexibility points is inefficient and BT should install internal fibre flexibility points in business sites as a matter of course; and
 - iv) unequal treatment – One CP was concerned that BT may not treat internal orders in the same manner as external orders.

- 12.99 The first two points were addressed in our July LLCC Consultation.

Efficient design

- 12.100 BT levies ECCs for access network extensions that are specific to an individual customer. In the case of fibre based services such as Ethernet services this generally equates to network extensions between the serving fibre flexibility point (analogous to a Distribution Point in BT's copper access network) and the customer's premises. Fibre flexibility points may be external (located in underground structures in the access network) or internal (located within business premises). Extensions to the common parts of BT's network, such as the installation of a new fibre flexibility point, are not charged as ECCs even when undertaken to fulfil a customer order.
- 12.101 We sought information from BT about its network design policy. BT explained that it extends its fibre access network on a reactive basis (i.e. in response to customers' orders) and that its design policy is to adopt an efficient design that maximises the common parts of the network. Thus, a new flexibility point would be considered where there is likely to be future demand for fibre based services in a particular locality. In practice, when deciding whether a new fibre flexibility point is warranted, planners are expected to exercise their judgment about future demand for fibre based services.
- 12.102 Until recently, BT had not routinely installed internal fibre flexibility points in multi-floor and multi-tenant buildings. CPs argued that it would be more efficient for BT to install

fibre flexibility points as further orders are likely in such buildings. BT supplied us with analysis which appeared to demonstrate that, historically at least, it was uncommon for BT to receive orders from more than one customer at business sites.¹¹³¹

12.103 BT had recently changed its policy about internal fibre flexibility points. This now specifies that they should be installed at multi-floor and multi-tenanted buildings where a secure common area is available to site the flexibility point and permission can be obtained from the building's owner to use it.^{1132,1133}

12.104 We welcomed the changes that BT has made to its network design policy which we considered should go some way to addressing CPs' concerns.

Unequal treatment

12.105 We sought further information from BT about the incidence of ECCs and focused our analysis on Ethernet services as they account for the bulk of new orders. Information provided by BT for the period April to September 2011 shows that 30% of EAD orders incurred ECCs and that both the incidence and average value of ECCs incurred by BT are slightly higher than for CPs. This does not suggest that ECCs are being applied in a discriminatory manner.

Remedies proposed in the June BCMR Consultation

12.106 In light of all of the above, we then set out our assessment of the appropriate remedies for the AISBO markets.

Figure 12.7: Summary of the competition problems and proposed remedies

Competition problems	Proposed remedies for the wholesale low bandwidth AISBO market in the UK excluding the WECLA and the Hull area	Proposed remedies for the wholesale low bandwidth AISBO market in the WECLA
Refusal to supply	Requirement to provide network access on reasonable request	Requirement to provide network access on reasonable request
	Requirement to provide Ethernet services on reasonable request (disaggregated Ethernet access and backhaul)	Requirement to provide Ethernet services on reasonable request (disaggregated Ethernet access and backhaul)
<ul style="list-style-type: none"> Price discrimination; Non-price discrimination, e.g. different terms and conditions, delaying tactics (different delivery timescales for provision and fault repair); strategic design of products; 	Requirement to provide all network access on Equivalence of Input basis	Requirement to provide all network access on Equivalence of Input basis
	Obligation not to discriminate unduly	Obligation not to discriminate unduly
	Publication of reference offer	Publication of reference offer
	Requirement to notify changes to charges and T&Cs	Requirement to notify changes to charges and T&Cs

¹¹³¹ This analysis examined a sample of sites where a fibre bundle was installed in 2005. In the following 5 years a further fibre bundle was installed in only around 10% of these sites.

¹¹³² This policy applies to all multi-floor/multi-tenant buildings, including those already served with fibre without a flexibility point. New flexibility points are installed when an order is received.

¹¹³³ BT has provided us with a copy of its planning policy for reactive provision of access network fibre for point-to-point services which appears consistent with this approach.

Competition problems	Proposed remedies for the wholesale low bandwidth AISBO market in the UK excluding the WECLA and the Hull area	Proposed remedies for the wholesale low bandwidth AISBO market in the WECLA
exclusive dealing; quality discrimination; different SLAs and SLGs; <ul style="list-style-type: none"> • Predatory pricing; • Margin squeeze. 	Publication of quality of service as required by Ofcom Notification of technical information	Publication of quality of service as required by Ofcom Notification of technical information
<ul style="list-style-type: none"> • Price and non-price discrimination; • Excessive pricing; • Predatory pricing; • Margin squeeze. 	Accounting and accounting separation obligations	Accounting and accounting separation obligations
<ul style="list-style-type: none"> • Cross-subsidisation • Excessive pricing • Over investments • Excessive costs/inefficiencies 	Price control	Less strict form of price control
<ul style="list-style-type: none"> • Refusal to supply new network access; • Non-price discrimination, e.g. delaying tactics, strategic product design, etc. 	Requests for new network access	Requests for new network access

Summary of the remedies proposed in the June BCMR Consultation

12.107 Below we summarise the key elements of our proposed remedies.

Interconnection and accommodation services

12.108 We explained that in order to use the wholesale AISBO services that BT provides in these markets, CPs also require certain interconnection and accommodation services. We proposed that it was necessary to regulate the provision of such ancillary services, in the absence of which, we considered BT would have an incentive to refuse to supply or supply in a discriminatory manner such as by charging excessive prices. We therefore proposed that for each of the obligations we proposed (set out below) for these markets also applies to the provision of accommodation and interconnection services that are reasonably required by CPs in connection with the provision of the regulated services. The specific types of services we proposed BT should be required to provide were detailed in Section 13 of the June BCMR Consultation and our conclusions following consultation are discussed in Section 14 of this Statement.

Requirement to provide network access

12.109 As a result of its SMP, we considered that it is appropriate to impose a requirement on BT to meet reasonable requests for network access. We considered that, in the absence of such a requirement, BT would have an incentive not to provide such access and would be able to monopolise the provision of services in the downstream markets.

Specific remedies for the provision of Ethernet access, backhaul and end-to-end services

12.110 We proposed that, in order to further our policy of supporting investment in competing backhaul infrastructure, we would require BT to provide Ethernet access and Ethernet backhaul by introducing specific SMP conditions to this effect. The aim of these requirements being to ensure that BT continues to supply disaggregated Ethernet access and backhaul and guard against the withdrawal of such services which would be extremely disruptive to CPs and consumers. For similar reasons, we proposed that BT be required to provide short range (up to 25km) wholesale end-to-end services which provide for a more efficient solution for short range AI services than constructing services using terminating segments.

Requirement not to unduly discriminate and Equivalence of Input

12.111 We proposed requiring BT not to discriminate unduly in the provision of network access in response to our provisional finding of SMP in the AISBO markets. Such an obligation is intended as a complementary remedy to the network access obligations, principally to prevent BT from unduly discriminating in favour of its own downstream divisions and to ensure that competing providers are placed in an equivalent position. We further proposed that BT should be specifically required to provide Ethernet services on an EOI basis in order to prevent BT from engaging in forms of price or non-price discriminatory practices (which may or may not be undue) that could adversely affect competition. As Openreach continues to develop Ethernet products and services, we considered that EOI provides the right incentives on BT to continue to make such products and services available to both its downstream divisions and competitors.

12.112 We also proposed that the obligation not to discriminate unduly should also apply to pricing discounts. In relation to volume discounts we explained that these would very often constitute undue discrimination in practice since BT's downstream divisions would almost inevitably be the main beneficiary giving rise to a strong potential for ant-competitive effects. With regard to geographic and term discounts we considered that these may or may not be unduly discriminatory depending on the circumstances and that we would judge any alleged breach on a case by case basis.

Direction relating to service level guarantees

12.113 CPs are dependent on BT for the provision of wholesale services. Whilst the proposed EOI requirements provide some incentive on BT to deliver efficient and reliable services to CPs (as BT's own downstream divisions must also use them) we proposed that, based on conclusions reached in previous work which we considered remain valid, further measures are required to incentivise good performance.

12.114 We proposed that contractual arrangements need to include:

- a set of Service Level Agreements (SLAs) which reflects the commercial SLAs provided to end users of AI leased lines; and
- a set of Service Level Guarantees (SLGs) which sets out fair and reasonable compensations for delays in delivery and repair of such services.

12.115 We proposed to retain the direction issued under the network access obligation in the 2007/8 Review. The direction would require BT to:

- pay compensation for orders not delivered by the Contractual Delivery Date (CDD) or the Customer Requirements Date (whichever is later);
- pay compensation for faults not repaired within 5 hours;
- pay SLG compensation payments proactively;
- not apply any limits to compensation payments; and
- make compensation payments without prejudice to any right of CPs to claim for additional losses.

Price controls

12.116 We proposed to impose a charge control to address BT's ability and incentive to charge excessive prices.

12.117 As we proposed defining two distinct geographic markets outside the Hull area for wholesale low bandwidth AISBO services: the WECLA and the rest of the UK, in which we proposed that BT has SMP in both markets, we considered that some form of price control is appropriate in both geographic markets. However, we also recognised that, due to the existence of alternative access infrastructure in the WECLA, there are better prospects for the development of competition in this market. We therefore considered it was appropriate to take account of the different competitive conditions in determining what form of charge control to impose in each of these geographic markets.

12.118 We set out our proposals on the form, scope and level of the charge control in our July LLCC Consultation.

Transparency and notification obligations

12.119 We proposed that BT should remain subject to the following SMP obligations aimed at promoting transparency and ensuring non-discrimination.

12.120 An obligation to publish a reference offer, including terms and conditions of provisioning and repair. The published reference offer must set out (at a minimum) such matters as:

- a clear description of the services on offer including technical characteristics and operational process for service establishment, ordering and repair;
- the locations of points of network access and the technical standards for network access;
- conditions for access to ancillary and supplementary services associated with the network access including operational support systems and databases etc;
- contractual terms and conditions, including dispute resolution and contract negotiation/renegotiation arrangements;
- charges, terms and payment procedures;
- service level agreements and service level guarantees; and

- to the extent that BT uses the service in a different manner to CPs or uses similar services, BT is required to publish a reference offer in relation to those services.

12.121 An obligation to give 28 days' notice of price reductions and to give 90 days' notice of all other changes to prices, terms and conditions for existing AISBO services.

12.122 An obligation to give 28 days' notice of the introduction of prices, terms and conditions for new AISBO services.

12.123 A requirement to notify technical information with 90 days notice.

12.124 An obligation to publish quality of service information, as directed by Ofcom.

12.125 Obligations relating to requests for new network access including:

- a requirement for BT to publish reasonable guidelines specifying the required content and form of requests for new network access and how they will be handled;
- a requirement for BT to provide sufficient technical information to CPs to allow them to draft product specifications that are efficient and which satisfy the reasonable requirements; and
- timescales within which BT must acknowledge and process requests.

Revisions to AISBO remedies proposed in the November BCMR Consultation

12.126 Below we set out:

- the further assessment we carried out in the November BCMR Consultation¹¹³⁴ in which we consulted *inter alia* on revised proposals which are relevant to our consideration of remedies for the AISBO markets, in particular:
 - Service level guarantees; and
 - AISBO Trunk Aggregation Nodes and circuit routing rules.

Revised proposals in respect of service level guarantees

12.127 In Section 3 of the November BCMR Consultation, we explained that we had made a drafting error in the June BCMR Consultation in that we had unintentionally proposed a service level guarantee (SLG) Direction which omitted compensation caps, whereas we had intended to propose an SLG Direction which directed, amongst other things, that there should be caps of 60 working days for late provision compensation payments and of 200 hours for compensation payments for late repairs. We had not intended in the June BCMR Consultation to make any change to these compensation caps which we had originally imposed in our 2008 SLG

¹¹³⁴ 'Business Connectivity Market Review, Further consultation' published by Ofcom on 15 November 2012 and is at http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-reconsultation/summary/BCMR_Nov_2012.pdf

Statement, which we considered remained appropriate to address the competition problems we had identified in this market review.¹¹³⁵

12.128 Taking into account the correction described above, our proposed SLG Directions would therefore require BT to:

- pay compensation for orders not delivered by the Contractual Delivery Date (CDD) or the Customer Requirements Date (whichever is later), subject to specified compensation limits;
- pay compensation for faults not repaired within 5 hours, subject to specified compensation limits;
- pay SLG compensation payments proactively; and
- make compensation payments without prejudice to any right of CPs to claim for additional losses.

12.129 Specifically in relation to the proposal to apply compensation caps, we considered the reasoning as set out in the 2008 SLG Statement for the imposition of the original SLG Direction¹¹³⁶ remained valid and supported our revised proposal, in particular that:

- we continued to consider that the absence of caps could expose BT to unlimited financial risk; and
- in recognising there is a balance to be struck between, on the one hand, ensuring that appropriate compensation is paid in such a way to incentivise performance, and on the other, ensuring we are not introducing unreasonable burdens on BT, we considered that the proposed level for the compensation caps continued to achieve that balance.

Revised proposals in respect of AISBO Trunk Aggregation Nodes and circuit routing rules

12.130 In Section 5 of the November BCMR Consultation, in light of stakeholders' responses to the June BCMR Consultation, we proposed changes to the rules we proposed in the June BCMR Consultation, specifically:

- changes to the proposed definition of TAN, as used for the purposes of the proposed SMP services conditions. In particular, we proposed changes to the list of BT operational buildings which we assigned to each of the TANs;
- changes to our proposals in relation to circuit routing restrictions. To give effect to this proposal, we proposed to remove certain wording from proposed SMP services condition 2 entitled "Specific forms of network access"; and
- changes to the proposed definition of Backhaul Segment, as used for the purposes of the proposed SMP services conditions.

¹¹³⁵ 'Service level guarantees; incentivising performance, Statement and Directions' published by Ofcom on 20 March 2008 and is at <http://stakeholders.ofcom.org.uk/binaries/consultations/slq/statement/statement.pdf>

¹¹³⁶ Annex 3 of the above 2008 SLG Statement. This Direction was imposed under SMP services condition HH1 which itself was imposed as a result of the 2004 BCMR.

Changes to the assignment of BT's operational buildings to AISBO TANs

12.131 In light of BT's response to the June BCMR Consultation, we acknowledged that we had unintentionally grouped all of BT's 106 OHPs into 56 TANs rather than a marginally smaller sub-set of BT's OHPs based on the reasoning and conclusions of the 2007/8 Review, which we considered remained valid for the purposes of this market review.

12.132 To correct this, we proposed to change the definition of TAN by changing Column 2 (BT operational buildings) of Table 2 as shown below.

"**Trunk Aggregation Node**" means a node listed in Column 1 of Table 2 below consisting of any one or more of the Dominant Provider's operational buildings as listed in Column 2 of Table 2 below;

Table 2: Trunk Aggregation Nodes

Column 1: Trunk Aggregation Nodes	Column 2: BT operational buildings
Aberdeen	Aberdeen Central; Inverness Macdhu
Basingstoke	Basingstoke/Bounty
Belfast	Belfast/City; Belfast/Seymour; Portadown
Birmingham	Birmingham Central; Birmingham Midland Birmingham Perryfields (Bromsgrove); Erdington
Bishops Stortford	Bishops Stortford
Brighton	Brighton Hove
Bristol	Bedminster, Bristol Redcliffe; Yeovil
Cambridge	Cambridge Trunks
Cardiff/Newport	Aberystwyth ; Bridgwater ; Cardiff; Newport (Gwent); Swansea
Carlisle	Carlisle
Chelmsford	Chelmsford Town; Southend-On-Sea
Coventry	Coventry Greyfriar; Leamington Spa
Crawley	Crawley
Croydon	Croydon
Darlington	Darlington
Derby	Derby
Doncaster	Doncaster; Lincoln
Edinburgh	Edinburgh Donaldson
Exeter	Exeter Castle; Truro ; Plymouth
Falkirk	Dundee Tay ; Falkirk
Glasgow/Clyde Valley	Glasgow Central; Glasgow Douglas
Gloucester	Gloucester
Guildford	Guildford/Martyr
Ipswich	Colchester Town; Ipswich Town; Norwich City
Irvine	Irvine
Kendal	Kendal
Kingston	Kingston
Leeds	Bradford (2); Leeds (3); Pontefract
Leicester	Leicester Montfort
Liverpool	Liverpool Central; Wrexham Grosvenor ; Bangor (Wales)

London Central	BT Tower (West Block); Covent Garden, Faraday Te (Moorgate), South Kensington; Southbank
London Docklands	Bermondsey; Stepney Green
London East	Hornchurch, Kidbrooke, Upton Park; Woodford
London North	Potters Bar
London West	Colindale; Ealing; Southall
Luton	Luton Ate/Tower Block
Maidstone	Ashford ; Maidstone; Tunbridge Wells
Manchester	Bolton; Dial House (Manchester); Oldham; Pendleton
Milton Keynes	Bedford Town ; Milton Keynes
Newcastle	Newcastle Central; South Shields
Northampton	Northampton
Nottingham	Nottingham Longbow
Oxford	Oxford City
Peterborough	Peterborough Wentw
Portsmouth/Southampton	Bournemouth ; Cosham; Southampton
Preston	Preston (Lancs)
Reading	Bracknell
Salisbury	Salisbury
Sheffield	Chesterfield; Sheffield Cutler
Slough	High Wycombe; Slough
Stoke	Stoke Trinity/Pott
Swindon	Swindon
Warrington	Ashton In Makerfield; Northwich
Watford	Hemel Hempstead ; Watford
Wolverhampton	Walsall Central, Wolverhampton Central; Shrewsbury
York	Malton

Changes to our proposals in relation to circuit routing restrictions

- 12.133 In the June BCMR Consultation, we sought to clarify the rules concerning routing between TANs in the proposed AISBO markets in response to concerns expressed by stakeholders about restrictions which BT had initially imposed (but subsequently suspended) for the provision of certain EAD circuits that crossed the boundaries between TAN areas.
- 12.134 Predicated on our understanding that BT had defined catchment areas for each TAN, we set out our reasoning and proposals which, amongst other things, specified that BT was required to provide access and backhaul segments that cross boundaries between adjacent TANs. We proposed to give effect to this in proposed SMP services condition 2.1.
- 12.135 In its response to our June BCMR Consultation, BT pointed out that we were incorrect to suggest that BT or anyone else had defined the catchment area of the TANs in terms of geographical boundaries, although BT noted that the industry had discussed such a definition but had not reached any agreement.
- 12.136 In our November BCMR Consultation, we explained that we accepted that the industry had not reached agreement on the definition of TAN catchment areas. It was clear therefore that the circuit routing proposals in the June BCMR Consultation would not provide the clarification we intended because they were predicated on the existence of such an agreed definition.

12.137 Having reviewed the matter further, we considered that a simpler set of rules should suffice. In essence, our revised proposals would codify the current arrangements whereby Openreach would:

- provide wholesale end-to-end services, such as EAD, between any two end-user premises up to 25km;
- provide terminating segments, such as EAD, between two points subject only to the distance limits specified for the products;
- provide EBD backhaul services between ASNs and one of the OHPs in the TANs to which they are connected; and
- provide customer sited handover of EBD services by means of a BTL circuit; but
- not have to provide circuits between OHPs in different TANs.

12.138 As set out in the June BCMR Consultation¹¹³⁷, we considered that the maximum radial range of BT's wholesale AISBO access products, currently 25km for standard products and 35km for extended reach products, would limit sufficiently the extent to which those products are used to provide trunk connections.

12.139 We therefore changed our proposed circuit routing rules in proposed SMP services condition 2.1(a) such that terminating segments and wholesale end-to-end segments are not restricted to circumstances in which the ends of each service lie either in the same or adjacent TANs. The circuits which we define as trunk segments, and which are therefore excluded from the wholesale AISBO markets, are services connecting any two of BT's operational buildings which are assigned to different TANs.

Minor amendment to the definition of Backhaul Segment

12.140 In the November BCMR Consultation we proposed a minor amendment to the definition of Backhaul Segment to clarify that backhaul segments include circuits between two CP network nodes as well as those between BT network nodes and between BT network nodes and CP network nodes. This was omitted from the proposed definition of Backhaul Segment as set out in the June BCMR Consultation.

Responses to the June and November BCMR Consultations and Ofcom's considerations

Consultation responses in relation to interconnection and accommodation services

High density handover

12.141 Three respondents commented about the high density handover development requested by CPs. The main points made were:

- BT agreed that there may be potential benefits to CPs from the introduction of new forms of handover but argued that the potential feasibility of any solutions needed to be considered against the need for commercial viability.

¹¹³⁷ See paragraphs 11.92 to 11.94.

- Level 3 noted that BT has not yet delivered aggregated handover products despite repeated requests from CPs dating back several years. It argued that absent a specific obligation a satisfactory outcome would not be achieved.
- Exponential-e urged Ofcom to focus on the delivery of a 'high density handover' solution in view of the shortage of exchange space.
- Exponential-e also argued that BT had unreasonably rejected the 'Direct Connect' solution preferred by CPs as an alternative to the aggregated handover options being considered by BT.¹¹³⁸ It noted that Openreach had rejected earlier aggregated handover developments on cost grounds. It argued that Direct Connect would be cheaper than aggregated handover, consume less exchange space and give CPs greater control of the Operations, Maintenance and Administration functionality of EAD circuits.

Ofcom's considerations

12.142 We consider that aggregated handover could make Ethernet interconnection more efficient and reduce the pressure on accommodation space in BT exchanges. We therefore remain of the view that Openreach should work with CPs to develop detailed proposals as soon as reasonably possible.

12.143 We acknowledge that there is some frustration amongst CPs that Openreach has not delivered an aggregated handover product or an alternative such as 'Direct Connect'. Ultimately if CPs are unable to reach agreement with Openreach about these developments and consider that BT has not complied with its obligation to provide network access upon reasonable request they have recourse to the dispute process.

Allocation of space and power

12.144 Telefónica, CWW and Exponential-e specifically welcomed our proposal to impose SMP conditions requiring BT to allocate space and power on the basis of EOI.

12.145 Telefónica sought clarification that our proposed EOI obligations in respect of space and power allocation would apply to both fixed and mobile deployments.

Ofcom's considerations

12.146 We consider that fixed and mobile backhaul falls within the scope of the markets which would be subject to Condition 4.2(a). Consequently the EOI obligations for space and power allocation would apply in connection with the provision of network access for fixed and mobile backhaul.

Consultation responses in relation to specific remedies for the provision of Ethernet access, backhaul and end-to-end services

Depth of interconnection

12.147 In its response to the June BCMR Consultation, CWW argued that CPs find it difficult to compete effectively with BT using the disaggregated wholesale products that BT currently provides. CWW noted that since the last review there has been a great increase in the use of the EAD LA product because it offers the most cost effective

¹¹³⁸ With this form of handover, Openreach would provide the terminal equipment at customers' premises and connect EAD circuits directly to CPs' equipment in BT exchanges without any intermediate equipment.

method of provision where volumes justify the deployment of aggregation equipment at a BT local exchange. BT's scale and scope enable it to deploy aggregation equipment at more local exchanges than other CPs. This disparity in the 'depth of interconnection' makes it difficult for CPs to compete effectively with BT as they have to use less cost effective methods of provision than BT at exchanges where they cannot justify a PoP.

- 12.148 C&W subsequently made a further submission to Ofcom in which it provided a worked example illustrating how BT would be able to achieve a lower unit cost of provision than CWW. [3<]
- 12.149 CWW argued that the number of points of interconnection at which disaggregated wholesale products are available should be limited to a smaller set of exchanges so that CPs are able to achieve comparable economies of scale and scope as BT. CWW proposed the 1090 exchanges nominated by BT for NGA handover as suitable candidates on ground that these represent the economic boundary for efficient handover for CPs. CWW foresaw that without such a constraint we will need to intervene to regulate BT Wholesale geographically in order to maintain competition in downstream retail markets.
- 12.150 Under this approach smaller exchanges would be parented to larger exchanges from which services would be available at EAD LA prices. CWW noted that this would result in a proportion of EAD LA circuits being longer than at present as they would serve sites outside the serving exchange area and as a result, the average price may need to rise marginally.
- 12.151 As an alternative, CWW proposed that the EAD LA product be enhanced to include a per-meter additional charge payable between the serving exchange and handover exchange.
- 12.152 CWW asked whether, in future, the OTA might have a mediation role in order to secure a common agreement on the location and number of handover points for a given service.

Ofcom's considerations

- 12.153 In imposing remedies on BT in the AISBO markets, our approach is designed to promote effective competition in downstream markets by specifying forms of access to promote economically efficient infrastructure-based competition. Specifically, our aim in requiring BT to provide disaggregated access and backhaul is to provide incentives for CPs to invest in alternative backhaul infrastructure to BT's.¹¹³⁹
- 12.154 CWW proposed that we limit the number of exchanges at which BT should make disaggregated products available, and that 1,090 such exchanges represent, in effect, the economic boundary for effective and sustainable investment in alternative infrastructure to BT's. However, we do not consider that it would be appropriate for us determine such a boundary. Since the AISBO markets are growing it seems likely that CPs will have opportunities to expand the coverage of their AI networks in future and also to achieve greater scale economies as volumes increase, and if we were to intervene in the manner that CWW has proposed we would risk curtailing investment at a lower level than would be effective and sustainable.

¹¹³⁹ This approach is consistent with the BEREC Common Position. See, in this respect, **BP3** and **BP3a** and footnote 5 to **BP3a**.

12.155 We consider that the appropriate economic boundary should be determined by CPs' economic considerations rather than by regulatory intervention. We have therefore decided not to intervene in the manner that CWW has proposed.

Mobile backhaul remedies

12.156 BT agreed with our view that it is not necessary to introduce a specific obligation requiring BT to provide mobile backhaul. In its view the existing products offered by Openreach together with the new SyncE product to be launched imminently, adequately meet the requirements of MNOs. BT also considered that it is not necessary to require BT to provide CPs with access to reference clock sources and confirmed that the SyncE variant of EAD will allow CPs to transport their own timing signals.

12.157 EE/MBNL disagreed with our assessment. In their view the competition problems associated with mobile backhaul warrant the definition of a separate market for mobile backhaul and/or imposition of specific mobile backhaul remedies.

12.158 Whilst accepting that the MEAS product which MNOs purchase from BT for mobile backhaul uses the generic wholesale Ethernet services, EE/MBNL argued that the nature of this bundled product and the competitive conditions in which it is purchased are very different from the rest of the AISBO market from which inputs to the MEAS product are sourced. In particular, the requirement for connectivity between a large number of geographically dispersed base station sites and mobile core networks means that MNOs effectively have no choice but to fulfil significant proportions of their backhaul requirements from BT.

12.159 [X]

12.160 [X]

12.161 Telefónica generally welcomed our proposals in relation to the price control on SyncE. It expressed concern, however, that the introduction by BT of a SyncE variant of EAD represented a risk to its business, because as it intends to deploy Ethernet in large volumes in support of the rollout of LTE networks, it could face remedial upgrade costs, paying BT once to provide or upgrade to 1Gbit/s EADs and then again to upgrade to SyncE. Telefónica asked us to consider protective measures and some regulatory encouragement to BT to make its SyncE product available sooner.

Ofcom's considerations

Need for a specific mobile backhaul remedies

12.162 We have considered EE/MBNL's comments about the nature of mobile backhaul demand and competitive conditions in the supply of mobile backhaul in Section 4. We have concluded that Ethernet mobile backhaul should be included in the wholesale AISBO markets. Our decision, set out in this Section, to require BT to meet reasonable requests for network access, provide Ethernet access and backhaul and to provide network access on an EOI basis is sufficient to address the competition concerns we have identified in the wholesale AISBO markets. The scope of the network access obligation related to AISBO markets therefore includes an obligation to meet reasonable requests for forms of network access such as generic carrier Ethernet services or variants that support synchronisation capabilities which are inputs to Ethernet based mobile backhaul products. Given this we do not see a need for additional mobile backhaul remedies.

12.163 We discuss our conclusions on the application of the price control remedy to SyncE variants of BT's wholesale Ethernet products in Section 20.

SyncE products

12.164 In the June BCMR Consultation we reported that Openreach was preparing to launch a SyncE variant of EAD in support of CP's requirements. In January 2013 Openreach announced that it has decided to delay launch of its SyncE product citing uncertainty about near-term demand.

12.165 Openreach has told us that it has delayed the launch because customer feedback indicates that whilst demand is expected in future, in the short term customers plan to use alternative solutions for mobile backhaul synchronisation.¹¹⁴⁰ Also discussions with customers indicate that there may not be demand at current cost levels. Openreach has told us that it has completed most of the development work for its SyncE product and remains committed to providing it. It therefore plans to continue its dialogue with interested CPs in order to determine the right approach to deploy this product.

12.166 However, it is not clear to us that CPs share Openreach's understanding of the current position and, in particular, some CPs believe there is an immediate requirement for a SyncE variant of EAD in order to provide mobile backhaul solutions to the growing backhaul capacity requirements of MNOs.

12.167 We would therefore encourage interested CPs to make their requirements known to Openreach and, to the extent it is necessary and appropriate, we are prepared to facilitate progress on this matter.

Consultation responses in relation to a requirement not to unduly discriminate and Equivalence of Input

Requirement to provide Ethernet services on an Equivalence of Input basis

12.168 CWW and TalkTalk welcomed our proposal to impose a requirement on BT not to discriminate unduly in the provision of network access and, specifically, to require that Ethernet services are supplied to competitors on an EOI basis. Other respondents did not comment specifically on our proposals.

12.169 BT did not disagree with the imposition of an obligation not to unduly discriminate, but strongly disagreed with our proposal to impose an EOI SMP remedy in the AISBO markets.

12.170 In summary, BT's position was that:

- a) EOI is the most onerous form of non-discrimination obligation. If it is to be imposed, we must be able to identify clearly the market failures which this remedy is intended to address, and articulate why no lesser form of non-discrimination obligation will suffice.
- b) We had listed the specific concerns that we considered might need to be addressed in relation to non-price discrimination and in relation to pricing (paragraph 11.65 of the June BCMR Consultation). In BT's view, none of these

¹¹⁴⁰ In our June BCMR Consultation we noted that two technologies are preferred by MNOs for synchronisation over carrier Ethernet services – IEEE 1588 and SyncE protocols.

(by our own assessment) support the conclusion that all AISBO products need to be made subject to EOI.

- c) Our assessment of the reasons why it is appropriate to impose an EOI obligation (as set out in paragraph 11.143 and paragraph 11.144 of the June BCMR Consultation) do not, in BT's view, provide an adequate justification for the imposition of such an onerous obligation and is flawed in a number of respects. In particular:
 - o We have focused solely on the potential for harm on the market downstream of the wholesale AISBO market.
 - o In looking at the potential for harm downstream, BT says that we make only the most sweeping of generalisations, which hold true in any upstream/downstream market, that competition downstream may be affected by discriminatory behaviour. BT argues that these generalised assertions are insufficient to justify imposition of EOI over and above an undue discrimination obligation.
 - o BT believes that our conclusion that there is a need for EOI is based on an incorrect assessment of the distinction between what would be required of BT (as a vertically integrated operator) under a no undue discrimination obligation as compared with what would be required under an EOI obligation.
 - o BT further suggests that we have had no, or insufficient, regard as to how the imposition of such an onerous obligation would impact on BT in relation to its position as one of a number of competitors in the upstream market which is, at the very least, prospectively competitive and where BT is not an enduring monopolist (bottleneck) supplier, and has undertaken no balancing exercise of potential benefits on the downstream market versus potential disbenefits on the upstream market (e.g. the potential for such a remedy to increase barriers to entry or expansion for other competitors in the upstream market). When weighed correctly in the regulatory balance, the risks of regulatory disbenefit upstream if an SMP EOI obligation is applied outweigh the risks that will arise downstream if BT is subject only to the normal undue discrimination obligation (as that applies to a vertically integrated operator).
- d) BT argues that when these factors are correctly assessed, it leads to the conclusion that EOI is a disproportionate remedy and that the normal undue discrimination remedy (as that applies to a vertically integrated operator) will suffice. Accordingly, our proposed Condition 4 does not pass the relevant Communications Act legal tests in relation to wholesale AISBO services.

Ofcom's considerations

Our aims and conclusions relevant to the principle of proportionality

- 12.171 We recognise that an EOI obligation should be imposed only when the cost is proportionate. We have therefore carefully re-examined whether it would be proportionate to impose on BT an EOI obligation in the wholesale AISBO market in the WECLA, the wholesale AISBO market outside the WECLA and the wholesale MISBO market outside the WECLA (together, the Relevant Modern Markets).
- 12.172 Our conclusion is that, in balancing the aim pursued in this regard, and set out below, with associated costs and benefits, the imposition of an EOI obligation for the

provision of Ethernet and WDM-based services in these markets is the necessary form of non-discrimination obligation required to effectively address the relevant competition problems we have identified, in particular BT's ability and incentive to engage in discriminatory pricing and non-pricing practices in favour of its downstream divisions in the provision of services in the Relevant Modern Markets.

12.173 In reaching this conclusion, we have had regard to a number of relevant considerations looking at the characteristics specific to the provision of Ethernet and WDM-based services in the Relevant Modern Markets. Our considerations include not only the above-mentioned particular competition problems, but also the need to secure our duties to further the interests of citizens and consumers in these markets by promoting competition in respect of choice, price, quality of service and value for money. We are required, in particular, to secure the availability throughout the UK of a wide range of electronic communications services. This duty also means that the desirability of encouraging the availability and use of high speed data transfer services throughout the UK is a particularly important objective to bear in mind in relation to Ethernet and WDM-based services and the effectiveness of this non-discrimination remedy.

The importance of creating a level playing field on the related downstream retail markets to the Relevant Modern Markets

12.174 BT argues that we must be able to identify clearly the market failures which EOI is intended to address, and articulate why no lesser form of non-discrimination obligation will suffice.

12.175 First, for the reasons set out in Section 7, the thorough and overall analysis we have undertaken of the economic characteristics of each of these markets, based on existing market conditions, has led us to conclude that BT has SMP in the Relevant Modern Markets.

12.176 Secondly, the "market failures" to which BT refers, and which EOI is intended to address, arise as a result of the SMP in these wholesale markets and manifest themselves in the related downstream retail markets, as we explain below.

12.177 Leased lines are essential components for many downstream applications used by business customers. They also play an important role for CPs in delivering their own services to consumers, particularly as the majority of CPs remain reliant on BT's network in doing so. Specifically, Ethernet access and backhaul services are important inputs to major downstream retail markets which are important to the UK economy – including the market for fixed broadband services, the retail AI and MI leased lines markets and the mobile market.

12.178 By their nature, leased lines provide dedicated symmetric transmission capacity between fixed locations. The impact of any poor performance in developing, delivering, maintaining or repairing relevant products is therefore likely to be much larger than the price of the leased line itself, because of the detriments such failures are likely to have on downstream applications. Therefore, a buyer of a leased line is likely to choose a supplier that it is reliable in delivering them, for example, on time (including for any repairs required), consistently at the quality needed, using reliable systems and scalable processes.

12.179 This issue is particularly significant for Ethernet and WDM-based services, because they are now preferred in most new installations for higher bandwidths and demands for such bandwidths are expected to grow in the future. The rapid growth in the

wholesale AISBO and MISBO markets is a significant development since the 2007/8 Review.

12.180 Despite the rapid growth in the Relevant Modern Markets, our market analysis, in particular our SMP assessment, has shown that:

- in the wholesale AISBO market outside the WECLA, BT's market share has remained consistently large since 2007;¹¹⁴¹
- in the wholesale MISBO market outside the WECLA BT's market share is above 50%,¹¹⁴² and
- in the wholesale AISBO market in the WECLA, we have found that, despite significant volume growth, and whilst recognising the prospects for competition over the course of the three year review period are better than outside the WECLA, competitive conditions do not appear to have changed materially since the 2007/8 Review, with BT's market share remaining constant.¹¹⁴³ We have found that the growth observed in certain OCPs' market share in the WECLA has come not at the expense of BT's market share but at the expense of other CPs'.

12.181 Our market analysis has also revealed that the Relevant Modern Markets are characterised by significant product development, and we do not consider this will change over the course of the forward-look review period. In this respect, we remain of the view expressed in the June BCMR Consultation that, in the absence of appropriate *ex ante* regulation, BT has the ability and incentive to favour meeting the requirements of its downstream divisions over those of other CPs in developing wholesale products. As a result, the products it provides to its downstream divisions may therefore be superior to those it provides to other CPs in respect of quality, performance and features, and may well involve superior processes and systems for their development, delivery, maintenance and repair. Equally, we remain of the view that BT has the ability and incentive to supply products with different levels of quality – e.g. different SLAs and SLGs, providing fault repair of products on different timescales, creating new variants to fulfil the requirements of its downstream division, prioritising the needs of its downstream divisions in developing improvements and enhancements, and taking longer to address, or avoiding addressing, the requirements of its competitors.

12.182 We consider such behaviour by BT could act as an impediment to improved products being made available equally promptly to both BT and OCPs and undermine a level playing field in the related downstream retail markets. The need for an effective non-discrimination remedy (as part of a wider package of remedies) to address the impact of BT's SMP in the Relevant Modern Markets downstream is crucial to maintaining a level playing field between BT's downstream businesses and CPs over the course of the forward-look period of our review.

12.183 In this respect, Openreach Ethernet and WDM-based services are still subject to continuing product development and quality enhancements, and we consider EOI consumption provides the right incentives on BT to implement the changes and make better product variants available equally and simultaneously to both its downstream divisions and to its competitors.

¹¹⁴¹ Our base case market share estimate for BT is 73%.

¹¹⁴² Our base case market share estimate for BT is 57%.

¹¹⁴³ Our base case market share estimate for BT is 49%, compared to 47% in the 2007/8 Review.

The effectiveness of the remedy to achieve the aim of a level playing field

12.184 As part of our proportionality assessment, our first consideration is to determine what form the non-discrimination remedy should take to be effective in achieving our above-mentioned aim.

12.185 BT argues that the normal undue discrimination remedy will suffice. We disagree.

12.186 In our view, the normal undue discrimination remedy would, by its very nature, allow for certain discriminatory conduct – compliance with that obligation needs to establish in particular whether the discrimination in question is undue. However, whether the conduct in question is such as to amount to a breach of the undue discrimination obligation can only be determined on a case-by-case basis.¹¹⁴⁴

12.187 Conversely, an EOI obligation removes any degree of discretion accorded to the nature of the conduct. The distinction between these two forms of non-discrimination is that, in the case of the former, both the ability and the incentive on the part of the SMP operator may still exist to engage in the relevant conduct – however, in the case of the latter, the ability is removed *ex ante* altogether.

12.188 For the remedy to be effective – with regard to both price and non-price aspects – in achieving our aim of a level playing field on the related downstream retail markets to the Relevant Modern Markets, we consider that an EOI obligation is required, in particular to:

- prevent BT from discriminating against OCPs in favour of its downstream divisions; and
- actively promote effective competition in the related downstream retail markets, by ensuring a level playing field in them on which OCPs can compete with BT.

12.189 In contrast, we consider that the normal undue discrimination remedy would not remove the ability and incentive on BT to discriminate against OCPs in favour of its downstream divisions, and so could undermine a level playing field in the related downstream retail markets on which OCPs can compete with BT. As such, we consider that there is no choice of remedy as effective as EOI because the normal undue discrimination remedy would not achieve this aim.

12.190 Consequently, contrary to BT's arguments, we consider our conclusion in this respect that there is a need for EOI, is based on an correct assessment of the distinction between what would be required of BT (as a vertically integrated operator) under a no undue discrimination obligation as compared with what would be required under an EOI obligation.

Our assessment of the effects on BT and in the Relevant Modern Markets in imposing an EOI obligation

12.191 BT argues we have had no, or insufficient, regard as to how the imposition of such an onerous obligation would impact on BT in relation to its position as one of a number of competitors in the Relevant Modern Markets which is, in its view, at the very least,

¹¹⁴⁴ This includes instances where the conduct is presumed to be unduly discriminatory – e.g. volume discounts – since this is only a presumption. In this respect, see our interpretation of the application of the no-undue discrimination obligation in the relevant wholesale markets to volume discounts.

prospectively competitive and where, again in BT's view, it is not an enduring monopolist (bottleneck) supplier.

12.192 We disagree. As summarised above, and as set out in more detail in Section 7, our SMP assessment has found that BT's position as BT puts it, as one of a number of competitors in the Relevant Modern Markets, is one of SMP.

12.193 In the wholesale AISBO market in the WECLA, in terms of our overall assessment of the prospects for competition in this market, we still expect demand to grow quickly during the review period, with growth likely to be focused on higher priced 100Mbit/s-1Gbit/s services. However, we do not believe that OCPs will be able to compete effectively across the WECLA over the course of the three year review period due to BT's incumbency advantages (which makes it difficult for OCPs to take business away from BT) and the fact that BT is more likely to have a connection (or be closer) to new customer-sites. In this respect, BT's position as, in its words, a bottleneck supplier has endured since the 2007/8 Review and, as a result, we are imposing a package of SMP remedies that we consider is appropriate to address the competition problems we have identified in this market such that, over medium to long-term, this market may achieve effective competition status. The imposition of EOI is part of this package of SMP remedies, and which, for the reasons set out here, we have concluded it is proportionate to impose.

12.194 Equally though, we have, contrary to BT's arguments, had regard to the prospectively competitive nature of the wholesale AISBO market in the WECLA in imposing our charge control remedy. In comparison to the charge control remedy we are imposing in the wholesale AISBO market outside the WECLA, this charge control remedy affords BT greater pricing flexibility.

12.195 In relation to BT's argument that we have not undertaken a balancing exercise of potential benefits on the downstream market versus potential disbenefits on the upstream market – e.g. the potential for such a remedy to increase barriers to entry or expansion for other competitors in the upstream market – we do not consider that such potential disbenefits to which BT refers, arise:

- we consider potential entrants or existing CPs in the Relevant Modern Markets will continue to invest in their infrastructure where they consider it economically efficient to do so, as evidenced by the extent of alternative infrastructure our market analysis has revealed in the WECLA. This has led us to conclude that, whilst BT will maintain a position of SMP in the wholesale AISBO market in the WECLA over the course of the three year review period, this market is prospectively competitive. In this respect, as noted in the June BCMR Consultation, due to the current requirements in the Undertakings, it is BT's current practice to supply services in the Relevant Modern Markets on an EOI basis.¹¹⁴⁵ We do not consider EOI has adversely impacted upon OCPs' ability and incentive to expand through infrastructure-build, again, as evidenced by the extent of alternative infrastructure our market analysis has revealed in the WECLA, and nor do we consider the impact will change over the course of the three year review period;
- equally, where it is not economically efficient to build alternative infrastructure, CPs can continue to rely on the general, and specific, network access requirement we are imposing on BT in order to compete;

¹¹⁴⁵ See paragraphs 11.143 and 12.67. At paragraph 12.67 we noted that "BT's services downstream of [the wholesale MISBO market] currently consume products provided by its Openreach division on the basis of EOI".

- to the extent that the wholesale product BT is offering on an EOI basis may be the one 'favoured' by wholesale customers over products offered by its wholesale competitors, then we would regard that as a reflection of the characteristics of BT's product that better meet the requirements of those wholesale customers. In this respect it would be incumbent on BT's competitors to produce a more competitive solution, for example by offering more attractive prices. In the WECLA, we have recognised the greater potential for OCPs to do so over the course of the three year review period and, consequently, we have imposed on BT a less stringent charge control remedy. We consider this should result in more competitive prices at the wholesale level and ultimately benefit end-users in the form of choice and competition in the related downstream retail markets. Conversely, outside the WECLA, our market analysis, in particular our SMP assessment, has revealed this potential to be less. As a result, the emphasis is more on ensuring that the wholesale service OCPs rely on in these wholesale markets from BT is equivalent to the service provided to BT's downstream divisions such that again, end-users enjoy the same benefit in the form of choice and competition in the related downstream retail markets.

12.196 Furthermore, contrary to BT's suggestion, in reaching our proposal in the June BCMR Consultation that it was appropriate to impose EOI, we assessed whether the EOI obligation is necessary, in the sense that it is no more onerous than is required to achieve our aims, and we did not consider that it would have adverse effects which might be disproportionate to these aims.

12.197 We stated, in particular, that:

"...due to the current requirements in the Undertakings, it is BT's current practice to supply Ethernet access and backhaul circuits on an EOI basis by means of its access division Openreach. We therefore consider that imposing a very similar requirement in the market review would not be onerous as it would not require BT to re-engineer existing systems and processes."¹¹⁴⁶

12.198 In doing so, we had specific regard to the fact that BT's compliance costs would not outweigh potential significant competition benefits and the potential disbenefits on the downstream markets if this EOI obligation was not imposed. We remain of this view.

12.199 We have also taken utmost account of the BEREC Common Position. In relation to achieving the objective of a level playing field,¹¹⁴⁷ the BEREC Common Position identifies, amongst other things, as best practice that:

"BP10 NRAs should impose an obligation on SMP operators requiring equivalence, and justify the exact form of it, in light of the competition problems they have identified.

BP10a NRAs are best placed to determine the exact application of the form of equivalence on a product-by-product basis. For example,

¹¹⁴⁶ Paragraph 11.143 of the June BCMR Consultation. As noted above, due to the current requirements of the Undertakings, it is also BT's current practice to supply services in the wholesale MISBO market on an EOI basis.

¹¹⁴⁷ In this respect, the BEREC Common Position identifies the following competition issues which arise frequently: SMP players having an unfair advantage; having unmatchable advantage, by virtue of their economies of scale and scope, especially if derived from a position of incumbency; discriminating in favour of their own group business (or between its own wholesale customers), either on price or non-price issues; exhibiting obstructive and foot-dragging behaviour.

a strict application of EOI is most likely to be justified in those cases where the incremental design and implementation costs of imposing it are very low (because equivalence can be built into the design of new processes) and for certain key legacy services (where the benefits are very high compared to the material costs of retro-fitting EOI into existing business processes. In other cases, EOO¹¹⁴⁸ would still be a sufficient and proportionate approach to ensure non-discrimination (e.g. when the wholesale product already shares most of the infrastructure and services with the product used by the downstream arm of the SMP operator)."

12.200 We consider that our conclusion to impose an EOI obligation in the Relevant Modern Markets is consistent with that best practice. Our assessment is that this EOI obligation is proportionate when the combination of costs and benefits is balanced.

12.201 We have, however, decided to make some modifications of our proposal that appear to us appropriate to ensure that the EOI obligation does not produce any adverse effects which could be disproportionate to the aim we are pursuing of a level playing field in the related downstream retail markets on which OCPs can compete with BT. We discuss below, and in Section 13 for the wholesale MISBO market outside the WECLA, the detail of our modifications, but we consider in particular that our clarification to exclude from the scope of the EOI obligation network access which BT is not providing on an EOI basis as at 31 March 2013 means that this obligation does not add any material compliance costs for BT.

Wording of the EOI SMP condition

12.202 BT also raised concerns about the wording of the EOI obligation which generally followed the wording of the EOI obligation in the Undertakings but which omitted a list of exclusions included in the Undertakings version. In BT's view this list should be added to the condition if Ofcom decided to confirm its proposals.

Ofcom's considerations

12.203 The list that BT refers to exclude from the scope of the EOI obligation, trivial differences and differences relating to certain legal obligations, credit vetting, contract termination, physical network security and contractual provisions relating to safe working. We agree with BT that it would be appropriate to include these provisions and have made the following changes to SMP condition 4 (see Annex 7) to include them:

"Equivalence of Inputs" means that the Dominant Provider provides, in respect of a particular product or service, the same product or service to all Third Parties (including itself) on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all Third Parties (including itself) of the same Commercial Information about such products, services, systems and processes as the Dominant Provider provides to its own divisions, subsidiaries or partners subject only to: (a) trivial differences; and (b) differences relating to: (i) credit vetting procedures, (ii) payment procedures, (iii) matters of national and crime-related security (which for the avoidance of doubt includes for purposes related to the

¹¹⁴⁸ Equivalence Of Outputs (EOO).

Regulation of Investigatory Powers Act 2000), physical security, security required to protect the operational integrity of the network, (iv) provisions relating to the termination of a contract, or (v) contractual provisions relating to requirements for a safe working environment. For the avoidance of any doubt, unless seeking Ofcom's consent, the Dominant Provider may not show any other reasons in seeking to objectively justify the provision in a different manner. In particular, it includes the use by the Dominant Provider of such systems and processes in the same way as other Third Parties and with the same degree of reliability and performance as experienced by other Third Parties.

Scope of the EOI Obligation

12.204 Openreach wrote to us on 7 December 2012¹¹⁴⁹ raising concerns about the scope of the proposed EOI SMP obligation that in its view might be wider than envisaged by Ofcom in the June BCMR Consultation. BT believed that our intention was the EOI SMP obligation should be comparable in scope to the EOI obligation in the Undertakings. The proposed condition would apply to the whole AISBO market whereas the Undertakings obligation relates to specific types of wholesale leased line and there are a number of exclusions including products relating to core network, duct, fibre and transmission between core nodes.¹¹⁵⁰ The practical impact of these differences in scope would be to apply an EOI non-discrimination obligation to:

- Components of BT's regulated wholesale services that are carried over BT's core network and which are not currently subject to an EOI obligation. In particular inter-OHP legs of EBD services which are carried over BT's core network.¹¹⁵¹
- Transmission links for legacy networks that are not provided on an EOI basis.

12.205 Openreach argued that this would give rise to significant and intrusive regulatory constraints on BT's core network which are unjustified and disproportionate. Openreach observed that it was not apparent that Ofcom had envisaged or intended this tightening of regulation or considered the consequences of BT re-engineering its existing network to remove non-EOI transmission links and replace them with EOI components.

12.206 Without prejudice to BT's position on EOI more generally, Openreach suggested that we review the extent of the proposed EOI obligation and provide a mechanism which removes any requirement to impose constraints on BT's core network beyond that currently in practice.

Ofcom's considerations

12.207 In deciding to impose an SMP condition on BT to provide network access on an EOI basis in respect of wholesale AISBO markets in this review, it is not our intention to retrospectively apply EOI to elements of BT's existing network above and beyond that which is currently provided for by reference to the EOI requirements set out in

¹¹⁴⁹ BT Openreach letter to Ofcom dated 7 December 2012 entitled "Proposed SMP EOI conditions – impact on Core Networks".

¹¹⁵⁰ Undertakings given to Ofcom by BT pursuant to the Enterprise Act 2002, paragraph 5.46.1

¹¹⁵¹ These include links between two OHPs in the same TAN and links between TANs and OHPs not defined as TANs.

BT's Undertakings. Such a requirement would, in our view, be disproportionate since it would involve BT identifying and re-engineering existing network infrastructure which has been built in a manner broadly reflective of the EOI obligations now proposed. We have therefore modified SMP condition 4 to clarify the scope of the EOI obligation such that the obligation does not apply to such network access which BT was not providing on an EOI basis as at 31 March 2013.

12.208 SMP condition 4 (see Annex 7) makes specific provision for Ofcom to consent in writing to exclusions from the EOI requirement. Therefore we consider that BT is able to make representations at any time setting out the detail of the specific form of network access which it believes it provides in the wholesale AISBO markets and, with regard to which, it considers that the requirement to provide such network access on an EOI basis should be waived.

12.209 Turning to BT's specific concerns about the application of the EOI obligation to the core network components of AISBO services. The approach we adopted in the 2007/8 Review defined a network neutral core comprising 56 TANS – an approach we have retained in this review. However, whereas previously BT's obligations to provide services on the basis of EOI were defined in its Undertakings (which specifically excluded, *inter alia*, products relating to core network, duct, fibre and transmission between its core nodes¹¹⁵²), the SMP EOI condition which we proposed in the June BCMR Consultation would apply to elements of BT's core network unless specifically excluded.

12.210 We acknowledge BT's concerns about the costs and impacts of re-structuring affected links between certain OHPs using Openreach EOI inputs. We consider, on balance, that an exclusion from the SMP EOI obligation is warranted in these particular and limited circumstances and at this time. BT nevertheless remains subject to a no-undue discrimination requirement. We will re-consider the appropriateness of the exclusion in our next review of the relevant markets or at any time in circumstances where we find evidence to suggest that a no-undue discrimination provision is insufficient to address any adverse effects on competition.

12.211 We have modified SMP condition 4 at Annex 7 to exclude those connections between BT's OHPs, which are not Terminating Segments, from an obligation to provide these connections on an EOI basis under SMP Condition 4.

Volume discounts

12.212 BT disagreed with our assessment of volume discounts and considered that these should be treated in the same way as term and geographic discounts – i.e. that there should be no presumption that they are discriminatory and that they should be assessed on a case-by-case basis. BT reasoned that there are several significant players, not just BT's downstream divisions, who are able to win contracts and place large orders for AISBO services and benefit from such discounts.

Ofcom's considerations

12.213 Whilst it would be a matter for us to determine on a case-by-case basis whether any volume discounts that BT chooses to offer are unduly discriminatory depending on the circumstances, we remain of the view that there is a strong potential for anti-competitive effects to arise while BT remains the single largest purchaser of Openreach's AISBO services and is therefore likely to be the largest beneficiary of a

¹¹⁵² Section 5.46.1 of the Undertakings.

volume discount scheme. We therefore consider that BT's observation that other CPs, and not just its own downstream divisions, could benefit from volume discounts does not diminish the validity of the basis for our rebuttable presumption about volume discounts.

Revised proposals regarding AISBO TANs and circuit routing rules

12.214 As summarised above, we published revised proposals in relation to circuit routing rules in our November BCMR Consultation in light of consultation responses received to our original proposals published in our June BCMR Consultation.

12.215 The responses we received to our proposals in the June BCMR Consultation, our consideration of those responses and our revised proposals (including our reasoning and our view on the application of the relevant legal tests) were published in our November BCMR Consultation. We therefore detail here the responses to the November BCMR Consultation about our revised proposals.

12.216 Most respondents either agreed with our revised proposals or otherwise considered them to be reasonable, including Easynet, TalkTalk, Verizon, Virgin and CWW.¹¹⁵³

12.217 [REDACTED]

12.218 BT supported the revised proposals but remained concerned that the proposed circuit routing rules were not sufficiently constrained to prevent some CPs from relying on regulated access circuits from Openreach to provide coverage across large areas (in particular more densely populated areas) between PoPs. BT considered that this would enable some CPs to bypass and undermine the investments in core networks made by other CPs. BT thought that we should, at least, restate our position that any CP intending to rely on regulated AISBO services requires a presence at each of the 56 TANs in order to give full national coverage.

12.219 BT suggested two solutions to address these concerns:

- for Ofcom to impose TAN catchment areas and associated routing rules; or
- to extend the list of TAN areas.

12.220 Similar to CWW, BT also observed (without prejudice to its position on the regulation of MISBO services) that the principles raised in relation to the distinction in AISBO between a competitive core and regulated terminating segments could also apply in relation to MISBO services. We address this point in Section 13.

Ofcom's considerations

12.221 We note that OCPs did not raise concerns with our revised proposals regarding AISBO TANs and circuit routing rules which we set out in our November BCMR Consultation.

12.222 [REDACTED]

12.223 With regard to BT's comments, we have reviewed and considered various options, including those proposed by BT, which might address the concerns made by, on the one hand, OCPs about BT's ability to impose restrictions on the circumstances in

¹¹⁵³ CWW considered that we should provide comparable clarity for MISBO services.

which Openreach will supply EAD circuits and, on the other, BT's concerns about the provision of trunk segments. We remain of the view (as set out in our November BCMR Consultation) that the combination of our clarification of non-regulated trunk segments and the technical transmission limits of Openreach's AISBO products (25km/35km) are sufficient to (a) ensure that the provision of EAD circuits by Openreach to OCPs is not unduly restricted; and (b) ensure that competition and investment in core infrastructure are not undermined to a material degree. We conclude that this approach is preferable to other options in that it is the least intrusive (as it does not add to regulation and complexity); is the least likely to give rise to unintended consequences; and does not require further development work by the industry such as seeking to agree definitions of TAN catchment areas.

Consultation responses in relation to service migration

12.224 CWW, UKCTA and Level 3 raised concerns relating to the ability of customers to effectively migrate from legacy services in a properly managed way. The main points raised were:

- The current process was not considered to meet consumers needs and was descending into one where competitive distortion was a very real occurrence;
- BT was currently able to enjoy the benefits of lower cost services far faster than CPs are able to, largely as a result of the different requirements BT and CPs have for migration and that BT was actively impeding availability of the migration options that CPs need in order to pursue revenue maximising strategies¹¹⁵⁴;
- Specific reference was made for the need for migration solutions for:
 - Migration away from legacy WES to EAD and EAD LA¹¹⁵⁵; and
 - Migration away from TI.
- Openreach had notified its intent to withdraw all modify order types for WES circuits (Upgrades, Internal Shift, External Re-site and External Rearrange) from 1 June 2013 and the end of product support from 1 June 2015. Without the ability to either migrate like for like or incorporate the ability of CPs to perform a shift during migration, CPs WES circuits were likely to become stranded assets and forced into a less than ideal provide and cease migration arrangement where CPs will be forced to incur new connection fees and be subject to a new 12 month term.
- In light of the large volume of customers that currently use TI services that will at some point require to be migrated to AI or other services there is a need for an effective process to be established which recognises both the old and new circuit, linking the provisioning and cease activities within a service wrap that minimises cost and maximises customer experience.

¹¹⁵⁴ An example cited was the first WES migration offer. This involved a 'records only' reclassification of WES services to WES LA. It was argued that BT was the main beneficiary of this offer as its handover points are always located in BT exchanges. CPs more commonly have handover points outside BT exchanges which could not be reclassified in this manner.

¹¹⁵⁵ CWW claimed that BT had responded to a SoR for 'same bandwidth' migration as not being commercially viable.

- Ofcom should carve out the issue of migration from this review and deal with it within the context of a self-contained consultation on the issue, ideally immediately following the conclusion of the BCMR. In addition, Ofcom should consider placing an obligation upon BT to offer fair and reasonable network access that can be enforced (with clear justification) to include a requirement to offer reasonable migration solutions.

Ofcom's response

12.225 We acknowledge the concerns raised by respondents in relation to service migration.

12.226 Our view is that imposing a general obligation on BT in relation to migrations will not be an effective approach in resolving the concerns raised (or future concerns) since where there are issues, the most appropriate solution (or set of solutions) is likely to be dependent on the demands of CPs and the circumstances of each case.

12.227 In light of this, we consider that industry is better placed (with involvement of the OTA) to specify requirements for migration solutions that fit the circumstances of each case and the demands of industry. These should be delivered through the existing SoR processes. Where arrangements cannot be agreed, CPs can request that Ofcom intervenes to resolve the issue through its established Dispute Resolution Process.

12.228 We are aware that BT is intending to trial a migration process from TI services to Ethernet products from January 2013 to March 2013.¹¹⁵⁶ We welcome this step and encourage the industry to fully engage in this process with the aim of developing and reaching an agreed migration solution.

Consultation responses in relation to transparency and notification obligations

12.229 BT made several comments about the proposed transparency and notification obligations. The main points were:

- BT supported our proposal to reduce the notification period for price reductions to 28 days but asked us to clarify that it should also apply to price increases at the end of temporary special offers.
- BT did not support our proposal to keep the notification period for changes to existing products at 90 days instead of reducing it to 28 days. BT's reasoning was that 90 days is very long and burdensome and reduces its ability to respond quickly to customers' requirements and changing demands. BT argued that Openreach should be able to benefit from a level playing field with its competitors on price changes, arguing that its competitors are able to move much faster commercially than Openreach.
- BT also argued that we should not impose a price publication requirement for the wholesale market for low bandwidth AISBO in the WECLA on the grounds that, given the competitive conditions in this market, this requirement could encourage price-following, with the effect of dampening rather than encouraging competition. BT referred to the arguments we made in our statement on fixed narrowband retail services market review of 15 September 2009 in relation to deregulation in the retail ISDN2 market.

¹¹⁵⁶ SoR 8078.

Ofcom's considerations

- 12.230 We confirm that the 28 day notice period will apply to special offers by which we mean price notifications that specify a limited term price reduction and where the price immediately following the special offer is no higher than immediately before the special offer commenced. We have re-worded Condition 7.4 to clarify this.
- 12.231 In the June BCMR Consultation we carefully considered, amongst other things, BT's arguments for reducing the notification period for changes to existing products. We explained the reasons why changes to AISBO services were likely to have a greater impact on CPs than changes to services in other markets, including the investment required to use these services, network build complexity and the complexity of the supply chain supporting multiple downstream services. We remain of the view that there is a risk with a 28 day notice period that CPs would have insufficient time to react to BT price rises and could be left financially exposed. We therefore consider that on balance, a 90 day notice period is generally appropriate in AISBO markets where we have found BT to have SMP.
- 12.232 In relation to BT's comments about price publication obligations, we do not consider that our reasons for removing retail price publication obligations in the retail ISDN2 market are particularly relevant in the context of the low bandwidth AISBO markets. In the case of the ISDN2 retail market we concluded that the retail remedies were both ineffective and counterproductive in light of the presence of upstream wholesale remedies that allowed CPs to compete effectively with BT in the ISDN2 retail market. We were thus able to remove the retail remedies (including price publication obligations) to address the risk of price following.
- 12.233 We consider that a price publication requirement on BT, in response to its SMP in AISBO markets including the WECLA, facilitates downstream competition (where rivals compete with BT's downstream divisions) by providing transparency over wholesale prices and contributing to constrain BT's ability to behave in an unduly discriminatory manner. Moreover, it is the cumulative effect of the transparency and notification obligations, together with the requirement to provide network access on an EOI basis, which serves to address the relevant competition problems we have identified. In the absence of a price publication requirement we consider that the incentives on rivals to invest and enter the market for AISBO services in the WECLA might be undermined. Whilst we acknowledge that the prospects for wholesale competition are stronger in the WECLA than elsewhere in the UK we remain of the view that in this wholesale market these benefits outweigh the risks of price following and hence of muted competition.
- 12.234 In conclusion, we consider that a price publication obligation on BT for AISBO in the WECLA is justifiable and necessary over the period considered in this market review for the reasons set out above.

Consultation responses about notification requirements

- 12.235 In Section 11 we discuss BT's comments about the notification requirements in Condition 7 and 9. BT's comments and our consideration of them are also relevant to the wholesale AISBO markets.

Consultation responses in relation to inclusion of usage factors in ACCNs

12.236 In Section 11 we discuss BT's comments about the content of Access Charge Change Notices in Condition 7.5. BT's comments and our consideration of them are also relevant to the wholesale AISBO markets.

Consultation responses in relation to a direction relating to service level guarantees

12.237 Three CPs commented on our June BCMR Consultation proposal that BT should be subject to a direction specifying SLG compensation arrangements. The main points made were:

- BT disagreed with our proposal to apply the SLG direction arguing that mandatory SLGs do not produce the best product service level arrangements for its customers and that it should have the flexibility to agree appropriate SLGs with its customers.
- BT argued that the SLGs proposed in the draft Direction are significantly more onerous than the SLGs offered by its competitors and provided examples.
- BT argued that it would be unreasonable for Ofcom to remove the caps on SLG compensation payments included in the 2008 SLG Direction and welcomed our clarification that this was a drafting error.
- Exponential-e and Level 3 raised concerns about Openreach's service performance measures that support the SLGs, in particular the exclusion of certain activities from the SLG measurements and the use of 'deemed consent' to stop the SLG measurement clock. They suggested that we should task the OTA to undertake a full review of the effectiveness of the SLA/SLG Direction with a view to implementing changes where necessary.

12.238 We also received responses to our November BCMR Consultation in which we sought comments on our proposals to correct a drafting error in our June BCMR Consultation in which we had unintentionally omitted compensation caps from our proposed SLG Direction.

12.239 In summary, BT agreed with our proposal and, whereas most respondents did not dispute our proposal to correct our unintended omission of compensation caps, several stakeholders considered that we should investigate further whether SLGs (with or without compensation caps) are effective in incentivising Openreach's performance. Easynet and TalkTalk noted that Openreach was effectively able to deploy strategies (such as declaring MBORC¹¹⁵⁷) to mitigate the effect of SLGs when failing to meet service performance targets.

12.240 TalkTalk disagreed with the rationale we gave in the November BCMR Consultation¹¹⁵⁸ as to why compensation caps are necessary. It argued that by removing compensation caps, BT is not exposed to an unlimited financial risk in any meaningful sense. TalkTalk argued that including a cap does have negative economic consequences in weakening the incentives on BT to perform to an acceptable quality level.

¹¹⁵⁷ Matters Beyond Our Reasonable Control (MBORC).

¹¹⁵⁸ In which we referred to the reasoning for our conclusions set out in our 2008 SLG Statement.

12.241 Some respondents noted that we are looking to review Openreach service performance issues in other market reviews. TalkTalk expressed disappointment that we were not apparently doing so in this review.

Ofcom's considerations

Appropriateness of the SLG compensation arrangements

12.242 We consider that the conclusions of our previous work on SLGs in the 2008 SLG Statement¹¹⁵⁹, in which we originally specified the SLG compensation arrangements, remain valid. In particular, our decision then to impose SLG compensation arrangements was taken against a background of failed commercial negotiations and in light of our conclusion that the extant compensation arrangements were not fair and reasonable as they did not provide Openreach with a strong enough incentive to sustain service performance at an efficient level.

12.243 We consider it unlikely, absent specific obligations, that Openreach would set SLG compensation arrangements such that it would have a strong incentive to sustain service performance. In light of the opposing commercial interests, we also consider it likely that commercial negotiations would again be unsuccessful. We therefore remain of the view that this direction is appropriate.

Level of SLG compensation payments

12.244 We note BT's comments on the level of SLGs. We consider that reducing the compensation payments to achieve parity with lower SLG payments offered by other CPs would weaken Openreach's incentive to sustain service performance and undermine the effectiveness of the SLG compensation arrangements. We have therefore decided to maintain the compensation payments at the current levels, which were subject to consultation prior to the 2008 SLG Direction, subject to our further comments below.

Service performance measures

12.245 We note that Openreach generally reports good performance against the contractual SLAs for Ethernet services. However, the reports we receive from CPs, end-users and industry fora suggest that these metrics do not fully reflect the performance experienced by CPs and end-users, particularly in relation to service delivery lead times. For example, there is no specific SLA covering activities which precede agreement of a service delivery date (e.g. time for surveys to be completed). Even when a delivery date is agreed between Openreach and CPs, some CPs perceive that Openreach invokes deemed consent (a process that allows the clock to stop) too frequently and that, consequently, the service delivery lead times experienced by end customers is materially longer than the contractual SLA would suggest.

12.246 We consider that in the first instance Openreach, CPs and the OTA are best placed to take the necessary steps to improve performance and to review the suitability of the current SLAs. In this regard we note that following requests from Ofcom and CPs, the OTA is coordinating industry work to address these issues. The OTA is engaging with Openreach at a senior level and has also recently taken on the role of co-chair with Openreach of the Ethernet Product and Commercial Group, in which Ethernet service performance is discussed.

¹¹⁵⁹ 'Service level guarantees: Statement and Directions' published by Ofcom on 20 March 2008. See <http://stakeholders.ofcom.org.uk/binaries/consultations/slq/statement/statement.pdf>

12.247 Consequently we consider that it is premature to consider formal intervention in this market review. However, we do not discount the need for formal regulatory intervention including reviewing the effectiveness of our direction on SLGs for the supply of Ethernet services in the AISBO markets, depending on the outcome of the activities that the OTA is coordinating.

Consultation responses in relation to requests for new network access

Openreach's product development process

12.248 BT noted the concerns raised by CPs in relation to Openreach's Statements of Requirements (SoR) process. It considered that there was a misconception that Openreach operates different processes for CPs and BT's downstream divisions. It emphasised that all development requests follow the same process. It also emphasised that all requests for access relating to AISBO services are processed in accordance with the timetable specified in the relevant SMP condition. BT also stated that it maintains a full audit trail and regularly supports enquiries regarding SoRs from the Equality of Access Office when CPs had questions regarding the progression of SoRs.

12.249 BT agreed with our proposal that the concerns raised by CPs are best dealt with at an operational level in industry fora and in cooperation with the OTA. BT also observed that Openreach's SoR process has continued to be developed, improved and enhanced in discussion with CPs.

12.250 BT also suggested that we should make two amendments to the new network access SMP condition:

- To align the text of the SMP condition with that used in the narrowband markets by removing the specified timescales for Openreach to process requests for new network access. This would allow Openreach to use a common SoR process across markets and to agree timescales with CPs.
- BT argued that any industry-agreed process must acknowledge that BT is free to accept or reject SoRs like any other commercial entity and noted that this is explicitly acknowledged in section 5.11 of the Undertakings. BT said that it should be made explicit in the condition that BT is able to refuse a request where it has initially confirmed the request could be met but where further assessment has determined that the request is not commercially viable or in BT's commercial interests.

Ofcom's considerations

12.251 In light of the consultation responses we remain of the view that the concerns about the operation of the product development process for AISBO services are mostly operational in nature, relating to how individual requests are processed. We therefore consider that generally it would not be practicable to address these concerns with changes to the SMP conditions. In our view, the new network access obligations together with the obligation not to discriminate unduly (which we discuss above) already provide a clear framework under which BT must operate.

12.252 We therefore consider these concerns are best addressed at an operational level in the industry fora and in cooperation with the OTA. In cases where this proves unsuccessful, concerns can be escalated to Ofcom, either informally or formally through the disputes and complaints processes.

12.253 We do not consider that it would be appropriate to make changes to the new network access condition in light of BT's suggestions. First, in relation to aligning the conditions with those applied in the narrowband markets, the main difference is that the narrowband conditions do not specify timescales for the evaluation of new network access requests. Given the CPs' concerns about the time taken to progress network access requests we consider it appropriate to continue to specify these timescales. We welcome BT's confirmation that all requests for network access are handled in accordance with the specified timetable.

12.254 Secondly, we do not consider section 5.11 of the Undertakings to be relevant in this context because that section relates to product development requests that fall outside markets in which BT has SMP. In these markets where we have found BT to have SMP we have concluded that it would have an incentive to refuse to supply new forms of network access. Therefore we do not consider it appropriate to modify the condition to give BT more flexibility to take account of its commercial interests. We consider that the SMP conditions we proposed would impose both clear and practical obligations on BT. The network access condition requires BT to meet reasonable requests for network access and the new network access condition specifies a process for the evaluation of such requests and explicitly makes provision for BT to undertake a feasibility study before confirming that it will provide the requested network access.

Consultation responses in relation to Condition 10

12.255 In Section 11 we discuss BT's proposed changes to the new network access obligations in Condition 10. BT's comments and our consideration of them are also relevant to the wholesale AISBO markets.

Consultation responses in relation to the practical implementation of remedies across boundaries between AISBO geographic markets

12.256 BT disagreed with our proposal that terminating segments crossing the boundary of the WECLA geographic market (i.e. circuits with one end inside and one end outside the WECLA) should be classified as outside the WECLA for pricing purposes. In its view it would be more consistent with the approach adopted for PPCs and in other markets such as wholesale broadband access for most circuits to be classified based on the location of the customer end.

12.257 BT proposed that terminating segments should be classified according to the location of the customer site or in the case of a backhaul circuit the location of the remote exchange being served by the circuit regardless of the location of the CP node at the other end of the circuit. BT reasoned that CPs should be able to establish network nodes in the WECLA to serve sites within the WECLA so BT should not be regulated when CPs make a commercial decision to do otherwise.

12.258 For wholesale end-to-end services (i.e. circuits serving one end-user site within the WECLA and another end-user site outside the WECLA), BT agreed with our proposal that price components specific to each end should be treated according to the regulations applicable within the geographic market relevant to each end, and that the non-location-specific price elements should be treated according to the regulation applying outside of the WECLA.

12.259 Level 3 expressed concern that the wording of the proposed remedy in relation to circuits between the WECLA and non-WECLA destinations raised questions of

interpretation and invited us to ensure that the final wording of the relevant SMP condition is absolutely clear and explicit.

Ofcom's considerations

12.260 Having considered BT's comments, we believe that the classification proposed by BT is more consistent with our view of competitive conditions in the WECLA than the approach we proposed in the June BCMR Consultation. In particular, CPs should be able to establish network nodes within the WECLA and serve sites within the WECLA from them. We have therefore decided that this classification should apply. On reflection we also think that it would be more straightforward to classify end-to-end circuits as a whole rather than by components. Thus wholesale AISBO circuits that cross the WECLA boundary should be classified as follows:

- Wholesale end to end services (i.e. circuits between two end-user sites) – should be classified as inside the WECLA only if both end-users sites are in the WECLA and other circuits should be classified as outside the WECLA (i.e. if one or more sites are outside the WECLA); and
- Other circuits (i.e. circuits between an end-user site and a network node or between network nodes) – should be classified as being in the WECLA if the end-user site is within the WECLA or in the case of backhaul circuits if the remote end of a backhaul circuit is within the WECLA.

12.261 We consider that the guidance we have provided in relation to this matter is sufficiently clear for the purposes for which it is intended and that it is not necessary to make this explicit on the face of the SMP Conditions as Level 3 appears to suggest.

Consultation responses in relation to Openreach Project Services

12.262 BT was the only respondent to comment on our provisional view that insofar as Project Services are purchased and provided in conjunction with regulated business connectivity services, they are subject to the SMP conditions we are proposing for this market.

12.263 BT welcomed our recognition that it was unlikely that the current arrangements are discriminatory, since Project Services are available to BT and CPs on an EOI basis.

12.264 However, BT regarded as unjustified and inappropriate our view that Project Services should be regarded as a provisioning option and therefore subject to the same SMP Conditions that we propose for AISBO markets.

12.265 BT argued that Project Services would include a range of activities, some of which are clearly replicable and which CPs could choose to self-provide or outsource, and that imposing the full range of remedies would simply reduce innovation. Moreover it argued that since Project Services is available on products outside the business connectivity market review, imposing regulation in one market means, in effect, inappropriately imposing regulation on the product irrespective of the market in which it applies.

12.266 BT suggested that we amend our position in this area and simply state that in cases where Project Services activities are not replicable by CPs, we would likely consider whether the Project Services element raised questions as to whether the underlying regulated service was meeting the requirement for no-undue discrimination.

Ofcom's considerations

12.267 BT appears to have misinterpreted our comments about Project Services. We would regard only those activities relating to the provision of business connectivity services as falling within the scope of the respective business connectivity market. Thus we would not regard unrelated activities, such as project management of orders for other types of service, as falling within the scope of a business connectivity market.

12.268 We remain of the view that it is unlikely that CPs would be able to fully replicate Project Services because they would not have internal knowledge of Openreach processes or have the access to Openreach systems and personnel which Project Services is able to draw on. On this basis, we consider there should be a rebuttable presumption that Project Services activities supporting the provision of business connectivity services will fall within the scope of the respective business connectivity market.

Ofcom's conclusions on the appropriate remedies

12.269 In order to address the competition problems we have identified in the AISBO markets, we have concluded it is appropriate to:

- adopt the remedies proposed in the June and November¹¹⁶⁰ BCMR Consultation; and
- to broaden the scope of the obligation requiring the provision of network access by BT to be on fair and reasonable terms and conditions, to include also fair and reasonable charges.

12.270 Our conclusions are the result of our cumulative consideration of:

- our assessment of the appropriate remedies, as set out in the June and November BCMR Consultations and set out above;
- our considerations of consultation responses; and
- all the evidence available to us.

12.271 Below we set out:

- the aim of the remedies that we have concluded should be imposed on BT in the wholesale AISBO markets;
- the obligations imposed on BT by the remedies; and
- the reasons why we consider the remedies comply with the relevant legal test in the Act.

12.272 The SMP Conditions which give effect to our conclusions are set out in Annex 7.

¹¹⁶⁰ Our conclusions regarding accounting separation and cost accounting, together with our considerations of responses received, are set out in Section 16.

Interconnection and accommodation services

12.273 In order to use the wholesale AISBO services that BT provides in these markets, CPs also require certain interconnection and accommodation services. To achieve an overall solution we consider that it is necessary to regulate the provision of those ancillary services,¹¹⁶¹ in the absence of which, we consider BT would have an incentive to refuse to supply or to supply in a discriminatory manner, for example by charging excessive prices.

12.274 Network access is defined in sections 151(3) and (4) of the Act and includes interconnection services and/or any services or facilities that would enable another CP to provide electronic communications services or electronic communication networks. We consider that a requirement to provide network access would, therefore, include any ancillary services as may be reasonably necessary for a third party to use the services. Consequently, each of the obligations that we have decided to impose below for these markets also applies to the provision of accommodation and interconnection services that are reasonably required by CPs in connection with the provision of the regulated services.

12.275 In Section 14 we set out our decisions on whether BT should be required to provide specific types of interconnection services.

Requirement to provide network access

Aim of regulation

12.276 We have concluded it is appropriate to impose a requirement for BT to meet reasonable requests for network access.

12.277 We consider that, in the absence of the nature of the network access obligation we are imposing, BT would have the ability and incentive to refuse to provide network access or to supply on such terms that amount to a refusal to supply, which would otherwise prevent or restrict competition in the AISBO markets and enable BT to monopolise the provision of services in related downstream markets.¹¹⁶²

12.278 Further, in light of consultation responses, which we set out together with our considerations of those responses and our reasons in Section 9, we have concluded that the scope of the fair and reasonable obligation according to which BT must provide network access, should be broadened to include fair and reasonable charges.¹¹⁶³

SMP Condition

12.279 We have concluded that BT should be subject to a general requirement to meet reasonable requests for network access.

¹¹⁶¹ This is consistent with the BEREC Common Position **BP7** in relation to achieving the objective of assurance of co-location at delivery points and other facilities.

¹¹⁶² See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of assurance of access.

¹¹⁶³ As set out in Section 9, in reaching this conclusion we have taken utmost account of the BEREC Common Position.

Legal tests

12.280 We are satisfied that we have met the relevant legal tests, both for the general requirement for providing network access and for the two further specific network access obligations we are imposing. Our reasoning is set out below under the proposed specific remedies for the provision of certain Ethernet services.

Specific remedies for the provision of Ethernet access, backhaul and end-to-end services

Aim of regulation

12.281 In addition to the general requirement of providing network access, we have decided to introduce the following specific network access obligations:

- a requirement to provide Ethernet access;
- a requirement to provide Ethernet backhaul; and
- a requirement to provide short range end-to-end services.

12.282 We have concluded that introducing these new specific remedies as part of the SMP obligations will ensure that BT keeps supplying wholesale disaggregated access and backhaul Ethernet services and short range end-to-end services. In view of the concerns about the circuit routing restrictions (discussed above) we have also specified in more detail the circuits that BT should be required to provide.

12.283 In the absence of these requirements, we consider BT has an incentive to withdraw or no longer supply disaggregated products and make different products available under the general requirement of network access.¹¹⁶⁴ In our view, this would be significantly disruptive to industry which, due to pre-existing regulation has developed its business models around the availability of disaggregated Ethernet access and backhaul.

SMP Condition

12.284 We have concluded that BT should be subject to specific network access obligations to provide Ethernet access, backhaul and short range end-to-end services.

Legal tests

Section 87 of the Act

12.285 Section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide such network access as we may, from time to time, direct. These conditions may, pursuant to Section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at the times required by or under the conditions.

¹¹⁶⁴ This is consistent with the BEREC Common Position **BP3a** in relation to achieving the objective of assurance of access.

12.286 When considering the imposition of such conditions in a particular case, we must take into account six factors set out in Section 87(4) of the Act, including *inter alia*:

- the technical and economic viability of installing and using other facilities, including the viability if other network access products whether provided by the dominant provider¹¹⁶⁵ or another person¹¹⁶⁶, that would make the proposed network access unnecessary;
- the feasibility of the proposed network access; and
- the need to secure effective competition, including where it appears to us to be appropriate, economically efficient infrastructure based competition, in the long term.

12.287 In proposing the general, and specific, network access conditions set out above, together with the direction we have considered were necessary to impose, we have taken all these six factors into account.

12.288 The definition of access and the way in which we might assess reasonable demands for access are set out in our Access Guidelines.¹¹⁶⁷ We consider it appropriate in cases where we find a CP has SMP (such as BT in this case) to impose an access obligation on that provider requiring it to meet all reasonable requests for network access within the relevant wholesale market, irrespective of the technology required, on fair and reasonable charges, terms and conditions.

12.289 As discussed in our SMP assessment there are considerable sunk costs associated with building networks to provide leased lines services. We consider it unlikely to be economically viable or efficient to build competing access networks on a sufficient scale to provide effective constraint on BT's SMP in the downstream markets.

12.290 Therefore, we have decided that requirements for BT to provide general and specific network access are appropriate. They facilitate competition in downstream markets by enabling CPs to compete without the need to invest in a network, an investment which we considered, on the basis of our market analysis, represented a structural barrier to entry and expansion in the AISBO markets. Consequently, we consider these requirements to be necessary for securing effective competition including economically efficient infrastructure based competition, in the long term.¹¹⁶⁸ The requirements for BT only to meet reasonable network access requests also ensure that due account is taken of the technical and economic viability of installing and using other facilities, the feasibility of the proposed network access, and of the investment made by BT initially in providing the network.

Statutory duties under sections 3 and 4 of the Act

12.291 In addition to taking into account the six factors in section 87(4) of the Act, we consider that the general and specific network access obligations:

¹¹⁶⁵ i.e. in this instance BT.

¹¹⁶⁶ i.e. other CPs.

¹¹⁶⁷ *Imposing access obligations under the new EU directives*, Oftel, 13 September 2002, available at http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.pdf

¹¹⁶⁸ This is consistent with the BEREC Common Position **BP3** in relation to achieving the objective of assurance of access.

- further the interests of citizens in relation to communications matters and further the interests of consumers in the AISBO markets by promoting competition, in accordance with our general duty under section 3(1) of the Act;
- seek to achieve the objective of securing the availability throughout the UK of a wide range of electronic communications services, in accordance with our duty under section 3(2) of the Act;

12.292 In deciding on these network access obligations, in accordance with our duty under section 3(4) of the Act, we also had regard to:

- the desirability of promoting competition in relevant markets;
- the desirability of encouraging investment and innovation in relevant markets; and
- the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom

12.293 We also consider that the required network access obligations accord with the six European Community requirements for regulation, in particular by:

- promoting competition in the provision of electronic communications networks and services, associated facilities and the supply of directories; and
- encouraging the provision of network access and service interoperability, namely securing efficient and sustainable competition, efficient investment and innovation, and the maximum benefit for customers of CPs.

Statutory duties under sections 47 and 49 of the Act

12.294 Sections 47 and 49 of the Act require conditions and directions respectively to be objectively justifiable, non-discriminatory, proportionate and transparent. We consider that the SMP conditions and direction are:

- objectively justifiable, in that they facilitate and encourage access to BT's network and therefore promote competition to the benefit of consumers;
- not unduly discriminatory, as they are imposed only on BT and no other operator has been found to hold a position of SMP in this market;
- proportionate, since they are targeted at addressing the market power that we have found BT holds in the AISBO markets and do not require it to provide access if it is not technically feasible or reasonable; and
- transparent in that the SMP conditions and directions are clear in their intention to ensure that BT provides access to its networks in order to facilitate effective competition.

12.295 In relation to our conclusion that the scope of the fair and reasonable obligation according to which BT must provide network access, should be broadened to include fair and reasonable charges, we consider this is appropriate in order to promote efficiency and sustainable competition in the AISBO markets and to provide the greatest possible benefits to end-users by enabling OCPs to purchase network access at levels that should be expected in a competitive wholesale market. In this

respect, we have also taken into account the extent of investment of BT in the matters to which the broadened scope of the fair and reasonable obligation would relate.¹¹⁶⁹

12.296 For all the reasons set out above, we consider that the general and specific network access conditions, together with the direction, are appropriate to address the competition concerns identified, in accordance with section 87(1) of the Act.

Requirement not to unduly discriminate and Equivalence of Input

Aim of regulation

Provision of Ethernet services on an Equivalence of Input basis

12.297 We consider it appropriate to impose a requirement on BT, as a result of our finding of SMP in the AISBO markets, not to discriminate unduly in the provision of network access. In particular, we consider it appropriate to require that Ethernet services are supplied to competitors on an EOI basis.

12.298 Article 8(1) of the Access Directive¹¹⁷⁰ requires Member States to ensure that national regulatory authorities are empowered to impose certain obligations where an operator is designated as having SMP. These include, under Article 10 of the Access Directive, obligations of non-discrimination. Article 10(1) provides that a national regulatory authority may: “*impose obligations of non-discrimination, in relation to interconnection and/or access*”. Article 10(2) further provides “[o]bligations of non-discrimination shall ensure, in particular, that the operator applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners”.

12.299 Article 10 of the Access Directive is implemented into UK law by section 87(6)(a) of the Act which gives us a power to impose “*a condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with network access to the relevant network or with the availability of the relevant facilities*”. We consider any conditions imposed pursuant to this power require equivalence as per Article 10(2)¹¹⁷¹.

12.300 A non discrimination obligation is intended as a complementary remedy to the network access obligation, principally to prevent the dominant provider from discriminating in favour of its own downstream divisions and to ensure that competing providers are placed in an equivalent position. Without such an obligation, the dominant provider is incentivised to provide the requested wholesale network access service on terms and conditions that discriminate in favour of its own

¹¹⁶⁹ In this respect, we consider the extent of investment – if required at all – would not be significant given the strictly behavioural nature of this specific remedy – i.e. it serves to impose an *ex ante* qualification on the manner in which BT must comply with the main obligation which is to meet reasonable requests for network access.

¹¹⁷⁰ Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities.

¹¹⁷¹ This position is supported by our 2005 guidance on Undue discrimination by SMP operators where we state at paragraph 1.1 that “*in wholesale markets Requirements not to unduly discriminate (under the Act) have the same meaning, and describes the same concept, as an obligation of non-discrimination (under the [Access] Directive)*”.

downstream divisions. For example, BT may decide to charge its competing providers more than the amount charged to its own downstream units or it might strategically provide the same services but within different delivery timescales. Both these behaviours could have an adverse effect on competition.

12.301 Non discrimination can however have different forms of implementation.¹¹⁷² A strict form of non discrimination – i.e. a complete prohibition of discrimination – would result in the SMP operator providing exactly the same products and services to all CPs (including its own downstream divisions) on the same timescales, terms and conditions (including price and service levels), by means of the same systems and processes and by providing the same information. Essentially, the inputs available to all CPs (including the SMP operators' own downstream divisions) would be provided on a truly equivalent basis, an arrangement which has become known as EOI. As explained earlier in this Section, the concept of EOI was first identified in the TSR¹¹⁷³ as one of our key policy principles to ensure that regulation of the telecommunication markets is effective. Following on from that review, a specific form of EOI was implemented in 2005 by means of the BT Undertakings.¹¹⁷⁴

12.302 On the other hand, a less strict interpretation of non discrimination may allow for flexibility and result in a more practical and cost-effective implementation of wholesale inputs in cases where it is economically justified. For example, we are imposing a less strict interpretation for the wholesale TISBO markets under which BT would be required to ensure that any discrimination is not undue and we propose to interpret this obligation in accordance with our guidelines of November 2005 on Undue discrimination by SMP providers (the Discrimination Guidelines).¹¹⁷⁵

12.303 We consider that Article 10 of the Access Directive as implemented by section 87(6)(a) of the Act provides a basis for imposing both EOI and a less strict interpretation of non-discrimination which prevents discrimination that is undue.

12.304 In the case of Ethernet services, for the reasons set out earlier in this Section, we have concluded it is appropriate to require that Ethernet services are delivered to competitors on an EOI basis. The aim of the SMP condition is to maintain a level playing field in related downstream retail markets to the AISBO markets on which OCPs can compete with BT, by preventing BT from discriminating against OCPs in favour of its wholesale division.

12.305 We have excluded certain backhaul segments which form part of BT's core network. In addition we have excluded from the scope of the EOI obligation network access which BT is not providing on an EOI basis as at 31 March 2013.

¹¹⁷² The European Commission has recently undertaken a project with the aim to publish some guidelines on how to interpret and enforce non-discrimination obligations. The Commission's work is taking into account how non-discrimination obligations are currently implemented in the different member states and in Autumn 2011, on EC's request, Ofcom has filled a questionnaire on these topics.

¹¹⁷³ http://stakeholders.ofcom.org.uk/binaries/consultations/telecoms_p2/summary/maincondoc.pdf

¹¹⁷⁴ Definition of EOI in the BT Undertakings: 'Equivalence of Inputs' or 'EOI' means that BT provides, in respect of a particular product or service, the same product or service to all Communications Providers (including BT) on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all Communications Providers (including BT) of the same Commercial Information about such products, services, systems and processes. In particular, it includes the use by BT of such systems and processes in the same way as other Communications Providers and with the same degree of reliability and performance as experienced by other Communications Providers.

¹¹⁷⁵ <http://stakeholders.ofcom.org.uk/consultations/undsmp/contraventions/>

12.306 Where the EOI obligation does not apply, BT remains subject to a no-undue discrimination obligation. In light of stakeholder responses,¹¹⁷⁶ we confirm that this obligation applies to both non-pricing *and* pricing practices.

No unduly discriminatory discounts

12.307 The obligation not to discriminate unduly also applies to pricing discounts.

12.308 First, in relation to volume discounts, we recognise that these would very often in practice constitute undue discrimination since BT's retail arm would almost inevitably be the main beneficiary and there is therefore a strong potential for anti-competitive effects. However, we believe that this point is well understood by CPs and do not consider a change in the obligation is required specifically to reflect this.

12.309 Secondly, in relation to geographic discounts:

- As discussed in Section 5, we have conducted a detailed analysis of the geographic scope of each of the relevant retail and wholesale product markets. In summary, and as set out in more detail in Section 5, geographic areas can comprise a single relevant geographic market to the extent that:
 - competitive conditions in the geographic area are sufficiently homogeneous; and
 - the areas can be distinguished from neighbouring areas where the competitive conditions are appreciably different.
- We have noted that for the geographic markets where we have found SMP, the underlying costs and competitive conditions would not be completely homogenous throughout the UK (even outside the WECLA). This has suggested to us that some freedom to charge in a way that reflects more accurately the costs incurred and to respond to the local characteristics of competition that exist in these markets would be efficient. Moreover, given the level of cost differences that may exist and the extent of competition in some areas, BT's ability to compete could be limited if it were required to maintain nationally uniform prices. Hence, geographically differentiated prices may reflect BT responding legitimately to cost differences in the face of competition;
- In light of the above, we therefore consider that geographic discounts may or may not be unduly discriminatory depending on the circumstances. In the event of an allegation of offering unduly discriminatory geographic discounts, we would judge each alleged breach of the no undue discrimination obligation on a case by case basis.

12.310 In Sections 20 and 21 we have considered how geographic discounts should be treated in the specific charge control remedy we are imposing in each of the AISBO markets.

12.311 Thirdly, in relation to term discounts:

- in principle, we consider this form of discount could raise competition concerns – for example:

¹¹⁷⁶ See Section 9 for further discussion.

- if BT's downstream operations were at an advantage compared to downstream competitors. In principle, the largest beneficiary of term discounts could be BT's downstream operations, as they may see no commercial disadvantage in being contractually tied to BT's wholesale services for a lengthy period of time. If so, it could provide BT with the ability to undercut downstream competitors in ways that they could not match (where those competitors rely on wholesale services from BT, but do not wish to sign up to the discounts);
- term discounts may increase the barriers to entry/growth for upstream competitors to Openreach, if purchasers of wholesale services are tied into longer term contracts (and so increasing the switching costs);
- however, it is not necessarily the case that we should automatically view all forms of term discount as harmful to consumers;
- we therefore consider that term discounts may or may not be unduly discriminatory depending on the circumstances. In the event of an alleged breach we would judge each alleged breach on a case by case basis.

12.312 In Sections 20 and 21 we have considered whether there should be any restrictions on the term discounts that BT may offer and how they might be taken into account in the specific price control remedy we are imposing in each of the AISBO markets.

SMP Condition

12.313 We have concluded that BT should be subject to a requirement not to unduly discriminate and provide Ethernet services on an EOI basis.

Legal tests

12.314 We are satisfied that the SMP conditions meet the various tests set out in the Act.

12.315 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.316 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;

- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

12.317 In reaching our conclusion that BT should be subject to a requirement not to discriminate unduly and to provide Ethernet services on an EOI basis, we have taken all these six factors into account. In particular, we consider that the SMP conditions are required to secure effective competition in the long term.

12.318 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP conditions are aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by preventing BT from leveraging its SMP into related downstream markets.

12.319 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP conditions are:

- objectively justifiable in that they provide safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT discriminating unduly in favour of its own downstream activities or between different competing providers ;
- not unduly discriminatory, as they are imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate because:
 - in relation to the no undue discrimination obligation it only seeks to prevent discrimination that is undue; and
 - in relation to the obligation to provide Ethernet service on an EOI basis, for the reasons set out above at paragraphs 12.173 to 12.203;
- transparent in that they are clear in what they are intended to achieve.

Direction relating to service level guarantees

Aim of regulation

12.320 As a consequence of BT's control of wholesale infrastructure in these markets, CPs depend on BT for the provision of wholesale services which are able to support efficient and reliable end-user services. Whilst EOI requirements give BT some incentive to deliver efficient and reliable services to CPs (as its own downstream divisions must also use them), in previous work we have concluded that further measures are required to incentivise good performance.¹¹⁷⁷

12.321 In particular, we consider it important that the contractual arrangements for the wholesale products CPs buy from BT in this market are such that:

¹¹⁷⁷ Service level guarantees: incentivising performance
http://www.ofcom.org.uk/media/news/2008/03/nr_20080320

- they incentivise the efficient provision of reliable services to BT's wholesale customers;
- they set out fair and reasonable compensation payments for delays in delivery and repair of such services; and
- they allow BT and its wholesale customers to monitor effectively the performance of BT's provision and repair of wholesale regulated products.

12.322 In order to achieve these objectives, contractual arrangements need to include:

- a set of SLAs which reflects the commercial SLAs provided to end users of Alternative Interface leased lines; and
- a set of SLGs which sets out fair and reasonable compensations for delays in delivery and repair of such services.

12.323 In support of these objectives, in the 2007/8 Review we issued a direction under the network access condition specifying the SLG compensation arrangements for services BT provides in this market. The direction applied principles established in earlier SLG work. We consider that these principles are still valid and therefore that it is appropriate to reapply the direction. The direction requires BT to:

- pay compensation for orders not delivered by the Contractual Delivery Date (CDD) or the Customer Requirements Date (whichever is later);
- pay compensation for faults not repaired within 5 hours;
- pay SLG compensation payments proactively;
- not to apply any limits to compensation payments; and
- make compensation payments without prejudice to any right of CPs to claim for additional losses.

SMP Direction

12.324 We have concluded that BT should be subject to a direction which sets out fair and reasonable compensations for delays in delivery and repair of Ethernet services.

Legal tests

12.325 We are satisfied that the direction meets the relevant tests set out in the Act.

12.326 First, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4 of the Act. In particular, the conditions are aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by the implementation of an SLG regime that will incentivise BT to provide good quality of service to CPs.

12.327 Secondly, section 49 of the Act requires directions to be objectively justifiable, non-discriminatory, proportionate and transparent. The direction is:

- objectively justifiable, in that it requires BT to adopt an SLG regime that will incentivise it to deliver good quality of services to CPs;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate since it only seeks to incentivise good quality of service that would adversely affect competition and ultimately cause detriment to end-users; and
- is transparent in that the direction is clear in what they are intended to achieve.

Charge controls

Aim of regulation

12.328 We will impose a charge control remedy to address the competition problems we have identified, in particular the risk of excessive pricing.

12.329 Section 87(9) of the Act authorises the setting of an SMP services condition setting price controls for network access and relevant facilities. Section 88 of the Act specifies that Ofcom are not to set a price control unless it appears to Ofcom that there is a risk of adverse effects due to pricing distortions and it appears to Ofcom that setting a price control would promote efficiency, sustainable competition and confer the greatest benefits on the end users.

12.330 A price control can take a variety of forms¹¹⁷⁸ including but not limited to a charge control, cost orientation and/or safeguard cap.

12.331 In a competitive market, the charges for services would be set on the basis of the commercial judgements of individual companies and could be expected to deliver cost reflective prices. However, as discussed above, one of the competition problems we have identified as a result of our market analysis of the AISBO markets, in particular our respective SMP assessments, is the risk of BT engaging in excessive pricing.

12.332 Excessive prices at the wholesale level could make it difficult for third party CPs to compete at the retail level with BT and in the long term, may result in market exit. Unjustifiably high wholesale charges are also likely to result in high retail prices – i.e. consumers would be paying more for a service than they should expect if wholesale prices were constrained by effective competition.¹¹⁷⁹

12.333 Having identified this relevant risk of an adverse effect arising from price distortion in our market analysis,¹¹⁸⁰ we have concluded that this risk should be addressed by the imposition of an appropriate charge control remedy in each of the AISBO markets. We have concluded that the charge control remedy in each of the AISBO markets also appears appropriate for the purposes of:

- promoting efficiency;

¹¹⁷⁸ As suggested by Recital 20 of the Access Directive.

¹¹⁷⁹ See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of fair and coherent access pricing.

¹¹⁸⁰ Within the meaning of section 88(3) of the Act.

- promoting sustainable competition; and
- conferring the greatest possible benefits on end-users.¹¹⁸¹

12.334 We have also taken account of the extent of the investment of BT in the matters to which the charge control remedy relates.

12.335 Our conclusions, together with our reasons, consultation responses and considerations of those responses, with regard to the detail of the charge control remedy we are imposing in each of the AISBO markets, and the reasons why we consider this remedy complies with the relevant legal tests in the Act, are set out in Section 21.¹¹⁸²

Transparency and notification obligations

Aim of regulation

12.336 We have concluded that BT should be subject to a set of obligations, aimed at promoting transparency and ensuring non-discrimination.¹¹⁸³ The obligations which we discuss in more detail below are:

- an obligation to publish a reference offer, including terms and conditions of provisioning and repair;
- an obligation to give 28 days' notice of price reductions and to give 90 days' notice of all other changes to prices, terms and conditions for existing AISBO services;
- an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new AISBO services;
- a requirement to notify technical information with 90 days notice;
- an obligation to publish quality of service information, as directed by Ofcom; and
- obligations relating to requests for new network access.

12.337 These requirements are designed to support the general, and specific, network access and non-discrimination obligations. These forms of discrimination are particularly relevant when dealing with a vertically integrated incumbent, as in BT's case.

12.338 In our view, since their imposition as a result of the 2007/8 Review, these SMP obligations have been on the whole effective in supporting the network access and non-discrimination obligations.

12.339 We have concluded that it is appropriate to apply these obligations to BT.

¹¹⁸¹ Within the meaning of section 88(1)(b) of the Act.

¹¹⁸² In Section 19 we also set out how, as noted above, we have taken utmost account of the BEREC Common Position.

¹¹⁸³ In this respect, we consider the set out obligations aimed at promoting transparency and ensuring non-discrimination are consistent with the relevant best practices identified in the BEREC Common Position.

SMP Conditions

12.340 We have concluded that BT should be subject to requirements to provide information and give notice of changes.

Legal tests

12.341 Section 87(6) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access. Section 87(6) also authorises the setting of SMP services conditions that require the dominant provider to publish information about network access to ensure transparency and to publish terms and conditions.

12.342 We discuss each of the transparency obligations in more detail in the sub sections below.

Requirement to publish a Reference Offer (RO)

Aim of regulation

12.343 A requirement to publish an RO has two main purposes, namely:

- to assist transparency for the monitoring of potential anti-competitive behaviour; and
- to give visibility to the terms and conditions on which other providers will purchase wholesale services.

12.344 This helps to ensure stability in markets without which we consider incentives to invest might be undermined and market entry less likely.

12.345 The publication of a RO potentially allows for speedier negotiations, avoids possible disputes and gives confidence to those purchasing wholesale services that they are being provided on non-discriminatory terms. Without this, market entry might be deterred to the detriment of the long-term development of competition and hence consumers.

12.346 We consider the requirement to publish an RO imposed as a result of the 2007/8 Review had been effective in carrying out the three roles explained above. Therefore we have concluded that it is appropriate to impose the same requirement on BT in this market review.

12.347 The condition requires the publication of a RO and specifies the information to be included in that RO (set out below) and how the RO should be published. It prohibits the dominant provider from departing from the charges, terms and conditions in the RO and requires it to comply with any directions Ofcom may make from time to time under the condition. The published RO must set out (at a minimum) such matters as:

- a clear description of the services on offer including technical characteristics and operational process for service establishment, ordering and repair;
- the locations of points of network access and the technical standards for network access;

- conditions for access to ancillary and supplementary services associated with the network access including operational support systems and databases etc;
- contractual terms and conditions, including dispute resolution and contract negotiation/renegotiation arrangements;
- charges, terms and payment procedures;
- service level agreements and service level guarantees; and
- to the extent that BT uses the service in a different manner to CPs or uses similar services, BT is required to publish a reference offer for in relation to those services.

SMP Condition

12.348 We have concluded that BT should be subject to requirements to publish a RO.

Legal tests

12.349 We are satisfied that the SMP condition meets the various tests set out in the Act.

12.350 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.351 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

12.352 In reaching our conclusion that BT should be subject to a requirement to publish a reference offer, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

12.353 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP condition is aimed at promoting competition firstly by ensuring that providers have the necessary information to allow them to make informed decisions about purchasing AISBO services in order to compete in downstream markets and by providing transparency in order to assist in the monitoring of anti-competitive behaviour.

12.354 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it requires that terms and conditions are published in order to encourage competition, provide stability in markets and monitor anti-competitive behaviour;
- not unduly discriminatory in that it is imposed only on BT and no other operator has been found to hold a position of SMP in the AISBO markets;
- proportionate in that only information that is considered necessary to allow providers to make informed decisions about competing in downstream markets is required to be provided; and
- transparent in that it is clear in its intention to ensure that BT publishes details of its service offerings.

Requirement to notify charges and terms and conditions

Aim of regulation

12.355 We have concluded that BT should be subject to an obligation to notify changes to its charges, terms and conditions.

12.356 Notification of changes to services at the wholesale level can assist competition by giving advanced warning of charge changes to providers purchasing wholesale services also in order to compete with the dominant provider in downstream markets. It also supports the non-discrimination obligation by ensuring that BT does not notify changes in a discriminatory manner. Notification of changes to charges therefore helps to ensure stability in markets without which we consider incentives to invest might be undermined and market entry made less likely. However, there may be some disadvantages to notifications, particularly in markets where there is some competition. It can lead to a 'chilling' effect where CPs follow BT's prices rather than act dynamically to set competitive prices.

12.357 Currently the notification period for changes to prices, terms and conditions of existing products and services in these markets is 90 days and 28 days for new network access reflecting the lower administrative impact of the introduction of new services.

12.358 As discussed above, BT's view is that the notice period should be reduced to 28 days, to align it with the notice period Ofcom applies in the wholesale broadband access market. BT argued that 28 day notice is now standard commercial practice for wholesale services and would therefore not inconvenience CPs. BT also argued that reduced notice periods would make it easier for it to comply with its charge control obligations by enabling it to alter its charges more quickly, for example after RPI figures are published.

12.359 We need to ensure that the regulatory approach that we adopt in each market adequately addresses the competition issues which we have identified. In the WBA market we concluded that a 28 day notice period was appropriate but in other markets such as the WLA market, we concluded that the competition issues warranted maintaining a 90 day notice period for LLU services. We therefore, do not accept BT's argument that because we have given BT more commercial freedom in a particular economic market we should do the same in other economic markets.

12.360 The investment required to use wholesale AISBO services is significantly greater and requires CPs to build more complex networks than for most of the services to which we have applied a 28 day notice period. In this market there is also often a longer / more complex supply chain of network operators, resellers and systems integrators supporting multiple downstream services. This means that changes to wholesale AISBO services are likely to have a greater impact on CPs than changes to downstream services where we apply a 28-day notice period and will also be more complex to assess. Typically this might involve modelling the impact of the new charges on the cost of providing downstream services, securing internal approval for a pricing revisions and finally notifying end-users (which may be subject to a minimum notice period, typically 28 days). With a shorter notification period, there is a risk that CPs would have insufficient time to react to changes to wholesale terms and could for instance be left financially exposed by changes to wholesale prices. For these reasons we considered that the advantages of a 90 day notice period outweighed the disadvantages and that a 90 day notice period was therefore still generally appropriate.

12.361 However, we also recognised that industry and end users could benefit from shorter notification times when prices are being reduced. For example, there may be advantages in having a shorter notification period for price incentives to encourage migration to newer or more efficient AISBO services. There should also not be a risk of financial exposure for CPs if prices are being reduced. We therefore considered there was scope to reduce the notification period for price reductions to 28 days. Often price reductions are given as part of a special offer to which conditions are attached so the shorter notice period would also need to apply to such conditions.¹¹⁸⁴

12.362 We noted that in the last year, we had consented to a request from BT to waive the notice period for price reductions for Ethernet services. We could maintain the 90 day notice period and grant waivers if we receive similar requests in future. However, we took the view that there was a likelihood that such requests would be granted, and we therefore considered that it would be more proportionate and less administratively burdensome to reduce the notice period for price reductions to 28 days.

12.363 We have now concluded that the following notification periods should apply:

- 28 day notice for prices, terms and conditions relating to new service introductions;

¹¹⁸⁴ For example, we have recently granted a notification waiver for Openreach's special offer for EAD to WES migration. This offered a discount on connection charges and a waiver of early termination charges on condition that customers upgraded to higher bandwidth circuits.

<http://stakeholders.ofcom.org.uk/binaries/consultations/ethernet-waiver/statement/statement.pdf>

- 28 days notice for price reductions and associated conditions (for example conditions applied to special offers)¹¹⁸⁵; and
- 90 days notice for all other changes to prices terms and conditions.

SMP Condition

12.364 We have concluded that BT should be subject to requirements to notify charges, terms and conditions.

Legal tests

12.365 We are satisfied that the SMP condition meets the various tests set out in the Act.

12.366 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.367 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

12.368 In reaching our conclusion that BT should be subject to a requirement to notify changes to its charges, terms and conditions, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

12.369 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for

¹¹⁸⁵ We further consider that a 28 day notice period should apply to an increase in prices that may occur at the end of a special offer (where the price immediately following the end of the special offer is no higher than price immediately before the start of the special offer).

consumers by ensuring that CPs have the necessary information about changes to terms, conditions and charges sufficiently in advance to allow them to make informed decisions about competing in downstream markets.

12.370 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that there are clear benefits from the notification of changes in terms of ensuring that providers are able to make informed decisions within an appropriate time frame about competing in downstream markets;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in this market;
- proportionate, as 90 days is considered the minimum period necessary to allow competing providers to plan for changes to existing network access and 28 days would be sufficient for new network access and price reductions; and
- transparent in that it is clear in its intention to ensure that BT provides notification of changes to their charges and terms and conditions.

Requirement to notify technical information

Aim of regulation

12.371 We have concluded that changes to technical information should be published in advance, so that competing providers have sufficient time to prepare for them.

12.372 Under the requirement to publish a RO, BT is required to publish technical information. However, advance notification of changes to technical information is important to ensure that providers who compete in downstream markets are able to make effective use of the wholesale services provided by BT.

12.373 For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes to wholesale services offered by BT.

12.374 Technical information includes new or amended technical characteristics, including information on network configuration, locations of the points of network access and technical standards (including any usage restrictions and other security issues).

12.375 We consider the requirement to notify technical information imposed as a result of the 2007/8 Review has been effective in allowing providers sufficient time to prepare for such changes. Therefore we consider it is appropriate to impose the same requirement in this market review.

12.376 The condition requires the notification of new technical information within a reasonable time period but not less than 90 days in advance of providing new wholesale services or amending existing technical terms and conditions. We consider that 90 days is the minimum time that competing providers need to modify their network to support a new or changed technical interface or support a new point of access or network configuration.

12.377 Longer periods of notification may also be appropriate in certain circumstances. For example, if BT were to make a major change to their technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary. We consider that regulations are not necessary to address such circumstances, because they are likely to be sufficiently rare for us to address them on a case-by-case basis.

SMP Condition

12.378 We have concluded that BT should be subject to requirements to notify technical information.

Legal tests

12.379 We are satisfied that the SMP condition meets the various tests set out in the Act.

12.380 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.381 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

12.382 In reaching our conclusion that BT should be subject to a requirement to notify technical information, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

12.383 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to AISBO services to enable them to compete in downstream markets.

12.384 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it enables providers to make full and effective use of network access to be able to compete in downstream markets;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate in that 90 days is the minimum period that Ofcom considers is necessary to allow competing providers to modify their networks; and
- transparent in that it is clear in its intention that BT notify changes to technical information in advance.

Requirement to publish quality of service information

Aim of regulation

12.385 We have concluded that BT should be required to publish specific quality of service information.

12.386 Vertically integrated operators have the ability to favour their own downstream businesses over third party CPs by differentiating on price or terms and conditions. This discrimination could also take the form of variations in quality of service (either in service provision and maintenance or in the quality of network service provided by the dominant provider to external providers compared to its own retail operations). This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage in terms of the services they can offer consumers to compete with the downstream retail business of the vertically integrated operator.

12.387 We consider the requirement to publish quality of service information imposed as a result of the 2007/8 Review has been effective in mitigating the risk of this type of discrimination. Therefore we consider it is appropriate to impose the same requirement on BT in this market review.

12.388 We conclude that for each of the AISBO markets, BT should be subject to an obligation to publish information about the quality of service of the network access it provides. The obligation requires BT to publish information as directed by Ofcom, rather than requiring BT to publish specific information from the date of the imposition of the obligation.

12.389 The main benefit of this obligation is that BT could be required to publish information that would enable other CPs to determine whether the service they receive from BT is equivalent to that provided by BT to its own retail divisions.

12.390 BT already publishes a detailed set of Key Performance Indicators (KPIs) that are shared and discussed with industry and the OTA. BT has also agreed with Ofcom and the OTA to start publishing a summary of key metrics aimed at demonstrating how its performance reflects on the end user experience, for example in terms of provisioning and fault repair for different levels of care. These metrics are intended to also include key products provided in the AISBO markets. Given this agreement we do not consider it necessary to issue a direction specifying the quality of service information that BT should publish. This obligation will therefore function as a

backstop that would allow Ofcom to require BT to publish specific information if satisfactory agreements cannot be reached in future.

SMP Condition

12.391 We have concluded that BT should be subject to requirements to publish quality of service information.

Legal tests

12.392 We are satisfied that the SMP condition meets the various tests set out in the Act.

12.393 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.394 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

12.395 In reaching our conclusion that BT should be subject to a requirement to publish quality of service information, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

12.396 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have visibility of the quality of service that BT provides for itself and to other providers.

12.397 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it aims to support the non discrimination obligations in the provision of services by requiring BT to publish quality of service information about the service it provides to itself and to other providers;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate because it only requires BT to publish information as directed by Ofcom in the event we consider such information is required to monitor BT's compliance with its other obligations, which is the minimum condition to ensure the desired objective; and
- transparent in that it is clear in its intention that BT is required to publish quality of service information.

Requests for new network access

Aim of regulation

12.398 We have concluded that BT should be subject to obligations that determine how requests for new types of network access should be handled.

12.399 Section 87(3) of the Act authorises the setting of SMP services conditions in relation to the provision of network services. Under section 87(5)(a) such conditions may include conditions that secure fairness and reasonableness in the way in which requests for new network access are made and responded to.

12.400 Vertically integrated operators have the ability to favour their own downstream business over third party CPs by differentiating on price or terms and conditions. One form of discrimination is in relation to the handling of requests for new types of network access. This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage compared with the downstream retail business of the vertically integrated operator in terms of their ability to introduce new services to meet their customer needs and in terms of their ability to offer innovative services in order to compete more effectively.

12.401 Subject to our views expressed above in relation to Openreach's product development process, we consider the obligations imposed on BT determining how requests for new types of network access should be handled have been effective in mitigating the risk of this type of discrimination. Therefore we consider it is appropriate to impose the same obligations on BT in this market review. These obligations include:

- a requirement for BT to publish reasonable guidelines specifying the required content and form of requests for new network access and how they will be handled;
- a requirement for BT to provide sufficient technical information to CPs to allow them to draft product specifications that are efficient and which satisfy the reasonable requirements; and
- timescales within which BT must acknowledge and process requests.

SMP Condition

12.402 We have concluded that BT should be subject to requirements regarding the handling of request for new network access.

Legal tests

12.403 We are satisfied that the SMP condition meets the various tests set out in the Act.

12.404 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

12.405 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

12.406 In reaching our conclusion that BT should be subject to a requirement specifying how it should handle requests for new network access, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

12.407 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by facilitating the development of competition in downstream markets.

12.408 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The condition is:

- objectively justifiable in that its purpose is to support the non discrimination obligations in the processing of requests for new network access;

- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate as it continues to provide a SoR process based on the currently implemented process, while allowing scope for industry to be involved in agreeing process improvements; and
- transparent in that the condition is clear in its intention to set requirements for the processing of requests for new network access.

Insufficiency of national and Community competition law remedies

12.409 At the beginning of this Section we set out our conclusion that national and Community law remedies would be insufficient to address the competition problems we have identified in the AISBO markets.

12.410 We set out below, by reference to the remedies we have decided to impose, our reasons supporting this conclusion, and which reasons lead us to conclude that competition would be ineffective in the AISBO markets over the course of the three year review period.

12.411 First, we do not consider that the nature and scope of the remedies we are imposing to address the competition problems we have identified could be imposed equally effectively under competition law. This includes reliance on the BT Undertakings which are, in essence, a remedy under national competition law.¹¹⁸⁶ As we explained in 2005 when we accepted them in lieu of a reference to the Competition Commission, the BT Undertakings are intended to complement *ex ante* regulation under the Act. They seek to deploy a variety of mechanisms aimed at defining equivalent treatment, and at preventing and detecting discriminatory conduct by BT when supplying wholesale network access and backhaul services to its downstream competitors. In contrast, the SMP remedies we are imposing are needed to address the competition problems we have identified in this market review and which we consider will pervade over the course of the three year review period. For example:

- we are imposing both a general, and specific, network access obligations, in the manner and form set out in Conditions 1 and 2, that apply in all of the AISBO markets – i.e. not just in one relevant market;
- Conditions 1 and 2 provide, amongst other things, for direction-making powers.¹¹⁸⁷ These direction-making powers are important since they allows us to direct BT as to the application of the general, and specific, network access obligation – whether that should be in one or all of the wholesale AISBO markets – and so ensure their application can be specifically tailored to address the competition problem(s) we have identified, both now and over the course of the three year review period. In this respect, under Condition 1.3, we are imposing a direction on BT specifying the SLG compensation arrangements for services BT provides in this market;
- we are imposing specific cost accounting obligations;

¹¹⁸⁶ Enterprise Act 2002.

¹¹⁸⁷ Condition 1.3 and Condition 2.2.

- the *ex ante* remedies we are imposing provide, amongst other things, that new products and services provided in the AISBO markets are captured by the relevant SMP obligations,¹¹⁸⁸ thus ensuring their continued effectiveness to address the competition problems over the course of the three year review period.

12.412 Secondly, as evidenced by the suite of remedies we are imposing, the requirements of intervening to address the competition problems in the AISBO markets are extensive. We list the remedies below:

- a requirement to provide network access including an obligation to offer fair and reasonable charges, terms and conditions;
- a requirement to provide cost accounting information;
- a requirement not to unduly discriminate;
- a requirement to provide Ethernet services on an EOI basis;
- a charge control;
- a requirement to publish a reference offer;
- a requirement to give notice of changes to prices terms and conditions:
 - 28 days notice for the introduction of prices, terms and conditions for new services;
 - 28 days notice for price reductions for existing services; and
 - 90 days notice for all other changes to prices, terms and conditions.
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

12.413 Thirdly, based on our regulatory experience from two previous market reviews, recent developments in the AISBO markets, consultation responses and expected developments over the three year review period, we remain of the view that providing continued certainty in the AISBO markets is of paramount concern – both to BT and OCPs, and to end-users. We consider this is best achieved through *ex ante* regulation which, in comparison to competition law remedies and in light of our analysis of the relevant markets, will:

- will provide greater certainty over the course of the three year review period on the types of behaviour that are/are not allowed;
- allow for timely intervention – proactively by us and/or by parties being regulatory disputes to us for swift resolution¹¹⁸⁹ – and consequently timely enforcement using

¹¹⁸⁸ See for example, Condition 1 which provides that the provision of network access – i.e. both existing and new – is on fair and reasonable terms, conditions and charges.

¹¹⁸⁹ See sections 185 to 191 of the Act, in particular section 185(1A).

the considerable enforcement powers accorded us under the Act to secure compliance,¹¹⁹⁰ through a process with which the market in general is familiar and which is also set out in the Act.

Conclusions regarding the remedies we are imposing in the AISBO markets

12.414 We have concluded that the following remedies should be imposed on BT in the AISBO markets:

- a requirement to provide network access including an obligation to offer fair and reasonable charges, terms and conditions;
- an accounting separation obligation;
- a cost accounting obligation;
- a requirement not to unduly discriminate;
- a requirement to provide Ethernet services on an EOI basis;
- a charge control;
- a requirement to publish a reference offer;
- a requirement to give notice of changes to prices terms and conditions:
 - 28 days notice for the introduction of prices, terms and conditions for new services;
 - 28 days notice for price reductions for existing services; and
 - 90 days notice for all other changes to prices, terms and conditions.
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

12.415 We have concluded that BT should be subject to a direction under the general access condition specifying the SLG compensation arrangements for services BT provides in this market.

12.416 As explained above we have concluded that these remedies also apply to interconnection and accommodation services that BT provides in connection with wholesale AI services.

¹¹⁹⁰ See sections 94 to 104 of the Act.

Section 13

Remedies for wholesale MI markets

Introduction

- 13.1 In this Section we set out the remedies that we have decided to impose on BT in the following market:
- Wholesale market for Multiple Interface Symmetric Broadband Origination (MISBO) in the UK excluding the Hull area and the WECLA.
- 13.2 Unless stated otherwise, we refer to the market set out above as the wholesale MISBO market.
- 13.3 The remedies we have imposed are those which we conclude are appropriate to address the competition problems we have identified in the wholesale MISBO market as a result of our market analysis, in particular our SMP assessment, and which we conclude national and Community competition law alone would be insufficient to address. We set out the competition problems further below in this Section.

Summary of our conclusions

- 13.4 Figure 13.1 below summarises the competition problems we have identified in this market and the remedies we have concluded are appropriate to address them.

Figure 13.1: Summary of the competition problems and remedies

Competition problems	Remedies
<ul style="list-style-type: none"> Refusal to supply 	Requirement to provide network access on reasonable request including an obligation to offer fair and reasonable charges, terms and conditions
	Requirement to provide single-service Ethernet services on reasonable request <ul style="list-style-type: none"> disaggregated single-service Ethernet access and backhaul; end-to-end single-service Ethernet products.
	Requirement to provide end-to-end and backhaul services with WDM equipment at the customer's premises
<ul style="list-style-type: none"> Price discrimination; Non-price discrimination, e.g. different terms and conditions, delaying tactics (different delivery timescales for provision and fault repair); strategic design of products; exclusive dealing; quality discrimination; different SLAs and SLGs; Predatory pricing; Margin squeeze. 	Requirement to provide network access on Equivalence of Input basis
	Obligation not to discriminate unduly
	Publication of reference offer
	Requirement to notify changes to charges and T&Cs
	Publication of quality of service as required by Ofcom
	Notification of technical information

Competition problems	Remedies
<ul style="list-style-type: none"> • Price and non-price discrimination; • Excessive pricing; • Predatory pricing; • Margin squeeze. 	Accounting separation and cost accounting obligations
<ul style="list-style-type: none"> • Cross-subsidisation • Excessive pricing • Over investments • Excessive costs/inefficiencies 	Charge control on single-service Ethernet products
<ul style="list-style-type: none"> • Refusal to supply new network access; • Non-price discrimination, e.g. delaying tactics, strategic product design, etc. 	Requests for new network access

Charge control remedy

13.5 In this Section, we set out our reasons why, at a high level, we remain of the view that a charge control in the wholesale MISBO market should be imposed. Our conclusions, together with our reasons, consultation responses and considerations of those responses, with regard to the detail of the charge control we are imposing, are set out in Section 20.

Other pricing remedies

13.6 As part of our assessment of the appropriate package of pricing remedies, together with the non-pricing remedies, to address the competition problems we have identified in the wholesale MISBO market, we have considered the following, set out below. Our conclusions, together with our reasons, consultation responses and considerations of those responses, in relation to i) to iii) are set out in Section 9 and Section 16.

- i) cost orientation;
- ii) the scope of the fair and reasonable obligation according to which, amongst other things, BT must provide general network access; and
- iii) accounting separation and cost accounting obligations.

13.7 In relation to i), we have decided, as per our proposal in the June BCMR Consultation, not to impose a cost orientation obligation on BT in the wholesale MISBO market.

13.8 In relation to ii), we have decided to broaden the scope of the obligation requiring the provision of network access by BT in the wholesale MISBO market to be on fair and reasonable terms and conditions, to include also fair and reasonable charges.

13.9 In relation to iii), we have decided, as per our proposals in the June and November BCMR Consultations, to impose accounting separation and cost accounting obligations on BT in the wholesale MISBO market. This is discussed in Section 16.

Remedies as a whole in the wholesale MISBO market

- 13.10 We consider that the remedies as a whole in the wholesale MISBO market would achieve our statutory duties and would satisfy the relevant legal tests. In reaching our conclusions we have taken account of our regulatory experience from two previous market reviews, recent developments in the MISBO market (which, as noted in the June BCMR Consultation, is a relatively new market), consultation responses, and expected developments over the review period of three years.
- 13.11 In reaching our conclusions on the appropriate remedies to impose, we have taken due account of all applicable guidelines and recommendations issued by the European Commission (EC), and we have taken utmost account of the BEREC Common Position.¹¹⁹¹ We have also had regard to relevant guidance from the European Regulators' Group (ERG), Ofcom and ourselves.

Structure of this Section

- 13.12 This Section is structured as follows:

Sub-section	Content
Assessment of competition problems in the MISBO market	Assessment of competition problems, insufficiency of national and Community competition law remedies and the result of our assessment.
Approach in the June BCMR Consultation and the remedies we proposed	Summary of the assessment we carried out in the June BCMR Consultation and our proposed remedies.
Consultation responses and Ofcom's considerations	Summary of stakeholders' comments to our June BCMR Consultation and our considerations in respect of those comments.
Ofcom's conclusions on the appropriate remedies	Details of the remedies we have decided to impose and in relation to each, a statement of their aim and the legal tests we have applied to them.

Assessment of competition problems in the wholesale MISBO market in the UK

- 13.13 We summarise below our assessment of the competition problems in the wholesale MISBO market before setting out the remedies¹¹⁹² we have concluded, having considered consultation responses, are appropriate to address those problems.

Competition problems identified in the wholesale MISBO market

- 13.14 In light of our SMP assessment, we summarise below the competition problems we have identified in the wholesale MISBO market. We have concluded BT would, in the absence of *ex ante* regulation, have the incentive, and its market power would afford it the ability, to engage in anti-competitive behaviour. These include, in particular:
- refusal to supply access at the wholesale level and thus restrict competition in the provision of services in the retail MI leased lines market, the residential fixed broadband market and mobile market;

¹¹⁹¹ BEREC Common Position on best practices in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale lease lines, BoR (12) 83.

¹¹⁹² This approach is consistent with our approach in the June BCMR Consultation.

- engaging in unduly discriminatory practices in relation to prices, for example by charging its competitors more than it charges its own downstream divisions;
- engaging in unduly discriminatory non-pricing practices – e.g. by supplying the same products on different terms and conditions, different timescales for provision of fault and repair, quality discrimination, different SLAs and SLGs, creating new variants to fulfil the requirements of its downstream divisions and taking longer to address, or avoiding addressing, the requirements of its competitors; and
- charging excessively high prices and/or engage in anti-competitive cross subsidisation.

13.15 We have concluded BT would have the incentive to engage in these practices in order to adversely affect the development of competition in the related downstream retail markets and thus enable it to act independently of competitors, customers and ultimately of consumers in this market.

Insufficiency of national and Community competition law remedies

13.16 For the reasons set out at the end of this Section, and by reference to the remedies we are imposing, we have concluded that national and Community law remedies would be insufficient to address the competition problems we have identified.

13.17 This has led us to conclude, as per our view in the June BCMR Consultation, that over the course of the review period of three years, competition would be ineffective in the wholesale MISBO market.

13.18 We now turn to the approach we adopted in the June BCMR Consultation which followed on from our assessment of the competition problems.

Approach in the June BCMR Consultation

Assessment of appropriate remedies

13.19 In order to address the competition problems identified in our market analysis, we proposed remedies in our June BCMR Consultation which would require BT to provide its competitors with wholesale access to its network and would define the rules that would apply to its provision of such access.

13.20 In assessing the appropriate nature and form of the remedies that we proposed, we considered the views expressed by stakeholders in response to the CFI and analysed current competition in the wholesale MISBO market. We summarise the responses we received to our CFI below.

13.21 In summary, we considered that the remedies we proposed in the wholesale MISBO market struck an appropriate balance between the following considerations:

- maintaining CPs' incentives to invest in infrastructure where it is effective and sustainable for them deliver services without any reliance on BT's network;
- promoting CPs' incentives to invest effectively in core conveyance infrastructure where such investment is efficient and sustainable;

- ensuring that CPs can provide downstream services using BT's wholesale MISBO services where use of or investment in alternative infrastructure is unlikely to be effective and sustainable; and
- protecting users from potential exploitation through excessive pricing.¹¹⁹³

Responses to the CFI

Stakeholders' views

13.22 In the CFI we sought stakeholders' views on to the likely evolution of MISBO services, and their responses helped focus the analysis which we set out below. We considered that the following points made by stakeholders in response to our CFI were of particular relevance to remedies in the MISBO market:

- UKCTA noted that the business connectivity market is changing rapidly, particularly in relation to the transition from TI to AI services and the growth of end-user bandwidth requirements. UKCTA noted that the capacity of leased lines being supplied to end-users has grown rapidly. At the time of the 2007/8 Review, 10Mbit/s Ethernet circuits were replacing 2Mbit/s TI access circuits. CPs are now commonly supplying 100Mbit/s access circuits and the transition to 1Gbit/s access circuits appears to have commenced.
- With high bandwidth access circuits now in widespread use, stakeholders argued for regulation of the high bandwidth AI market and the introduction of new access and backhaul remedies supporting all bandwidths above 1Gbit/s including interfaces such as Fibre Channel required to support the rapidly expanding demand for bandwidth in data centres. There was general agreement that the remedies should include a requirement to provide WDM circuits.
- UKCTA argued that Ofcom should put in place a framework that is sufficiently forward looking to accommodate this rapidly evolving market in which products could be introduced, achieve mass take-up and possibly even be superseded within the three year timescale of the market review. UKCTA argued that rather than put in place remedies based on specific technologies and bandwidths, Ofcom should specify remedies in terms of the underlying bottleneck assets namely BT's access and backhaul networks which CPs are unable to replicate economically.
- BT argued that our approach, not just in relation to MISBO but symmetric broadband origination at any bandwidth, should have flexibility to treat a large business site with competitive supply of services¹¹⁹⁴ differently from the rest of the postcode sector in which it is located, in order to avoid results that would otherwise "*fly in the face of market realities*". It followed up its response to the CFI with a number of submissions, including its response to the June BCMR Consultation, arguing that we should identify a separate competitive market for connections at data centres, using a specific list of existing data centre sites, and that regulation should be removed and/or not applied.

¹¹⁹³ See paragraph 12.14.

¹¹⁹⁴ BT defines such sites in its response to the June BCMR Consultation as 'multi-tenanted carrier neutral' data centres which they consider to be 'network nodes'.

Ofcom's initial considerations

- 13.23 We recognised that the leased lines market is changing rapidly, that end-users' demand for bandwidth is growing, and that WDM could play an important role alongside other technologies to fulfil some of that growing demand in downstream services, including retail leased lines, residential fixed broadband and mobile broadband services.
- 13.24 We agreed with UKCTA's comments that our proposals for remedies should be sufficiently forward looking to accommodate the evolution of the market in the next few years, in which products and technologies could evolve rapidly. We discuss below the specific objectives we took into account in proposing remedies in light of the likely models of competition and of the prospects for and impediments to their development.
- 13.25 BT framed its argument that we should treat data centres differently as a point which goes to market definition. We understand that it is appropriate to consider the position of data centres, and we set out our considerations of this question in Annex 12 of the June BCMR Consultation. We thought that the best way to address this potential issue was to consider whether a different approach to remedies might be appropriate. To the extent that we could show that there is more competition to supply data centres than other leased line users, it was appropriate to consider whether we should then apply a different set of remedies to services provided to data centres in areas where BT is found to have SMP. Our provisional conclusion was that it would be appropriate to consider such an approach only once interconnection of different networks' WDM systems becomes established, to enable more effective competition based on investment in infrastructure. However, at that stage we did not consider that there was a clearly defined category of 'data centres' which are sufficiently homogenous and distinct from other users to justify a differential approach to remedies.

Characteristics of the market

- 13.26 We were particularly mindful that the MISBO market is developing rapidly, and that demand for MISBO services is likely to grow significantly in the next few years.
- 13.27 The very high bandwidths that can be delivered with MISBO products currently find application in data centres, computing installations of large businesses, local and national governments, CPs' networks, and in production and broadcasting of television services.
- 13.28 Important factors in end-users' purchasing decisions are likely to include prices, delivery times and assurance of high service levels¹¹⁹⁵.
- 13.29 Reliability is a key requirement in applications that use MISBO products. It is often expressed in terms of availability, which is defined as the proportion of the time for which the service is available. A typical service requirement is likely to specify availability better than 99.999%. This is equivalent to a total of no more than about five minutes of downtime in a year.

¹¹⁹⁵ Ofcom commissioned CSMG to conduct research on very high bandwidth connectivity. The research report identified price, network reliability/service levels and lead times as the three most important criteria used by end users in choosing between competing providers. The CSMG Research is published at <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/statement/CSMG-report.pdf>.

13.30 In order to achieve such high levels of availability, CPs need to design resilience into their solutions. The design must take into account, among other things, that fibre anywhere along the route of the service could suffer accidental damage at any time, and that locating and repairing any such damage can take many hours. CPs often pre-provide alternative fibre routes for each service in order to address this possibility. They can then design solutions which can detect any degradation or interruption in the service in one route and, in that event, switch the service automatically to the alternative route. The resilience achievable is greater the shorter the segments in which the alternative fibre routes coincide in the same trench.

13.31 The MISBO market includes two technically different services:

- In the first, a CP installs WDM equipment at its customer's premises, allowing multiple services to be delivered using one pair of fibres; or
- In the second, a CP installs equipment that only allows a single service, usually based on Ethernet, to be delivered using one pair of fibres ('single-service Ethernet').

13.32 We found that CPs most often meet their customers' requirements for service bandwidths higher than 1Gbit/s by installing WDM equipment at the customer's premises and, much less often, with single-service Ethernet products. The WDM approach is more prevalent because it allows the CP to provide multiple services using one pair of fibres at the time of installation, and also to provide additional leased line services quickly and at low cost at any time subsequent to the initial installation, by adding service interface modules to the WDM equipment at both ends.

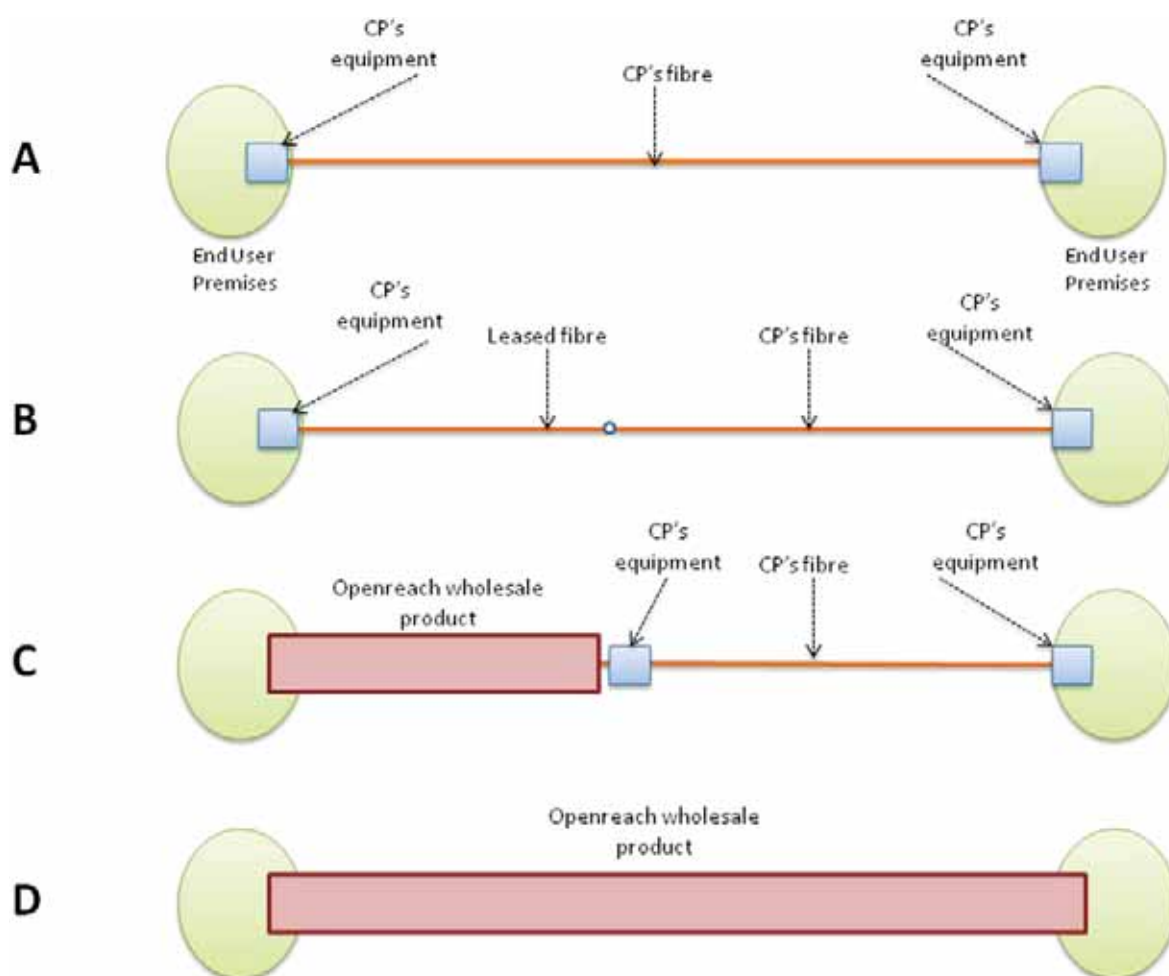
Models of competition in MISBO

13.33 In order to help assess appropriate remedies, we first identified different business models that could be used by BT's competitors. The models correspond to different levels of investment in infrastructure. We refer to these models later in this Section in analysing current competition and its potential future development and in discussing the forms of network access that BT would need to provide in order to support them.

13.34 A CP can compete to supply a retail service supported by wholesale MISBO products according to one of the following models:

- A. use its own equipment and fibre exclusively; or
- B. use its own equipment, and use fibre leased from another CP, either exclusively or in combination with its own fibre; or
- C. fulfil a segment of the route of the service with its own equipment and fibre, and connect them to Openreach wholesale products to fulfil the remaining segment or segments; or
- D. use an Openreach wholesale product exclusively, without using any of its own equipment or fibre.

Figure 13.2: Models of competition



- 13.35 A CP using Model A would typically provide two alternative fibre routes between the ends of the service in order to support resilience.
- 13.36 Such a CP might use Model B in order to achieve greater geographic coverage than it could achieve with Model A alone.
- 13.37 In principle, a CP could use Model C to fulfil services for which extending its own physical network would cost too much, take too long or be practically infeasible.
- 13.38 Model D can support competition in downstream markets by allowing a CP to provide services without investing in or using any of its own infrastructure, effectively reselling Openreach's end-to-end services to its retail customers.
- 13.39 Whereas Models A-C are consistent with promotion of competition in the wholesale MISBO market and in downstream markets, Model D is only consistent with promotion of competition in downstream markets. This is a key distinction in light of the principle we adopted in our Strategic Review of Telecommunications that regulation should promote competition at the deepest level of the infrastructure at which it is likely to be efficient and sustainable.¹¹⁹⁶

¹¹⁹⁶ See *Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002*, 22 September 2005, paragraph 3.14, at <http://stakeholders.ofcom.org.uk/binaries/consultations/752417/statement/statement.pdf>.

Prospects for and impediments to the development of effective competition

- 13.40 Model A is, in theory, potentially viable for any particular CP seeking to compete to deliver a downstream service if the value of that service is sufficiently high to offset the costs of any construction that may be required to connect its network to end-users' sites, taking into account the likely need for alternative fibre routes to support resilience.
- 13.41 Some other impediments may prevent a CP from using Model A even in situations where the value of the service potentially exceeds the likely costs of construction. The delay involved in construction may exceed the lead-time required by the end-user. Furthermore, construction may not be practically possible in some cases, for example if part of the route would need to traverse property whose landlord does not agree to a wayleave.
- 13.42 The need for a CP to invest in construction of physical infrastructure, including any required alternative routes, extending to both ends of each downstream service, presents high barriers both to the entry of any new competition based on Model A and, potentially, to the expansion of MISBO services provided by any CP which currently competes with BT using Model A outside the WECLA and the Hull Area.
- 13.43 The limited coverage outside the WECLA of the networks of companies which lease their fibre to CPs restricts the increase of geographic scope that use of Model B currently offers CPs over and above that of Model A.
- 13.44 Model C is potentially important to the prospects for competition because it can present lower inherent barriers than Models A and B to the entry and expansion of competitors which invest in infrastructure. CPs using Model C can concentrate their investment in physical networks mainly along trunk and backhaul routes, in which they can aggregate traffic from many services and share the costs of their core infrastructure among those services, while relying mainly on BT's ubiquitous network to provide access to each customer's site. Our policies are designed to support Model C in the cases of TI and AI services by ensuring that a CP can compete to supply end-to-end services which fall partly within and partly outside the area covered by its network by purchasing access segments from BT to combine with its own (competitively supplied) core network. Model C can also enable CPs to extend their investment in infrastructure progressively over time, and hence to extend further the scope of infrastructure competition, in line with our objectives.
- 13.45 In order to use Model C, a CP needs to be able to hand over traffic effectively from its core network to a BT access segment. BT's single-service Ethernet MISBO products enable CPs to do so currently. However, we understood that CPs have not so far used BT's WDM-based MISBO products to hand over traffic from their own networks to a material extent, and that the ability of BT's current WDM-based products to support effective hand-over from CPs' WDM equipment is at an early stage of development. We explained this further in the June BCMR Consultation and re-state this in the paragraphs that follow.
- 13.46 CPs can already deliver single-service Ethernet MISBO products using Model C, for which, in accordance with BT's Undertakings, Openreach provides the following products on the basis of EOI:
- EBD 10000;
 - WES 2500, BES 2500, BES Daisy Chain 2500; and

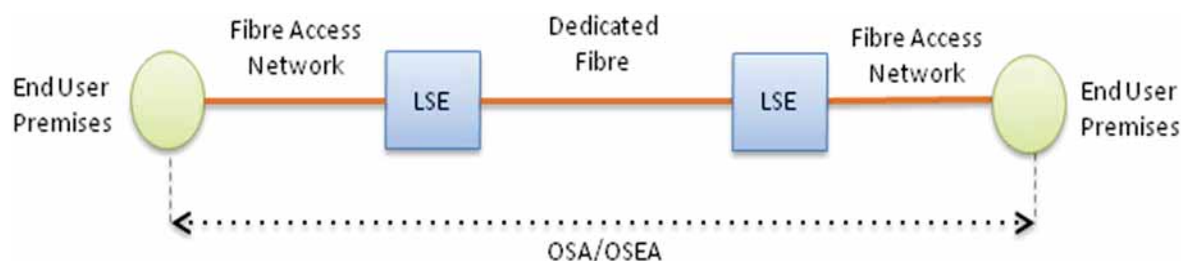
- WES 10000, BES 10000 and BES Daisy Chain 10000.

13.47 The industry's current ability to use Model C to deliver WDM-based MISBO products is less developed. Under the terms of BT's Undertakings, Openreach offers two wholesale leased lines services on the basis of EOI in which WDM equipment is located at the customer's premises:

- Optical Spectrum Access (OSA) for circuits with route distances no greater than 103km; and
- Optical Spectrum Extended Access (OSEA) for circuits of longer distances.

13.48 The most common use of OSA and OSEA is to provide end-to-end services, in accordance with Model D, as shown in the figure below.

Figure 13.3 Optical Spectrum Access and Optical Spectrum Extended Access



13.49 In principle, a CP could use OSA or OSEA to link an end-user site to its network node, and hence to provide a downstream service using Model C. In practice, however, interconnecting different networks' WDM-based leased lines services is currently uncommon, both because doing so can be costly and because available technology would not, at least until recently, have allowed the CP to assure reliability of the resulting service to the level often required by the end-user. To the extent that these limitations persist, CPs are not likely to use OSA or OSEA to provide services using Model C.

13.50 Pursuant to a commitment Openreach made to the industry, it has recently enhanced OSA and OSEA by providing interface options which comply with OTN technical standards.^{1197,1198} These standards are designed, among other things, to facilitate interconnection of different networks' WDM systems while supporting assurance of high reliability to the end-user.

13.51 We understand that Openreach launched OTN interface options for OSEA on 29 April 2011 and for OSA on 31 January 2012. Openreach's recent release of these interface options could therefore help support development of competition using Model C in WDM-based services.

13.52 However, the extent to which CPs will adopt Model C in future to deliver services with WDM equipment at customers' premises is not certain. Firstly, it is too early to assess how effectively Openreach's new OSA and OSEA variants will support competition based on Model C. Secondly, the extent to which CPs are likely in future

¹¹⁹⁷ The background to this commitment is described in Annex 10 of the June BCMR Consultation.

¹¹⁹⁸ ITU Standard G.709 is commonly called Optical Transport Network (OTN). It is defined as set of Optical Network Elements connected by optical fibre links, able to provide functionality of transport, multiplexing, switching, management, supervision and survivability of optical channels carrying client signals.

to aggregate traffic from MISBO services into shared trunk routes in their core infrastructure is not clear. Some CPs have contributed to Openreach's development of the OSA and OSEA variants which could support Model C, and this suggests that they may be considering using this model in future.

- 13.53 Openreach currently provides end-to-end services that support Model D, including WEES 2500 and WEES 10000 for single-service Ethernet applications, and OSA and OSEA for services delivered using WDM equipment at customers' premises.
- 13.54 While Model D supports competition in downstream markets, it offers more limited scope for competitive differentiation or for price competition than the other models because all CPs which use Model D in effect resell the same inputs which they purchase from Openreach.

Implications on our proposals for remedies for the MISBO market

- 13.55 We expected growth in demand for bandwidth from users of downstream services to continue in the next few years, and therefore considered that the demand for MISBO services was likely to increase significantly in that period.
- 13.56 We found provisionally that BT has SMP in MISBO services outside the WECLA and the Hull area. We also found that, nevertheless, BT's competitors provide MISBO services to several sites outside the WECLA using Models A and B, reflecting the relatively high value of the downstream retail services.
- 13.57 While we recognised the significant barriers to entry and expansion inherent in Models A and B, it is possible that continued increase in demand for very high bandwidth services will increase BT's competitors' incentives to use Models A and B. This could stimulate competition based on investment in infrastructure, particularly if new demand will be concentrated in geographic areas close to BT's competitors' networks. We promote competition at the deepest level at which it is economic, and therefore considered that any remedies we impose in the MISBO market should not diminish CPs' incentives to invest in infrastructure (using Models A and B) to provide MISBO services outside the WECLA where it is efficient.
- 13.58 We recognised that, in principle, Model B could increase the geographic scope of effective competition in the wholesale MISBO market beyond that possible with Model A. We understood that currently companies that are both able and willing to make dark fibre available to CPs do not have extensive coverage outside the WECLA area. We discussed in Section 8 of our June BCMR Consultation the case for requiring BT to provide access to its dark fibre or to its ducts and poles, and explained in that section why we currently do not propose to require BT to do so.
- 13.59 We proposed continuing to support Model D because we considered that it enables competition in downstream markets in situations in which other models are not effective. We considered, however, that this model is likely to limit the benefits that competition could deliver to consumers through differentiation of services or through pressure on upstream costs.
- 13.60 We considered that the prospects for competition in the wholesale MISBO market could improve to a material extent if Model C could become an effective way to deliver services with WDM equipment at customers' premises. This model would present inherently lower barriers to entry and expansion than Models A and B, and hence promote competition at the deepest level at which it is likely to be efficient and

sustainable, while providing CPs with more options to compete on price and service features than are possible with Model D.

- 13.61 However, noting that the extent to which CPs will adopt solutions based on Model C is uncertain, we recognised that it was possible that competition based on Model C could fail to develop effectively. In that case, we considered that the prospects for effective competition in the wholesale MISBO market were likely to be poor, and that there would be a greater risk that end-users and consumers could be exposed to excessive pricing.
- 13.62 Overall, the remedies that we proposed in the wholesale MISBO market, in our analysis, struck an appropriate balance between the following considerations:
- Maintaining CPs' incentives to invest on the basis of Models A and B;
 - Promoting greater competition by supporting effective development of Model C;
 - Ensuring that Model D is available to BT's competitors where other models are not likely to be effective; and
 - Protecting users from potential exploitation through excessive pricing.
- 13.63 The remedies we proposed below for the MISBO market were intended to secure the achievement of an appropriate balance between those considerations. In particular:
- in seeking to address BT's ability to refuse to supply, we proposed imposing, to the extent that it would be proportionate to do so, clear obligations on BT to provide specific forms of network access that support Model C and Model D; and
 - in seeking to address BT's incentives to charge excessive prices, we should bear in mind, among other things, the need to maintain CPs' incentives to invest on the basis of Models A and B and to promote their incentives to invest on the basis of Model C.
- 13.64 In light of the discussion above, we went on to assess the remedies which we considered are required to ensure CPs are able to obtain the forms of network access that support Models C and D, whilst maintaining their incentive to invest on the basis of Models A and B.

Addressing BT's ability to refuse to supply network access

- 13.65 In order to address BT's ability to refuse to supply network access to its competitors in the wholesale MISBO market we proposed (as set out below) that it should be subject to a general obligation to provide network access on reasonable request. In addition, we considered that clear obligations on BT to provide specific network access that support Model C and Model D would help promote competition.
- 13.66 It is noted that Openreach currently provides types of wholesale MISBO product, pursuant to BT's Undertakings, which support competition on the basis of Model C and Model D:
- Openreach currently provides single-service Ethernet MISBO products supporting Model C and Model D, specifically Openreach's current portfolio of single-service Ethernet products faster than 1Gbit/s includes disaggregated wholesale access and backhaul services as well as wholesale end-to-end

services. Since publishing our June BCMR Consultation, Openreach has announced its intention to withdraw from further new supply the 2.5Gbit/s and 10Gbit/s variants of the WES, WEES and BES products and also that Openreach has indicated that its OSA, OSEA and EBD products will meet the ongoing needs of its customers.¹¹⁹⁹

- Openreach currently provides OSA and OSEA, which support Model D for services delivered with WDM equipment at the customer's premises.

13.67 We considered it appropriate that these products continue to be provided pursuant to specific obligations, and this is what our proposals sought to achieve. In our view, the only way to achieve the aim of preventing refusal to supply (which would jeopardise Models C and D) was to impose a specific obligation on BT to supply, and we considered there is no less onerous way of doing so.

13.68 We noted that Openreach had recently launched variants of OSA and OSEA which sought to support Model C (in addition to the existing variants supporting Model D as noted above). It is too early to take a view about the extent to which CPs will adopt such variants or such other variants as may be developed.

13.69 Developments in WDM-based uses of Model C are at an early stage, and there is not yet a product which we can be confident supports Model C in this context. In the absence of clarity as to the specifications of an appropriate product, we considered that it would be premature to impose on BT an explicit requirement to provide such a product at this stage. We considered that we could not have confidence that it would achieve its aim, and that it could be more onerous than necessary.

13.70 However, in light of the potential for such products to improve the prospects of competition at a deep level in this market in the medium term, we said we would monitor Openreach's development of products which could support competition based on Model C in services delivered using WDM equipment in customers' premises. In addition, we said we would monitor CPs' adoption of solutions consistent with Model C for WDM-based services, including the number of relevant retail services delivered using Model C and the degree to which CPs adopt network architectures which aggregate traffic from services delivered with WDM equipment at customers' premises.

Addressing BT's ability to discriminate

13.71 We proposed to address BT's ability to discriminate, both in the prices it charges and in other ways, by imposing requirements designed to provide assurance that CPs and BT's downstream business will compete on a level playing field in providing services which use products in the wholesale MISBO market. We considered that requiring BT to provide network access on the basis of EOI could provide such assurance.

13.72 We considered that such a requirement was necessary to achieve the aim of addressing BT's ability to discriminate and noted that, at least to the extent that BT's services downstream of the wholesale MISBO market currently consume products provided by its Openreach division on the basis of EOI, was not likely to be more onerous than necessary to achieve that aim in the wholesale MISBO market because it would not require additional development costs to be incurred.

¹¹⁹⁹ As described by BT Openreach in a slide presented to the Ethernet product and commercial group in/or around August 2012.

- 13.73 We recognised however that, exceptionally, it may be onerous to require BT to consume an Openreach MISBO product on the basis of EOI in the case of some of the older leased lines of radial distance greater than 70km which it currently provides with WDM equipment at end-users' premises. We explained the background to the supply arrangements that have led to these exceptions in Annex 10 of the June BCMR Consultation.
- 13.74 In all other circumstances, we said we would expect BT to consume Openreach MISBO products on the basis of EOI in providing any downstream services, and to continue to do so as it develops its services, evolves its network and adopts new technology, unless we specifically direct otherwise.
- 13.75 However, EOI can have limited effect in cases where BT has no need to consume an upstream input needed by its competitors. We considered that such a case may arise in the development of competition based on Model C with WDM equipment at customers' premises. A CP providing such services and seeking to compete with BT using Model C would need a product from Openreach that would allow it to hand over traffic between its own network and BT's. The downstream businesses of BT, on the other hand, currently have no need to consume such a product from Openreach because they do not aggregate traffic from those services, and therefore do not need to hand over their traffic between different parts of BT's network.
- 13.76 BT's downstream businesses currently use Model D and consume Openreach's OSA and OSEA products. Openreach recently launched versions of OSA and OSEA with OTN interfaces which could allow CPs to hand over traffic to BT's network, and could support development of competition based on Model C. We noted that the two sets of variants of OSA and OSEA are likely to be very similar. We understood, for example, that they use the same WDM equipment and are distinguished from their Model D counterparts in that Openreach provides them with OTN interfaces rather than with end-user service interfaces such as Ethernet.
- 13.77 We proposed to address BT's ability to discriminate in relation to matters other than the price of these products by requiring BT to provide the Model C variants on the basis of EOI relative to their Model D counterparts in respect of every matter other than price. In addition, we proposed requiring BT not to discriminate unduly between the prices it charges for Model C and Model D variants. This means that the difference in price between Model C and Model D variants of the same product and of the same radial distance should be no greater¹²⁰⁰ than the difference between their long-run incremental costs, so as to incentivise a CP to choose the option which minimises overall costs, including its own costs. Since the benefits of the additional competition enabled by Model C would flow to all users of MISBO services, we also proposed that the development costs of the Model C variants should be recovered from all Openreach's MISBO services.

Protecting end-users from the risk of excessive charges – a price control on BT's single-service Ethernet MISBO products

- 13.78 Without some intervention on pricing, a dominant provider would have the ability to charge excessive prices in order to maximise profits by increasing its revenues. Excessive prices at the wholesale level could make it difficult for third party CPs to compete at the retail level with BT and, in the long term, may result in market exit. Unjustifiably high wholesale charges are also likely to result in high retail prices i.e.

¹²⁰⁰ We note that the incremental cost of the OTN interface needed for use with Model C is likely to be greater than that of the standard interface used with Model D.

consumers would be paying more for a service than they should expect if wholesale prices were constrained by effective competition.

- 13.79 Price controls which can take a number of forms (charge control, cost orientation, safeguard cap) are intended to ensure that dominant operators do not price excessively. At the same time, we recognised that the wholesale MISBO market is still relatively small and that the technology is likely to develop rapidly, and considered that we should be cautious in proposing price controls which could reduce incentives to innovate and to invest.
- 13.80 We proposed a price control limited in scope to single-service Ethernet products only, and excluding services delivered with WDM equipment at customers' premises. In our view, such a control would strike an appropriate balance between constraining BT's ability to charge high prices on the one hand and minimising the risk of harming competition on the other.
- 13.81 In our view, imposing no price control in the wholesale MISBO market would not be appropriate at present because the market power we considered that BT enjoys could allow it to charge excessive prices, which are likely to flow through to excessive charges to end-users. BT could also have relatively weak incentives to provide its products more efficiently without any price control.
- 13.82 Most MISBO products are currently delivered with WDM equipment at customers' premises. The technology and market for services delivered with WDM equipment at customers' premises are still developing rapidly, so imposing price controls directly on such services could be too intrusive and prove harmful. In particular, some CPs compete with BT in this market using and investing in their own infrastructure to deliver such services, and a direct control on BT's prices for such services may diminish CPs' incentives for further investment.
- 13.83 We considered that CPs competing with BT in the MISBO market are less likely to invest in extending their own infrastructure to deliver single-service Ethernet products than to deliver services with WDM at the customers' premises, because the latter can be expanded at low additional cost.
- 13.84 Although demand for single-service Ethernet products is likely to grow over the period covered by this review, the volume of those products is likely to continue to represent a relatively small proportion of the wholesale MISBO market. Nevertheless, providers of fixed and mobile broadband services are likely to use them increasingly as consumers' demand for bandwidth grows, so despite their relatively low volume, we considered that controlling BT's prices for them would be proportionate because those prices would flow through to the prices many consumers pay.
- 13.85 A price control on the single-service Ethernet MISBO products would constrain BT's ability to raise prices for those products and, in addition, may impose some constraint on its prices for the WDM MISBO products as well, because the two product sets are, to some extent, mutually substitutable by BT's customers.
- 13.86 In addition, we considered that the combination of the limited competition from other CPs to provide MISBO products with WDM at customers' premises and our proposed obligations requiring BT to publish a reference offer and to provide its products on the basis of EOI, together with the proposed price control on single-service Ethernet products, were likely to constrain BT's incentives to raise its prices for all MISBO products to an appropriate extent.

13.87 The July LLCC Consultation set out detailed proposals for the price controls.

Remedies proposed in the June BCMR Consultation

13.88 In light of all of the above, we then set out our assessment of the appropriate remedies for the wholesale MISBO market.

Competition Issues	Proposed remedies
<ul style="list-style-type: none"> Refusal to supply 	<ul style="list-style-type: none"> Requirement to provide network access on reasonable request, including (without prejudice to the generality of the network access requirement): <ul style="list-style-type: none"> disaggregated single-service Ethernet access and backhaul; end-to-end single-service Ethernet products end-to-end services with WDM equipment at the customer's premises
<ul style="list-style-type: none"> Price discrimination Non-price discrimination, e.g. different terms and conditions, delaying tactics (different delivery timescales for provision and fault repair); strategic design of products; exclusive dealing; quality discrimination; different SLAs and SLGs 	<ul style="list-style-type: none"> No undue discrimination in relation to the provision of network access. In addition, a requirement to provide all network access on the basis of Equivalence of Inputs (except for certain accommodation services and unless we consent) Rules governing response to requests for new network access Transparency, including <ul style="list-style-type: none"> Obligation to publish a reference offer Obligation to publish changes to charges and to terms and conditions Obligation to notify technical information Obligation to publish quality of service as required by Ofcom Obligation to publish regulatory accounting information
<ul style="list-style-type: none"> Excessive pricing Cross subsidisation 	<ul style="list-style-type: none"> Price control on single-service Ethernet products

Summary of the remedies proposed in the June BCMR Consultation

13.89 Below we summarise the key elements of our proposed remedies.

Requirement to provide network access

13.90 In proposing that BT be required to meet reasonable requests for network access, we aimed to address BT's incentive to deny such access to CPs seeking to deliver services in the MISBO market (outside the WECLA and the Hull area) and in related downstream markets.

13.91 We considered, in particular, that BT should also be subject to clear obligations to provide specific wholesale access products which support competition consistent with Model D noting that it is not clear whether OSA and OSEA variants support Model C effectively at this time.

13.92 We therefore proposed that BT should be obliged to provide wholesale Ethernet access, backhaul and short range end-to-end segments and WDM services delivered as end-to-end segments.

Non-discrimination and, unless we specifically direct otherwise, EOI

- 13.93 In proposing to require BT not to discriminate unduly we sought to address its ability to discriminate in favour of its own downstream businesses. Further, we proposed that BT be required to provide network access on an EOI basis in order to provide a high level of assurance that BT and its competitors compete fairly in markets downstream of the wholesale MISBO market.
- 13.94 However, we recognised that it may be onerous to require BT to provide certain long-distance WDM circuits on an EOI basis and proposed that we should be able to direct that particular circuits need not be provided on an EOI basis.
- 13.95 The proposed obligation not to discriminate unduly also applied to pricing discounts.

Transparency

- 13.96 In order to ensure BT is complying with obligations to provide network access and not to discriminate unduly, we proposed additional obligations related to ensuring transparency. Such obligations provide third parties with access to the information they need to make informed decisions about purchasing BT's wholesale products.
- 13.97 We considered it appropriate to propose the following transparency obligations on BT:
- requirement to publish a reference offer;
 - an obligation to give 28 days' notice of price reductions and to give 90 days' notice of all other changes to prices, terms and conditions for existing MISBO services;
 - an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new MISBO services;
 - a requirement to publish quality of service information;
 - a requirement to notify technical information with 90 days notice; and
 - obligations relating to requests for new network access.

Requests for new network access

- 13.98 In order to ensure that BT does not discriminate in favour of its own downstream businesses in relation to the handling of requests for new types of network access, we proposed obligations which include:
- a requirement for BT to publish reasonable guidelines specifying the required content and form of requests for new network access and how they will be handled;
 - a requirement for BT to provide sufficient technical information to CPs to allow them to draft product specifications that are efficient and which satisfy the reasonable requirements; and
 - timescales within which BT must acknowledge and process requests.

Price control on single-service Ethernet products

- 13.99 We proposed imposing a charge control condition on BT's single-service Ethernet MISBO products the purpose of which is to address BT's incentives to charge excessive prices.

Consultation responses and Ofcom's considerations

Consultation responses in relation to interconnection and accommodation services

- 13.100 BT considered that we had overstated the significance and relevance of a MISBO interconnection product (or lack of it) and argued that the absence of any apparent demand for any new form of interconnect product was consistent with competitive retail and wholesale markets.

Ofcom's considerations

- 13.101 We observed in our June BCMR Consultation that, whilst in principle a CP could use Openreach OSA or OSEA products to link an end-user site to its network node using the established interconnect services (CSH and IBH interconnection), interconnecting different networks' WDM-based leased line services was currently uncommon. We considered that the reason for this was that doing so was costly and would not, until the recent launch by Openreach of OTN interface options for OSA and OSEA, have allowed the CP to assure reliability of the resulting service to the level often demanded by consumers of high-bandwidth services. In relation to these matters, we considered it was too early to take a view on the development of a form competition in MISBO described as Model C.¹²⁰¹
- 13.102 We remain of the view set out in the June BCMR Consultation that given the potential for products like the OTN variants of OSA and OSEA to improve the prospects for competition at a deep level in MISBO markets, we will monitor Openreach's development of such products and the appetite of CPs to adopt these or other products which facilitate efficient and effective interconnection.
- 13.103 We set out our conclusions on whether BT should be required to provide specific types of interconnection services in Section 14.

Consultation responses in relation to a requirement to provide network access

- 13.104 BT argued that the evidence it had submitted to us showed that many of the MISBO circuits provided by Openreach are located at network nodes and not business customer sites. BT considered that this demonstrated that the current product set is being used as an access component within CPs' end-to-end solutions i.e. supporting the types of competition which we characterised as Models C and D.

Ofcom's considerations

- 13.105 We discuss BT's arguments regarding the classification of MISBO circuit end points in our consideration of volume shares estimates for MISBO services outside WECLA in Section 7 of this Statement.

¹²⁰¹ See paragraphs 13.33 to 13.39 above.

13.106 In reviewing our proposed MISBO network access remedies in light of BT's comments, we recognised that we needed to modify our proposed legal instrument in relation to both the definition of WDM Services and the specific form of WDM Services we intended to require BT to provide.

13.107 In the June BCMR Consultation we identified that demand for the very high bandwidths that can be delivered using MISBO products and, in particular, the scalability and flexibility afforded by WDM technology, finds application not just for end users (such as data-centres, large business ICT installations, the broadcasting industry and local and nation government) but also CPs' own networks¹²⁰². A number of respondents including CWW and TalkTalk noted that they expect growing CP demand for WDM based backhaul solutions at bandwidths of 1Gbit/s and above. While in our wholesale product market definition we defined the WDM services between customer premises, in the proposed definition and specific form of WDM services we inadvertently limited our definition of circuits to between end-user premises and where WDM is located at end-user premises.

13.108 The Act confers a specific meaning to "end-user"¹²⁰³ such that an end-user is not a communications provider. This is clearly not what we intended either by way of defining WDM Services or in relation to the specific form of WDM Services network access we require BT to provide by way of a remedy to its SMP in the wholesale MISBO market.

13.109 We have modified the definition of WDM Services in the legal instrument at Annex 7 as follows:

"WDM Services" mean services provided using wavelength division multiplexing equipment located at the customer's premises and which is capable of supporting multiple leased line services over a single fibre or pair of fibres.

13.110 In this definition we have replaced the term "end-user" with "customer" which is defined in section 405 of the Act as follows:

"customers", in relation to a communications provider or a person who makes an associated facility available, means the following (including any of them who use or potential use of the network, service or facility is for the purposes of, or in connection with, a business)

(a) the person to whom the network, service or facility is provided or made available in the course of any business carried on as such by the provider or person who makes it available;

¹²⁰² We also discussed, for example at paragraphs 12.41 to 12.49 of the June BCMR Consultation, the application of BT's current MISBO WDM products (OSA and OSEA) which Openreach currently provides (on an EOI basis) to its customers as end-to-end circuits between end-user or CP sites and in network ring and chain configurations. (See Openreach Optical Spectrum Services: A portfolio overview at <http://www.openreach.co.uk/orpg/home/products/opticalsolutions/downloads/OpticalSolutionsPortfoliooverview.pdf>.)

¹²⁰³ Under section 151 of the Act, "end-user", in relation to a public electronic communications services, means (a) a person who, other than as a communications provider, is a customer of the provider of that service; (b) a person who makes use of the service otherwise than as a communications provider; or (c) a person who may be authorised, by a person falling within paragraph (a), so to make use of the service.

(b) the persons to whom the communications provider or person making the facility available is seeking to secure that the network, service or facility is so provided or made available;

(c) the persons who wish to be so provided with the network or service, or to have the facility so made available, or who are likely to seek to become persons to whom the network, service or facility is so provided or made available.

13.111 In the June BCMR Consultation we proposed imposing a specific form of network access obligation on BT in respect of WDM Services limited to the provision of wholesale end-to-end segments i.e. a circuit from one end-user premise to another. This proposed obligation therefore did not extend to imposing a specific obligation on BT to also provide WDM services in the form of product, with WDM equipment located in CPs' premises, which could be purchased by CPs to provide scalable backhaul solutions notwithstanding that Openreach currently offers such a service in the form of its OSA/OSEA products to meet its customers' requirements.

13.112 The purpose of specifying particular forms of network access obligation (in addition to a general network access requirement) is to provide clarity as to those forms of network access which we consider must be provided by BT. In the absence of such a requirement we consider BT would have an incentive to withdraw or no longer supply and make different products available under the general requirement of network access. In the case of WDM services in particular, we consider the absence of a specific obligation to provide products for application as both wholesale end-to-end segments and backhaul segments could be both disruptive to industry and potentially detrimental to the development of competition in downstream markets.

13.113 In considering the practical form of a specific WDM backhaul requirement, we consider that it is appropriate, at this time, to adopt the same approach we have used in respect of the construction of specific requirements to provide disaggregated Ethernet Services. Our reasoning in this case is based on our understanding that CPs' requirements for a flexible and scalable backhaul product such as OSA, provides an alternative to the legacy high bandwidth product BES which is due to be withdrawn and an alternative to EBD which, by design, conforms to BT's network architecture providing connectivity between BT's ASNs and OHPs.

13.114 We have therefore modified SMP Condition 2 to require the specific provision of:

WDM Services which do not contain a Trunk Segment including the provision of the following services –

(i) Backhaul Segments;

(ii) Wholesale End-to-End Segments.

Consultation responses in relation to the withdrawal of WES, WEES and BES

13.115 Level 3 considered that BT's decision to announce the withdrawal from new service of WES, WEES and BES 2.5Gbit/s and 10Gbit/s raised significant questions as to the effectiveness of our proposed MISBO remedies. Level 3 asked us to consider requiring Openreach to continue to supply these products until a viable substitute is made available. It considered that a suitable form of substitute could be OSA with a single interface (including Resilient Option 2 scenarios) with chain configurations that would replicate a number of point to point single interface circuits and notes that

Openreach was proposing the use of OSA for CP backhaul between BT exchanges where EBD is not available.

Ofcom's considerations

13.116 We note that Openreach has announced its intention to withdraw from further new supply the 2.5Gbit/s and 10Gbit/s variants of the WES, WEES and BES products and also that Openreach has indicated that its OSA, OSEA and EBD products will meet the ongoing needs of its customers. It appears to us that single-interface OSA and OSEA products, which support services at 2.5Gbit/s and 10Gbit/s, would be a substitute for WES, WEES and BES as noted by some respondents¹²⁰⁴ to the June BCMR Consultation.

13.117 We consider concerns about whether the withdrawal from new service of these products impacts the effectiveness of our proposed charge control later in this Section.

Consultation responses in relation to non-discrimination obligations

Consultation responses in relation to the provision of MISBO services on an Equivalence of Input basis

13.118 Some respondents, such as CWW and Geo, specifically welcomed our proposal to impose a requirement on BT not to discriminate unduly in the provision of network access and, specifically, to require that MISBO services are supplied to competitors on an EOI basis. Most other OCPs did not make any specific comment.

13.119 BT did not disagree with the imposition of an obligation not to unduly discriminate, but strongly disagreed with our proposal to impose an EOI SMP remedy in any MISBO markets. In BT's view, the reasons it gave as to why it considered that we cannot justify the imposition of EOI for AISBO markets apply equally to the wholesale MISBO market.

13.120 In addition BT cited two further concerns about the imposition of an EOI obligation in the wholesale MISBO market:

- An EOI obligation would limit BT's flexibility to offer the tailored designs and complex features required by customers, thereby limiting its ability to compete effectively in the wholesale MISBO market.
- An EOI obligation would create uncertainty as to the internal consumption model that BT should adopt when supplying end-to-end MISBO services, in particular whether it should adopt a Model C or Model D configuration.

Ofcom's considerations

Our aims and conclusions relevant to the principle of proportionality

13.121 We recognise that an EOI obligation should be imposed only when the cost is proportionate. We have therefore carefully re-examined whether it would be proportionate to impose on BT an EOI obligation in the wholesale AISBO market in

¹²⁰⁴ Such as Exponential-e and Level 3.

the WECLA, the wholesale AISBO market outside the WECLA and the wholesale MISBO market outside the WECLA (together, the Relevant Modern Markets).

13.122 Our conclusion is that, in balancing the aim pursued in this regard, and set out below, with associated costs and benefits, the imposition of an EOI obligation for the provision of Ethernet and WDM-based services in these markets is the necessary form of non-discrimination obligation required to effectively address the relevant competition problems we have identified, in particular BT's ability and incentive to engage in discriminatory pricing and non-pricing practices in favour of its downstream divisions in the provision of services in the Relevant Modern Markets.

13.123 In reaching this conclusion, we have had regard to a number of relevant considerations looking at the characteristics specific to the provision of Ethernet and WDM-based services in the Relevant Modern Markets. Our considerations include not only the above-mentioned particular competition problems, but also the need to secure our duties to further the interests of citizens and consumers in these markets by promoting competition in respect of choice, price, quality of service and value for money. We are required, in particular, to secure the availability throughout the UK of a wide range of electronic communications services. This duty also means that the desirability of encouraging the availability and use of high speed data transfer services throughout the UK is a particularly important objective to bear in mind in relation to Ethernet and WDM-based services and the effectiveness of this non-discrimination remedy.

The importance of creating a level playing field on the related downstream retail markets to the Relevant Modern Markets

13.124 BT argues that we must be able to identify clearly the market failures which EOI is intended to address, and articulate why no lesser form of non-discrimination obligation will suffice.

13.125 First, for the reasons set out in Section 7, the thorough and overall analysis we have undertaken of the economic characteristics of each of these markets, based on existing market conditions, has led us to conclude that BT has SMP in the Relevant Modern Markets.

13.126 Secondly, the "market failures" to which BT refers, and which EOI is intended to address, arise as a result of the SMP in these wholesale markets and manifest themselves in the related downstream retail markets, as we explain below.

13.127 Leased lines are essential components for many downstream applications used by business customers. They also play an important role for CPs in delivering their own services to consumers, particularly as the majority of CPs remain reliant on BT's network in doing so. Specifically, Ethernet access and backhaul services are important inputs to major downstream retail markets which are important to the UK economy – including the market for fixed broadband services, the retail AI and MI leased lines markets and the mobile market.

13.128 By their nature, leased lines provide dedicated symmetric transmission capacity between fixed locations. The impact of any poor performance in developing, delivering, maintaining or repairing relevant products is therefore likely to be much larger than the price of the leased line itself, because of the detriments such failures are likely to have on downstream applications. Therefore, a buyer of a leased line is likely to choose a supplier that it is reliable in delivering them, for example, on time

(including for any repairs required), consistently at the quality needed, using reliable systems and scalable processes.

13.129 This issue is particularly significant for Ethernet and WDM-based services, because they are now preferred in most new installations for higher bandwidths and demands for such bandwidths are expected to grow in the future. The rapid growth in the wholesale AISBO and MISBO markets is a significant development since the 2007/8 Review.

13.130 Despite the rapid growth in the Relevant Modern Markets, our market analysis, in particular our SMP assessment, has shown that:

- in the wholesale AISBO market outside the WECLA, BT's market share has remained consistently large since 2007;¹²⁰⁵
- in the wholesale MISBO market outside the WECLA BT's market share is above 50%,¹²⁰⁶ and
- in the wholesale AISBO market in the WECLA, we have found that, despite significant volume growth, and whilst recognising the prospects for competition over the course of the three year review period are better than outside the WECLA, competitive conditions do not appear to have changed materially since the 2007/8 Review, with BT's market share remaining constant.¹²⁰⁷ We have found that the growth observed in certain OCPs' market share in the WECLA has come not at the expense of BT's market share but at the expense of other CPs'.

13.131 Our market analysis has also revealed that the Relevant Modern Markets are characterised by significant product development, and we do not consider this will change over the course of the forward-look review period. In this respect, we remain of the view expressed in the June BCMR Consultation that, in the absence of appropriate *ex ante* regulation, BT has the ability and incentive to favour meeting the requirements of its downstream divisions over those of other CPs in developing wholesale products. As a result, the products it provides to its downstream divisions may therefore be superior to those it provides to other CPs in respect of quality, performance and features, and may well involve superior processes and systems for their development, delivery, maintenance and repair. Equally, we remain of the view that BT has the ability and incentive to supply products with different levels of quality – e.g. different SLAs and SLGs, providing fault repair of products on different timescales, creating new variants to fulfil the requirements of its downstream division, prioritising the needs of its downstream divisions in developing improvements and enhancements, and taking longer to address, or avoiding addressing, the requirements of its competitors.

13.132 We consider such behaviour by BT could act as an impediment to improved products being made available equally promptly to both BT and OCPs and undermine a level playing field in the related downstream retail markets. The need for an effective non-discrimination remedy (as part of a wider package of remedies) to address the impact of BT's SMP in the Relevant Modern Markets downstream is crucial to maintaining a level playing field between BT's downstream businesses and CPs over the course of the forward-look period of our review.

¹²⁰⁵ Our base case market share estimate for BT is 73%.

¹²⁰⁶ Our base case market share estimate for BT is 57%.

¹²⁰⁷ Our base case market share estimate for BT is 49%, compared to 47% in the 2007/8 Review.

13.133 In this respect, Openreach Ethernet and WDM-based services are still subject to continuing product development and quality enhancements, and we consider EOI consumption provides the right incentives on BT to implement the changes and make better product variants available equally and simultaneously to both its downstream divisions and to its competitors.

The effectiveness of the remedy to achieve the aim of a level playing field

13.134 As part of our proportionality assessment, our first consideration is to determine what form the non-discrimination remedy should take to be effective in achieving our above-mentioned aim.

13.135 BT argues that the normal undue discrimination remedy will suffice. We disagree.

13.136 In our view, the normal undue discrimination remedy would, by its very nature, allow for certain discriminatory conduct – compliance with that obligation needs to establish in particular whether the discrimination in question is undue. However, whether the conduct in question is such as to amount to a breach of the undue discrimination obligation can only be determined on a case-by-case basis.¹²⁰⁸

13.137 Conversely, an EOI obligation removes any degree of discretion accorded to the nature of the conduct. The distinction between these two forms of non-discrimination is that, in the case of the former, both the ability and the incentive on the part of the SMP operator may still exist to engage in the relevant conduct – however, in the case of the latter, the ability is removed *ex ante* altogether.

13.138 For the remedy to be effective – with regard to both price and non-price aspects – in achieving our aim of a level playing field on the related downstream retail markets to the Relevant Modern Markets, we consider that an EOI obligation is required, in particular to:

- prevent BT from discriminating against OCPs in favour of its downstream divisions; and
- actively promote effective competition in the related downstream retail markets, by ensuring a level playing field in them on which OCPs can compete with BT.

13.139 In contrast, we consider that the normal undue discrimination remedy would not remove the ability and incentive on BT to discriminate against OCPs in favour of its downstream divisions, and so could undermine a level playing field in the related downstream retail markets on which OCPs can compete with BT. As such, we consider that there is no choice of remedy as effective as EOI because the normal undue discrimination remedy would not achieve this aim.

13.140 Consequently, contrary to BT's arguments, we consider our conclusion in this respect that there is a need for EOI, is based on an correct assessment of the distinction between what would be required of BT (as a vertically integrated operator) under a no undue discrimination obligation as compared with what would be required under an EOI obligation.

¹²⁰⁸ This includes instances where the conduct is presumed to be unduly discriminatory – e.g. volume discounts – since this is only a presumption. In this respect, see our interpretation of the application of the no-undue discrimination obligation in the relevant wholesale markets to volume discounts.

Our assessment of the effects on BT and in the Relevant Modern Markets in imposing an EOI obligation

- 13.141 BT argues we have had no, or insufficient, regard as to how the imposition of such an onerous obligation would impact on BT in relation to its position as one of a number of competitors in the Relevant Modern Markets which is, in its view, at the very least, prospectively competitive and where, again in BT's view, it is not an enduring monopolist (bottleneck) supplier.
- 13.142 We disagree. As summarised above, and as set out in more detail in Section 7, our SMP assessment has found that BT's position as BT puts it, as one of a number of competitors in the Relevant Modern Markets, is one of SMP.
- 13.143 In the wholesale AISBO market in the WECLA, in terms of our overall assessment of the prospects for competition in this market, we still expect demand to grow quickly during the review period, with growth likely to be focused on higher priced 100Mbit/s-1Gbit/s services. However, we do not believe that OCPs will be able to compete effectively across the WECLA over the course of the three year review period due to BT's incumbency advantages (which makes it difficult for OCPs to take business away from BT) and the fact that BT is more likely to have a connection (or be closer) to new customer-sites. In this respect, BT's position as, in its words, a bottleneck supplier has endured since the 2007/8 Review and, as a result, we are imposing a package of SMP remedies that we consider is appropriate to address the competition problems we have identified in this market such that, over medium to long-term, this market may achieve effective competition status. The imposition of EOI is part of this package of SMP remedies, and which, for the reasons set out here, we have concluded it is proportionate to impose.
- 13.144 Equally though, we have, contrary to BT's arguments, had regard to the prospectively competitive nature of the wholesale AISBO market in the WECLA in imposing our charge control remedy. In comparison to the charge control remedy we are imposing in the wholesale AISBO market outside the WECLA, this charge control remedy affords BT greater pricing flexibility.
- 13.145 In relation to BT's argument that we have not undertaken a balancing exercise of potential benefits on the downstream market versus potential disbenefits on the upstream market – e.g. the potential for such a remedy to increase barriers to entry or expansion for other competitors in the upstream market – we do not consider that such potential disbenefits to which BT refers, arise:
- we consider potential entrants or existing CPs in the Relevant Modern Markets will continue to invest in their infrastructure where they consider it economically efficient to do so, as evidenced by the extent of alternative infrastructure our market analysis has revealed in the WECLA. This has led us to conclude that, whilst BT will maintain a position of SMP in the wholesale AISBO market in the WECLA over the course of the three year review period, this market is prospectively competitive. In this respect, as noted in the June BCMR Consultation, due to the current requirements in the Undertakings, it is BT's current practice to supply services in the Relevant Modern Markets on an EOI basis.¹²⁰⁹ We do not consider EOI has adversely impacted upon OCPs' ability and incentive to expand through infrastructure-build, again, as evidenced by the extent of alternative infrastructure our market analysis has revealed in the

¹²⁰⁹ See paragraphs 11.143 and 12.67. At paragraph 12.67 we noted that "BT's services downstream of [the wholesale MISBO market] currently consume products provided by its Openreach division on the basis of EOI".

WECLA, and nor do we consider the impact will change over the course of the three year review period;

- equally, where it is not economically efficient to build alternative infrastructure, CPs can continue to rely on the general, and specific, network access requirement we are imposing on BT in order to compete;
- to the extent that the wholesale product BT is offering on an EOI basis may be the one 'favoured' by wholesale customers over products offered by its wholesale competitors, then we would regard that as a reflection of the characteristics of BT's product that better meet the requirements of those wholesale customers. In this respect it would be incumbent on BT's competitors to produce a more competitive solution, for example by offering more attractive prices. In the WECLA, we have recognised the greater potential for OCPs to do so over the course of the three year review period and, consequently, we have imposed on BT a less stringent charge control remedy. We consider this should result in more competitive prices at the wholesale level and ultimately benefit end-users in the form of choice and competition in the related downstream retail markets. Conversely, outside the WECLA, our market analysis, in particular our SMP assessment, has revealed this potential to be less. As a result, the emphasis is more on ensuring that the wholesale service OCPs rely on in these wholesale markets from BT is equivalent to the service provided to BT's downstream divisions such that again, end-users enjoy the same benefit in the form of choice and competition in the related downstream retail markets.

13.146 Furthermore, contrary to BT's suggestion, in reaching our proposal in the June BCMR Consultation that it was appropriate to impose EOI, we assessed whether the EOI obligation is necessary, in the sense that it is no more onerous than is required to achieve our aims, and we did not consider that it would have adverse effects which might be disproportionate to these aims.

13.147 We stated, in particular, that:

"...due to the current requirements in the Undertakings, it is BT's current practice to supply Ethernet access and backhaul circuits on an EOI basis by means of its access division Openreach. We therefore consider that imposing a very similar requirement in the market review would not be onerous as it would not require BT to re-engineer existing systems and processes."¹²¹⁰

13.148 In doing so, we had specific regard to the fact that BT's compliance costs would not outweigh potential significant competition benefits and the potential disbenefits on the downstream markets if this EOI obligation was not imposed. We remain of this view.

13.149 We have also taken utmost account of the BEREC Common Position. In relation to achieving the objective of a level playing field,¹²¹¹ the BEREC Common Position identifies, amongst other things, as best practice that:

¹²¹⁰ Paragraph 11.143 of the June BCMR Consultation. As noted above, due to the current requirements of the Undertakings, it is also BT's current practice to supply services in the wholesale MISBO market on an EOI basis.

¹²¹¹ In this respect, the BEREC Common Position identifies the following competition issues which arise frequently: SMP players having an unfair advantage; having unmatchable advantage, by virtue of their economies of scale and scope, especially if derived from a position of incumbency; discriminating in favour of their own group business (or between its own wholesale customers), either on price or non-price issues; exhibiting obstructive and foot-dragging behaviour.

“BP10 NRAs should impose an obligation on SMP operators requiring equivalence, and justify the exact form of it, in light of the competition problems they have identified.

BP10a NRAs are best placed to determine the exact application of the form of equivalence on a product-by-product basis. For example, a strict application of EOI is most likely to be justified in those cases where the incremental design and implementation costs of imposing it are very low (because equivalence can be built into the design of new processes) and for certain key legacy services (where the benefits are very high compared to the material costs of retro-fitting EOI into existing business processes. In other cases, EOO¹²¹² would still be a sufficient and proportionate approach to ensure non-discrimination (e.g. when the wholesale product already shares most of the infrastructure and services with the product used by the downstream arm of the SMP operator).”

13.150 We consider that our conclusion to impose an EOI obligation in the Relevant Modern Markets is consistent with that best practice. Our assessment is that this EOI obligation is proportionate when the combination of costs and benefits is balanced.

13.151 We have, however, decided to make some modifications of our proposal that appear to us appropriate to ensure that the EOI obligation does not produce any adverse effects which could be disproportionate to the aim we are pursuing of a level playing field in the related downstream retail markets on which OCPs can compete with BT. We discuss below the detail of our modifications, but we consider in particular that our clarification to exclude from the scope of the EOI obligation network access which BT is not providing on an EOI basis as at 31 March 2013 means that this obligation does not add any material compliance costs for BT.

BT's two further concerns

13.152 We do not consider that an EOI obligation should unduly limit BT's ability to offer tailored solutions in the wholesale MISBO market. Whilst we acknowledge that MISBO services can be complex, they are ultimately built from standard components. BT should be able to develop wholesale products that contain a sufficiently wide range of features and options to allow it to tailor solutions to meet customer requirements. An EOI requirement should not limit BT's flexibility in this respect, other than to require that it offer the same products to both internal and external wholesale customers.

13.153 It is not immediately apparent to us that the proposed EOI obligation gives rise to uncertainty about the appropriate consumption model that BT should adopt for end-to-end services. An EOI obligation requires BT to provide to other CPs that same product that it uses itself. Openreach currently supplies OSA and OSEA products on an EOI basis to BT's downstream divisions (e.g. BT Global Services) who sell end-to-end services such as Wavestream Connect and Wavestream Regional. We recognise that specific issues arise in respect of end-to-end services beyond 70km and, for reasons discussed below under the heading Wavestream National, have excluded long distance wholesale end-to-end services from the EOI obligation.

¹²¹² Equivalence Of Outputs (EOO).

Wording of the EOI SMP condition

13.154 BT also raised concerns about the wording of the EOI obligation which generally followed the wording of the EOI obligation in the Undertakings but which omitted a list of exclusions included in the Undertakings version. In BT's view this list should be added to the condition if Ofcom decided to confirm its proposals.

Ofcom's considerations

13.155 BT's comments about the wording of the EOI obligation and our consideration of them are the same as for the wholesale AISBO markets. We set out both in Section 12. In summary we have decided to modify the condition as BT suggests.

Scope of the EOI SMP condition

13.156 Openreach wrote to us on 7 December 2012¹²¹³ raising concerns about the scope of the proposed EOI SMP obligation that in its view might be wider than envisaged by Ofcom in the June BCMR Consultation. We set out those concerns in Section 12.

Ofcom's considerations

13.157 In deciding to impose an SMP condition on BT to provide network access on an EOI basis in respect of the wholesale MISBO market in this review, it is not our intention to retrospectively apply EOI to elements of BT's existing network above and beyond that which is currently provided for by reference to the EOI requirements set out in BT's Undertakings. Such a requirement would, in our view, be disproportionate since it would involve BT identifying and re-engineering existing network infrastructure which has been built in a manner broadly reflective of the EOI obligations now proposed. We have therefore modified SMP condition 4 to clarify the scope of the EOI obligation such that the obligation does not apply to such network access which BT was not providing on an EOI basis as at 31 March 2013.

13.158 SMP condition 4 (see Annex 7) makes specific provision for Ofcom to consent in writing to exclusions from the EOI requirement. We have also modified the SMP conditions at Annex 7 to exclude those connections between BT's OHPs, which are not Terminating Segments, from an obligation to provide these connections on an EOI basis under SMP Condition 4.

Consultation responses in relation to Wavestream National

13.159 BT and Geo commented on our proposal that BT should not be required to consume Openreach WDM products on the basis of EOI for circuits with a radial distance of greater than 70km. Geo considered that an EOI obligation should apply to BT's Wavestream National retail product (the relevant BT retail product) either by means of an SMP condition or the Undertakings. BT sought clarification about the impact of our proposals on its Wavestream National product. In particular:

- BT asked us to clarify the scope of the obligation in view of the fact that the draft legal instrument indicated that circuits provided after an unspecified date would need to be provided on an EOI basis. However, no such limitation had been discussed in the consultation.

¹²¹³ BT Openreach letter to Ofcom dated 7 December 2012 entitled "Proposed SMP EOI conditions – impact on Core Networks".

- BT asked about our plans for the exemption to the Undertakings for Wavestream National services in light of our proposals.

13.160 BT was concerned that legal uncertainty could arise as we had used different terms in the draft SMP condition and the Undertakings exemption even though in practice both relate to same Wavestream National products.

Ofcom's considerations

13.161 We understand that Wavestream National is the only retail WDM product that BT currently provides for straight line distances over 70km so in practice, the proposed exclusion would apply to the same services as the Wavestream National exemption that we agreed in 2010.¹²¹⁴

13.162 Having reviewed the circumstances surrounding Wavestream National we conclude that imposing an EOI obligation would not be proportionate at this time given the size of the installed base of these products.¹²¹⁵ We have therefore decided not to specify a date after which WDM services with a straight line distance over 70km must be provided on the basis of EOI.

13.163 We think it unlikely that any legal uncertainty would arise between the two obligations. We therefore intend to retain the wording proposed in the June BCMR Consultation other than to remove the reference to the provision date.

13.164 For the avoidance of doubt, we are now imposing a wholesale MISBO access remedy which requires BT to provide on the basis of EOI WDM services delivered as wholesale end-to-end segments from one end-user premise to another or as a backhaul segment from one customer premise to another. We have decided, for the reasons given above, to exclude such wholesale end-to-end segments with a straight line distance of more than 70km from EOI. However, BT is required to provide, on reasonable request, wholesale WDM services with a straight line distance of more than 70km subject to the no-undue discrimination requirement.

Review of the Wavestream National Exemption

13.165 When the current Undertakings exemption agreement was agreed in December 2010, we said that the exemption may be subject to review following the next business connectivity market review. Given that our conclusion is to exclude these services from EOI under the SMP framework, we do not consider it necessary to review the exemption from EOI under the Undertakings covering the same services. In the event that we subsequently find evidence that causes us to reach a different view in relation to the continuation of this exclusion, then we may be minded to remove or modify the exclusion.

Volume discounts

13.166 BT did not agree with our view that volume discounts would likely constitute undue discrimination referring, as it did for AISBO, that a number of players are able to win

¹²¹⁴ Exemption from BT's Undertakings under the Enterprise Act 2002 related to Wavestream National, Statement dated 14 December 2010 published at <http://stakeholders.ofcom.org.uk/binaries/consultations/bt-wavestream/statement/wavestream-statement.pdf>

¹²¹⁵ In addition to our market analysis we requested, and BT provided on a confidential basis, details of the size, demand and value of its WN installed base. [§<]

and place large orders for MISBO circuits, not just BT's downstream divisions. BT argued that, as with geographic and term discounts, volume discounts may or may not be unduly discriminatory depending on the circumstances. BT considered that preventing Openreach from offering volume discounts in the MISBO market would stifle its ability to compete with other large CPs who often win large scale contracts from customers.

Ofcom's considerations

13.167 We consider that the distinctions we set out in our June BCMR Consultation, in respect of our position on the application of the requirement not to discriminate unduly to different forms of pricing discounts, remain appropriate. We consider volume discounts would very often in practice constitute undue discrimination, whereas geographic or term discounts may or may not be unduly discriminatory depending on the circumstances. We consider that there is a strong potential for anti-competitive effects to arise where BT's downstream divisions remain the largest purchasers of Openreach services and are therefore likely to be the largest beneficiaries of a volume discount scheme. We therefore consider that BT's observation that other CPs, and not just its own downstream divisions, could benefit from volume discounts does not diminish the validity of the basis for our rebuttable presumption.

13.168 With regard to BT's comments regarding the hindrance BT faces by not being permitted to offer volume discounts, we consider that it would be a matter for us to determine whether any volume discounts provided by BT were unduly discriminatory depending on the circumstances. It is not therefore necessarily the case that BT is prevented from offering volume discounts in all instances. In addition, BT can compete by making other tariff reductions, which do not feature volume discounts, including reductions in standard prices, geographic and term discounts. However, in all cases, the onus rests with BT to comply with its regulatory obligations including the obligation not to discriminate unduly and, in this case, in relation to different forms of pricing discounts.

Consultation responses in relation to transparency

Consultation responses in relation to the notification period

13.169 BT supported the proposal to reduce the notification period for price reductions to 28 days but considered that all changes to terms, conditions and prices should only require 28 days notice. It viewed this to be especially important for the MISBO market as price publication requirements need to be flexible in such dynamic product/technology areas to avoid constraining innovation. BT also said that we should clarify that price increases following a price reduction (i.e. back up to the original price or lower) should only require 28 days notice.

Ofcom's considerations

13.170 In the June BCMR Consultation we carefully considered, amongst other things, the case for reducing the notification period for changes to services at the wholesale level in the rapidly developing MISBO markets. We considered that a shorter 28 day notice period was appropriate in respect of prices, terms and conditions relating to new service introductions and for price reductions and associated conditions (for example, conditions applied to special offers). However, we remain of the view that, on balance, for all other changes to prices, terms and conditions for wholesale MISBO services 90 days notice is an appropriate notification period for existing

products and services which allows sufficient time for downstream providers to make necessary changes to their downstream products and services.

13.171 The price publication obligations complement the no undue discrimination obligations and help protect CPs against unfair pricing and conditions. Whilst we acknowledge BT's comments about innovation in MISBO markets, we remain of the view that in this wholesale market, the benefits of a 90 day notice period (other than those circumstances in which we have specifically concluded that a shorter period is appropriate) is an appropriate remedy to assist competition where we have found BT to have SMP.

13.172 We confirm that the 28 day notice period will apply to special offers by which we mean price notifications that specify a limited term price reduction and where the price immediately following the special offer is no higher than immediately before the special offer commenced. We have re-worded Condition 7.4 to clarify this.

Consultation responses about notification requirements

13.173 In Section 11 we discuss BT's comments about the notification requirements in Conditions 7 and 9 in relation to the wholesale TI markets. Given Conditions 7 and 9 also apply to the wholesale MISBO market, BT's comments and our consideration of them in relation to the wholesale TI markets apply equally in relation to the wholesale MISBO market.

Consultation responses in relation to inclusion of usage factors in ACCNs

13.174 In Section 11 we discuss BT's comments about the content of Access Charge Change Notices in Condition 7.5. Given Condition 7 also applies in the wholesale MISBO market, BT's comments and our consideration of them in relation to the wholesale TI markets apply equally in relation to the wholesale MISBO market.

Consultation responses in relation to requests for new network access

13.175 BT considered that its comments about the new network access obligations for the wholesale AISBO markets were also relevant to the wholesale MISBO markets.

Ofcom's considerations

13.176 BT's comments about these obligations and our considerations of them are the same as for the wholesale AISBO markets and are set out in Section 12.

Consultation responses in relation to Condition 10

13.177 In Section 11 we discuss BT's proposed changes to the new network access obligations in Condition 10. Given Condition 10 also applies in the wholesale MISBO market, BT's comments and our consideration of them in relation to the wholesale TI markets apply equally in relation to the wholesale MISBO market.

Consultation responses in relation to a charge control on single-service Ethernet MISBO products

13.178 Stakeholders' responses ranged from those that argued for a light touch approach of having no price control on MISBO products but relying instead on a no-undue discrimination requirement (as BT suggests) or a requirement that charges are fair and reasonable as proposed by Virgin, through to those from Colt, Telefónica and

Level 3 who disagreed with our proposal to exclude WDM services from the price control. UKCTA argued that, absent a price control to provide price certainty, we should rely on cost orientation obligations.

- 13.179 BT strongly supported our proposal not to impose cost orientation but argued that, for services moving from unregulated to regulated, it was premature to impose any form of price control at this stage in the market's development. BT did not agree with our proposal to apply a charge control to single-service Ethernet products and considered this to be unjustified, unnecessary and potentially damaging. BT argued that such a control would inevitably act as a direct constraint on WDM prices and discourage investment and innovation in this area.
- 13.180 BT agreed with us that for high bandwidth MISBO the market is relatively small and the technology used is developing rapidly and that we should be cautious about proposing controls which risk reducing investment and innovation. BT also agreed that WDM services make up the largest product set in the market and that imposing controls directly on those services could be too intrusive and harmful. But, BT argued that the same risk would apply to the technologically and functionally substitutable¹²¹⁶, but lesser used, 1Gbit/s single service Ethernet, product set. BT argued that if we conclude that it has SMP in some geographies for MISBO, it would be appropriate to rely on the non-discrimination obligation (subject to its comments on EOI).
- 13.181 Virgin did not support the imposition of a charge control in the wholesale MISBO market, arguing that it would be inconsistent with our objective of maintaining infrastructure investment incentives. It disagreed with our view that the proposed charge control (on single service Ethernet products) would be a cautious approach. It considered that the charge control would place an indirect constraint on BT's wholesale WDM charges and as a result have a significant adverse effect on its ability to compete and invest in high bandwidth technologies. In its view the charge control would be wholly disproportionate and it would have an adverse effect on the wholesale MISBO market and would not be consistent with the provisions of section 88 of the Act. It considered that we should adopt a more cautious approach in the first instance. It considered that a proportionate intervention would be to apply only general remedies and extend the scope of the network access obligation to require BT to have fair and reasonable charges.
- 13.182 Virgin was also concerned that controlling only the prices of single service Ethernet products would give BT an incentive to manage its MISBO services so as to diminish the effect of the charge control. This could artificially reduce demand and or supply of single service high bandwidth Ethernet in favour of WDM alternatives which could disadvantage both competing network providers and consumers (both wholesale and retail). Not imposing a control on certain products would remove the risk of such a distortion occurring.
- 13.183 Sky and UKCTA were concerned about potential confusion in our provisional conclusion that WDM services will not be subject to a charge control, whereas SMP Condition 5.3 lists EBD services that are based on WDM technology. Sky and UKCTA both recommended that we make it clear in our final statement and legal instrument, that EBD is a single-service Ethernet product and is intended to be included within the Ethernet charge control.

¹²¹⁶ BT observed that Openreach has launched OTN interface options for WDM services which should allow the effective use of these products under model C.

- 13.184 Whereas Colt, in general, welcomed our decision to define wholesale MISBO markets, it strongly disagreed with our proposal to exclude WDM from any price control. Colt suggested that our reason for not doing so was because WDM is a new technology. Colts argued that WDM is a mainstream technology which has been in widespread use for years.
- 13.185 Exponential-e welcomed our proposal to apply a charge control to single-service Ethernet above 1Gbit/s, but it was concerned that it might not be effective. Openreach could, in the light of its announced withdrawal of its legacy higher bandwidth WES and BES products, choose not to supply a single service OSA solution or argue that OSA based solution as multi-interface capable in order to circumvent the obligations around provision and price control.
- 13.186 Level 3 noted that whilst single interface remedies afford some comfort, it was disappointed that we had not fully considered the need to impose a full set of remedies to ensure full equivalence with BT's own downstream business which Level 3 understood currently use WDM technology. Level 3 was also concerned that the wording of the proposed remedy was insufficiently tight and that OSA could evade the provisions. It was particularly concerned about the risks that the remedy could prove ineffective given the uncertainty resulting from BT's intention to withdraw WES, WEES and BES 2.5Gbit/s and 10Gbit/s products.
- 13.187 Telefónica was concerned that we had proposed leaving WDM circuits out of price regulation. It considered that WDM affords greater flexibility of wholesale service supporting multi-providers/multi-services over the same circuit and appeared to offer increasing opportunities to support network architecture and build strategies emerging in the mobile sector.
- 13.188 UKCTA noted that we had found BT to have SMP in the wholesale MISBO market but relied solely on the obligation of EOI in relation to the pricing of these services¹²¹⁷. Given the importance we had placed on the need for price certainty and how the charge controls for TI and AI may address this need, UKCTA considered that it would expect MISBO services to be subject to controls that would provide price certainty. In the absence of a charge control UKCTA proposed that we rely upon cost orientation obligations.

Ofcom's considerations

- 13.189 As set out above, as a result of our market analysis, in particular our SMP assessment, one of the competition problems we have identified in the wholesale MISBO market is the risk of excessive pricing.
- 13.190 Our proposal to address this competition problem in the June BCMR Consultation sought to strike an appropriate balance between, on the one hand, constraining BT's ability to charge excessively and, on the other hand, the risk of imposing a charge control remedy which could reduce incentives to innovate and invest in what is currently a relatively small market in which technology is developing rapidly. We considered that imposing a charge control confined to single-service Ethernet MISBO products, and not to products delivered as optical services with WDM equipment at

¹²¹⁷ We note that whereas on page 12 of UKCTA's response to the June BCMR Consultation it argues that we rely solely on an EOI obligation with regard to the pricing of MISBO services; on page 13 UKCTA observes that in relation to the proposed MISBO remedies we propose introducing a charge control on single-service Ethernet products.

customers' premises, would strike such an appropriate balance, noting that the two sets of products were, to some extent, mutually substitutable by BT's customers.

13.191 We do not agree with BT that reliance on EOI alone would be sufficient to address the risk of excessive pricing. We are imposing EOI to address the risk of BT engaging in discriminatory practices, not to regulate the maximum equivalent level at which it would be obliged to charge (as a result of the EOI obligation), both its wholesale division and OCPs. In this respect, our view in the June BCMR Consultation that it would be inappropriate not to impose a charge control was "because the market power we currently consider BT enjoys (the existence of which our SMP assessment in the wholesale MISBO market in this Statement has subsequently confirmed) could allow it to charge excessive prices, which are likely to flow through to excessive charges to end-users."¹²¹⁸ Equally, we consider that the effect of BT charging equivalently high prices to both its wholesale division and OCPs would be adverse consequences for end-users in the form of high prices in the related downstream retail markets.

13.192 We agree with Virgin that imposing a charge control on single service Ethernet products will impose some constraint BT's prices for WDM MISBO services – indeed in the June BCMR Consultation we stated that "a price control on the single-service Ethernet products would constrain BT's ability to raise prices for those products and, in addition, may impose some constraint in its prices for WDM MISBO products as well, because the two products sets are, to some extent, mutually substitutable by BT's customers".¹²¹⁹ However, we do not agree that in doing so we have undermined CPs' incentives to invest in their own infrastructure to deliver WDM MISBO services. In this respect, we took this incentive into account in reaching our proposed charge control remedy. In the June BCMR Consultation we noted that "[m]ost MISBO products are currently delivered with WDM equipment at customers' premises. The technology and market for services delivered with WDM equipment at customers' premises are still developing rapidly, so imposing price controls directly on such services could be too intrusive and prove harmful. In particular, some CPs compete with BT in this market using and investing in their own infrastructure to deliver such services, and a direct control on BT's prices for such services may diminish CPs' incentives for further investment".¹²²⁰

13.193 We remain of the view that the charge control on single-service Ethernet MISBO services will not unduly constrain WDM MISBO prices such that other CPs' incentives to invest in high bandwidth services are damaged:

- as recognised in the June BCMR Consultation, WDM and single-service Ethernet MISBO products are, to some extent, substitutable by BT's customers. However, at the same time, single-service Ethernet lacks the scalability of WDM (in terms of support for multiple channels and rapid deployment of additional channels) and also its flexibility in terms of the interfaces supported (WDM supports a wide variety of interfaces including specialised interfaces such as FICON);
- BT's single-service Ethernet MISBO products do not currently constrain the price of WDM purchases where bandwidths in excess of 10Gbit/s are required and nor do we consider they will do so over the three year review period. In this respect

¹²¹⁸ See paragraph 12.76.

¹²¹⁹ See paragraph 12.80.

¹²²⁰ See paragraph 12.77.

we note our market analysis¹²²¹ has shown that BT's WDM services have a significant price advantage over its single-service Ethernet MISBO products where there is demand for bandwidth greater than 10Gbit/s. This price differential reflects an underlying cost differential. In this respect, the charge control for single-service Ethernet MISBO services reflects the costs of BT's WES, BES and WEES services which are now approaching the end of their life and have higher costs than current generation product WDM products.

13.194 Consequently, we consider the charge control for single-service Ethernet MISBO services:

- promotes efficiency in that it provides signals for efficient investment in infrastructure;
- promotes sustainable competition in that it provides economic signals for efficient investment in infrastructure to support MISBO services; and
- confers the greatest possible benefits on end-users in that, in our view, the charge control remedy achieves the appropriate balance between ensuring prices for services in the MISBO market are not excessive, whilst also recognising the benefits of OCPs' continued investment in their own infrastructure to deliver WDM services which should translate into greater retail competition and choice for the end-user.

13.195 Further, we do not agree with Virgin that reliance on the obligation to provide general network access on, amongst other things, fair and reasonable charges would be sufficient to address the risk of excessive pricing. As set out at the beginning of this Section, we have decided to broaden the scope of the obligation requiring the provision of network access by BT to be on fair and reasonable terms and conditions, to include fair and reasonable charges.¹²²²

13.196 However, we remain of the view that the charge control remedy we are imposing is the most appropriate remedy to address the competition problem we have identified in the wholesale MISBO market of excessive pricing. In this respect, in all the relevant wholesale markets in which we have identified excessive pricing as a competition problem, we have imposed a charge control to address this. The details of the charge control we are imposing on single-service Ethernet MISBO products are set out in Section 20. We consider that the obligation to provide general network access on, amongst other things, fair and reasonable charges would serve as a weaker, and less certain, constraint by comparison to the charge control remedy to address the risk of excessive pricing.¹²²³

13.197 Nor do we agree with Virgin's, and CPs' general, concern that a charge control on single-service Ethernet products will incentivise BT to manage its MISBO services so as to reduce the effectiveness of the charge control (and thereby serve to artificially reduce demand and or supply of single-service high bandwidth Ethernet in favour of WDM alternatives).

¹²²¹ See, in particular, Section 3.

¹²²² See Section 9.

¹²²³ As noted in Section 9, the inclusion of charges within the scope of the fair and reasonable obligation is not intended to impose any additional constraint on the maximum charges that BT may levy, such as a lower ceiling than that permitted by the charge controls.

13.198 We consider that BT is obliged to provide 2.5Gbit/s and 10Gbit/s single-service Ethernet products on reasonable request. BT has flexibility to decide how it provides these regulated services. However, should it choose to withdraw the existing WES, WEES and BES 2.5Gbit/s and 10Gbit/s products during the period of the charge control the replacement products will be subject to the charge control since our charge controls provide that services that substitute wholly or substantially existing services in a charge control basket are added to that basket. We understand that BT's intention is that future demand for such services will be fulfilled with the OSA/OSEA products in single channel configuration. We consider that were BT to adopt this approach such single channel variants would be subject to the Ethernet charge control. Thus BT would not be able to reduce the effectiveness of the charge control by replacing Ethernet services such as WES and BES with WDM services.

13.199 We further confirm that EBD is a single-service Ethernet product within the scope of the charge control.

Consultation responses in relation to the practical implementation of remedies across separate MI markets

13.200 Similar to AISBO, BT considered that we should address the issue of how to treat circuits crossing geographic market boundaries by identifying two separate types of obligation for terminating segments and wholesale end-to-end services respectively.

13.201 For circuits between an end-user site and a CP's site, BT argued that the relevant geographic market should be determined by the location of the end-user. In other words, a service to an end-user's site in the WECLA should be entirely subject to the regulatory constraint appropriate to the WECLA irrespective of where the serving CP's site is located. BT argued that the same would be true for MISBO circuits used for backhaul where a remote BT exchange is connected to a CP's core site. BT said that there was no need for us to rely on an overly simplistic "circuit is in the WECLA if both ends are in the WECLA" method.

13.202 For wholesale end-to-end services, BT agreed with our proposal that price components specific to each end should be treated within the geographic market relevant to each end, and that the non-location-specific price elements should be treated according to the regulation applying outside of the WECLA.

13.203 Level 3 was concerned that the wording of the proposed remedy in relation to circuits between WECLA and non-WECLA destinations raised questions of interpretation and invited us to ensure that the final wording of the relevant SMP condition is absolutely clear and explicit.

13.204 UKCTA understood that we proposed that BT is obliged to provide MISBO circuits with one circuit end within the WECLA area. Like Level 3, UKCTA also considered that the detail of this requires clear specification within the SMP obligation and did not believe that this requirement is clear from the SMP conditions we proposed.

Ofcom's considerations

13.205 Having considered BT's comments, we believe that the classification proposed by BT is more consistent with our view of competitive conditions in the WECLA for Ethernet circuits than the approach we proposed in the June BCMR Consultation. In particular, CPs should be able to establish network nodes within the WECLA and serve sites within the WECLA from them. We have therefore decided that this classification should apply.

13.206 On reflection we also think that it would be more straightforward to classify end-to-end circuits as a whole rather than by components. Thus wholesale MISBO circuits that cross the WECLA boundary should be classified as follows:

- Wholesale end to end MISBO services (i.e. circuits between two end-user sites) – should be classified as inside the WECLA only if both end-users sites are in the WECLA and other circuits should be classified as outside the WECLA (i.e. if one or more sites are outside the WECLA); and
- Other wholesale MISBO services (i.e. circuits between an end-user site and a network node or between network nodes) – should be classified as being in the WECLA if the end-user site is within the WECLA or in the case of backhaul circuits if the remote end of a backhaul circuit is within the WECLA.

13.207 We consider that the guidance we have provided in relation to this matter is sufficiently clear for the purposes for which it is intended and that it is not necessary to make this explicit on the face of the SMP Conditions as Level 3 appears to suggest.

Ofcom's conclusions on the appropriate remedies

13.208 In order to address the competition problems we have identified in the wholesale MISBO market, we have concluded it is appropriate to:

- adopt the remedies proposed in the June and November¹²²⁴ BCMR Consultations; and
- to broaden the scope of the obligation requiring the provision of network access by BT to be on fair and reasonable terms and conditions, to include also fair and reasonable charges.

13.209 Our conclusions are the result of our cumulative consideration of:

- our assessment of the appropriate remedies, as set out in the June BCMR Consultation and set out above;
- our considerations of consultation responses; and
- all the evidence available to us.

13.210 Below we set out:

- the aim of the remedies that we have concluded should be imposed on BT in the wholesale MISBO market;
- the obligations imposed on BT by the remedies; and
- the reasons why we consider the remedies comply with the relevant legal tests in the Act.

13.211 The SMP conditions which give effect to our conclusions are set out in Annex 7.

¹²²⁴ Our conclusions regarding accounting separation and cost accounting, together with our considerations of responses received, are set out in Section 16.

Interconnection and accommodation services

13.212 In order to use the wholesale MISBO services that BT provides in these markets CPs also require certain interconnection and accommodation services. To achieve an overall solution we consider that it is necessary to regulate the provision of these ancillary services,¹²²⁵ in the absence of which, we consider BT would have an incentive to refuse to supply or to supply in a discriminatory manner, for example by charging excessive prices.

13.213 Network access is defined in sections 151(3) and (4) of the Act and includes interconnection services and/or any services or facilities that would enable another CP to provide electronic communications services or electronic communication networks. We consider that a requirement to provide network access would, therefore, include any ancillary services as may be reasonably necessary for a Third Party to use the services. Consequently, each of the obligations that we impose on BT (set out below) for these markets also applies to the provision of accommodation and interconnection services that are reasonably required by CPs in connection with the provision of the regulated services.

13.214 In Section 14 we set our conclusions on whether BT should be required to provide specific types of interconnection services.

Requirement to provide network access

Aim of regulation

General requirement to provide network access

13.215 We have concluded it is appropriate to impose a requirement for BT to meet reasonable requests for network access.

13.216 We consider that, in the absence of the nature of the network access obligation we are imposing, BT would have the ability and incentive to refuse to provide network access or to supply on such terms that amount to a refusal to supply, which would otherwise prevent or restrict competition in the wholesale MISBO markets and enable BT to monopolise the provision of services in the related downstream retail markets.¹²²⁶

13.217 Further, in light of consultation responses, which we set out together with our considerations of those responses and our reasons in Section 9, we have concluded that the scope of the fair and reasonable obligation according to which BT must provide network access, should be broadened to include fair and reasonable charges.¹²²⁷

13.218 The way in which Ofcom might assess reasonable demands for access is set out in the Access Guidelines. We consider that it is appropriate in cases where a CP has SMP to impose an access obligation on that provider requiring it to meet all reasonable requests for network access within the relevant wholesale market,

¹²²⁵ This is consistent with the BEREC Common Position **BP7** in relation to achieving the objective of assurance of co-location at delivery points and other facilities.

¹²²⁶ See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of assurance of access.

¹²²⁷ As set out in Section 9, in reaching this conclusion we have taken utmost account of the BEREC Common Position.

irrespective of the technology required, on fair and reasonable charges, terms and conditions.¹²²⁸

Requirement to provide specific types of network access

13.219 In concluding that BT be required to meet reasonable requests for network access by providing wholesale products with specified characteristics (in addition to proposing that it be required to meet any reasonable requests for network access), we aim to address the ability and incentive that BT has to disrupt or restrict competition by refusing to supply types of wholesale products which can enable its competitors to deliver services effectively in ways which we consider important in light of our market analysis.¹²²⁹ In particular, we consider that BT should be subject to clear obligations to provide specific wholesale access products which support competition in the wholesale MISBO market and, in turn, promote competition in the related downstream retail markets.

SMP Condition

13.220 We have concluded that BT should be subject to both a general requirement to meet reasonable requests for network access and to provide specific types of network access.

Legal tests

Section 87 of the Act

13.221 Section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide such network access as we may, from time to time, direct. These conditions may, pursuant to Section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at the times required by or under the conditions.

13.222 When considering the imposition of such conditions in a particular case, Ofcom must have regard to the six factors set out in Section 87(4) of the Act, including, *inter alia*,

- the technical and economic viability of installing and using other facilities, including the viability if other network access products whether provided by the dominant provider¹²³⁰ or another person¹²³¹, that would make the proposed network access unnecessary;
- the feasibility of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed (taking account of any public investment made); and

¹²²⁸ We also discuss in Section 9 how the fair and reasonable charges obligation complements other pricing remedies.

¹²²⁹ This is consistent with the BEREC Common Position **BP1** in relation to achieving the objective of assurance of assurance of access.

¹²³⁰ i.e. in this instance BT.

¹²³¹ i.e. other CPs.

- the need to secure effective competition, including where it appears to us to be appropriate, economically efficient infrastructure based competition, in the long term.

13.223 The definition of access and the way in which we might assess reasonable demands for access are set out in our Access Guidelines.¹²³² We consider it appropriate in cases where we find a CP has SMP (such as BT in this case) to impose an access obligation on that provider requiring it to meet all reasonable requests for network access within the relevant wholesale market, irrespective of the technology required, on fair and reasonable charges, terms and conditions.

13.224 In imposing the general, and specific, requirements for the provision of network access, we have taken all six factors into account. In particular, in light of our market analysis, we consider these requirements are necessary for securing effective competition, including economically efficient infrastructure based competition, in the long term.¹²³³ As discussed in our SMP assessment, there are considerable sunk costs associated with building networks to provide leased lines services. It is unlikely to be economically viable to build competing access networks of a sufficient scale to provide effective constraint on BT's SMP in the wholesale MISBO market. Further, the requirement for BT only to meet reasonable network access requests also ensures that due account is taken of the technical and economic viability of installing and using other facilities, the feasibility of the proposed network access, and of the investment made by BT initially in providing the network.

Statutory duties under sections 3 and 4 of the Act

13.225 In addition to taking into account the six factors in section 87(4) of the Act, we consider that these general, and specific, requirements for the provision of network access:

- further the interests of citizens in relation to communications matters and further the interests of consumers in the wholesale MISBO market by promoting competition, in accordance with our general duty under section 3(1) of the Act;
- seek to achieve the objective of securing the availability throughout the UK of a wide range of electronic communications services, in accordance with our duty under section 3(2) of the Act;

13.226 In imposing network access obligations which enable us to carry out our general duty under section 3 of the Act, we have also had regard to the following (these appearing to us to be relevant in the circumstances):¹²³⁴

- the desirability of promoting competition in relevant markets;
- the desirability of encouraging investment and innovation in relevant markets; and

¹²³² *Imposing access obligations under the new EU directives*, Ofcom, 13 September 2002, available at http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.pdf

¹²³³ This is consistent with the BEREC Common Position **BP3** in relation to achieving the objective of assurance of access.

¹²³⁴ In accordance with our duty under section 3(4) of the Act.

- the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.

13.227 We also consider the general, and specific, requirements for the provision of network access accord with the six European Community requirements for regulation under section 4 of the Act, in particular by:

- promoting competition in the provision of electronic communications networks and services, associated facilities and the supply of directories; and
- encouraging the provision of network access and service interoperability, namely securing efficient and sustainable competition, efficient investment and innovation, and the maximum benefit for customers of CPs.

Statutory duties under sections 47 of the Act

13.228 Sections 47 of the Act require SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. We consider the SMP conditions are:

- objectively justifiable, in that they facilitate and encourage access to BT's network and therefore promotes competition to the benefit of consumers;
- not unduly discriminatory, as they are imposed only on BT and no other operator has been found to hold a position of SMP in the wholesale MISBO market;
- proportionate, since they are targeted at addressing the market power that BT holds in this market and do not require it to provide access if it is not technically feasible or reasonable; and
- transparent, in that the SMP conditions are clear in their intention and implementation.

13.229 In relation to our conclusion that the scope of the fair and reasonable obligation according to which BT must provide network access, should be broadened to include fair and reasonable charges, we consider this is appropriate in order to promote efficiency and sustainable competition in the wholesale TI markets and to provide the greatest possible benefits to end-users by enabling OCPs to purchase network access at levels that should be expected in a competitive wholesale market. In this respect, we have also taken into account the extent of investment of BT in the matters to which the broadened scope of the fair and reasonable obligation would relate.¹²³⁵

13.230 For all the reasons set out above, we consider that the general and specific network access conditions are appropriate to address the competition concerns identified, in accordance with section 87(1) of the Act.

¹²³⁵ In this respect, we consider the extent of investment – if required at all – would not be significant given the strictly behavioural nature of this specific remedy – i.e. it serves to impose an *ex ante* qualification on the manner in which BT must comply with the main obligation which is to meet reasonable requests for network access.

Requirement not to unduly discriminate and Equivalence of Input

Aim of regulation

13.231 For the reasons set out earlier in this Section, we have concluded it is appropriate to require that the general, and specific, requirements for the provision of network access are delivered to competitors on an EOI basis. The aim of the SMP condition is to facilitate the creation of a level playing field in the wholesale MISBO market on which OCPs can compete with BT, by preventing BT from discriminating against OCPs in favour of its wholesale division, thereby actively promoting competition in the wholesale MISBO market and, in turn, in the related downstream retail markets.

13.232 For the reasons set out in Section 12, we consider that Article 10 of the Access Directive, as implemented by section 87(6)(a) of the Act provides a basis for imposing both EOI and a less strict interpretation of non-discrimination which prevents discrimination that is undue.

13.233 We recognise that it might be that there are some WDM circuits over 70km which it might be onerous to require to be provided on an EOI basis and, consequently we have exempted the provision of particular circuits from the obligation to provide on an EOI basis.

13.234 We have also excluded certain backhaul segments which form part of BT's core network. In addition we have excluded from the scope of the EOI obligation network access which BT is not providing on an EOI basis as at 31 March 2013.

13.235 Where the EOI obligation does not apply, BT remains subject to a no-undue discrimination obligation. In light of stakeholder responses,¹²³⁶ we confirm that this obligation applies to both non-pricing *and* pricing practices.

No unduly discriminatory discounts

13.236 The obligation not to discriminate unduly also applies to pricing discounts.

13.237 First, in relation to volume discounts we recognise that these would very often in practice constitute undue discrimination since BT's retail arm would almost inevitably be the main beneficiary and there is therefore a strong potential for anti-competitive effects. However, we believe that this point is well understood by CPs and do not consider a change in the obligation is required specifically to reflect this.

13.238 Secondly, in relation to geographic discounts:

- As discussed in Section 5, we have conducted a detailed analysis of the geographic scope of each of the relevant retail and wholesale product markets. In summary, and as set out in more detail in Section 5, geographic areas can comprise a single relevant geographic market to the extent that:
 - competitive conditions in the geographic area are sufficiently homogeneous; and
 - the areas can be distinguished from neighbouring areas where the competitive conditions are appreciably different.

¹²³⁶ See Section 9 for further discussion.

- We have noted that for the geographic markets where we have found SMP, the underlying costs and competitive conditions would not be completely homogenous throughout the UK (even outside the WECLA). This has suggested to us that some freedom to charge in a way that reflects more accurately the costs incurred and to respond to the local characteristics of competition that exist in these markets would be efficient. Moreover, given the level of cost differences that may exist and the extent of competition in some areas, BT's ability to compete could be limited if it were required to maintain nationally uniform prices. Hence, geographically differentiated prices may reflect BT responding legitimately to cost differences in the face of competition;
- In light of the above, we therefore consider that geographic discounts may or may not be unduly discriminatory depending on the circumstances. In the event of an allegation of offering unduly discriminatory geographic discounts, we would judge each alleged breach of the no undue discrimination obligation on a case by case basis.

13.239 In Section 20 of this Statement, we have considered how geographic discounts should be treated in the charge control remedy we are imposing in the wholesale MISBO market.

13.240 Thirdly, in relation to term discounts:

- in principle, we consider this form of discount could raise competition concerns – for example:
 - if BT's downstream operations were at an advantage compared to downstream competitors. In principle, the largest beneficiary of term discounts could be BT's downstream operations, as they may see no commercial disadvantage in being contractually tied to BT's wholesale services for a lengthy period of time. If so, it could provide BT with the ability to undercut downstream competitors in ways that they could not match (where those competitors rely on wholesale services from BT, but do not wish to sign up to the discounts);
 - term discounts may increase the barriers to entry/growth for upstream competitors to Openreach, if purchasers of wholesale services are tied into longer term contracts (and so increasing the switching costs);
- however, it is not necessarily the case that we should automatically view all forms of term discount as harmful to consumers;
- we therefore consider that term discounts may or may not be unduly discriminatory depending on the circumstances. In the event of an alleged breach we would judge each alleged breach on a case by case basis.

13.241 In Section 20 of this Statement we have considered whether there should be any restrictions on the term discounts that BT may offer and how they might be taken into account in the specific price control remedy we are imposing in the wholesale MISBO market.

SMP Condition

13.242 We have concluded that BT should be subject to a requirement not to discriminate unduly and, unless we specifically direct otherwise, provide network access on an EOI basis.

Legal tests

13.243 We are satisfied that the SMP conditions meet the various tests set out in the Act.

13.244 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

13.245 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

13.246 In reaching our conclusion that BT should be subject to a requirement not to discriminate unduly and to provide Ethernet services on an EOI basis, we have taken all these six factors into account. In particular, we consider that the SMP conditions are required to secure effective competition in the long term.

13.247 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP conditions are aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by preventing BT from leveraging its SMP into downstream markets.

13.248 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP conditions are:

- objectively justifiable, in that they provide safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT supplying other than on an

EOI basis or otherwise discriminating unduly in favour of its own downstream activities or between different competing providers;

- not unduly discriminatory, as they are imposed only on BT and no other operator has been found to hold a position of SMP in the wholesale MISBO market;
- proportionate because:
 - in relation to the no-undue discrimination obligation it only seeks to prevent discrimination that is undue; and
 - in relation to the imposition of the EOI obligation, for the reasons set out above at paragraphs 13.122 to 13.154; and
- transparent, in that the SMP conditions are clear in what they are intended to achieve.

Transparency and notification obligations

13.249 We have concluded that BT should be subject to a set of obligations, aimed at promoting transparency and ensuring non-discrimination.¹²³⁷ The obligations we discuss in more detail below are:

- requirement to publish a reference offer;
- an obligation to give 28 days' notice of price reductions¹²³⁸ and to give 90 days' notice of all other changes to prices, terms and conditions for existing MISBO services;
- an obligation to give 28 days' notice of the introduction of prices, terms and conditions for new MISBO services;
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

13.250 These obligations are designed to support the general, and specific, network access and non-discrimination obligations.

Legal tests

13.251 Section 87(6) also authorises the setting of SMP services conditions that require the dominant provider to publish information about network access to ensure transparency and to publish terms and conditions.

13.252 We discuss each of the transparency and notification obligations in more detail below.

¹²³⁷ In this respect, we consider the set of obligations aimed at promoting transparency and ensuring non-discrimination are consistent with the relevant best practices identified in the BEREC Common Position.

¹²³⁸ We consider that a 28 day notice period should apply to any increase in prices that may occur at the end of a special offer (where the price immediately following the end of the special offer is no higher than the price immediately before the start of the special offer).

Requirement to publish a reference offer (RO)

Aim of regulation

13.253 A requirement to publish a RO has two main purposes, namely:

- to assist transparency for the monitoring of potential anti-competitive behaviour; and
- to give visibility to the terms and conditions on which other providers will purchase wholesale services.

13.254 This helps to ensure stability in markets and, without it incentives to invest might be undermined and market entry less likely.

13.255 The publication of a RO potentially allows for speedier negotiations, avoids possible disputes and give confidence to those purchasing wholesale services that they are being provided on non-discriminatory terms. Without this, market entry might be deterred to the detriment of the long-term development of competition and hence consumers.

13.256 The condition requires the publication of a RO and specifies the information to be included in that RO (set out below) and how the RO should be published. It prohibits the dominant provider from departing from the charges, terms and conditions in the RO and requires it to comply with any directions Ofcom may make from time to time under the condition. The published RO must set out (at a minimum) such matters as:

- a clear description of the services on offer including technical characteristics and operational process for service establishment, ordering and repair;
- the locations of points of network access and the technical standards for network access;
- conditions for access to ancillary and supplementary services associated with the network access including operational support systems and databases etc;
- contractual terms and conditions, including dispute resolution and contract negotiation/renegotiation arrangements;
- charges, terms and payment procedures;
- service level agreements and service level guarantees; and
- to the extent that BT uses the service in a different manner to CPs or uses a similar service, BT is required to publish a reference offer in relation to those services.

SMP Condition

13.257 We have concluded that BT should be subject to a requirement to publish a RO.

Legal tests

13.258 We are satisfied that the SMP condition meets the various tests set out in the Act.

13.259 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

13.260 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

13.261 In reaching our conclusion that BT should be subject to a requirement to publish a reference offer, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

13.262 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the condition is aimed at promoting competition firstly by ensuring that providers have the necessary information to allow them to make informed decisions about purchasing MISBO services in order to compete in downstream markets and by providing transparency in order to assist in the monitoring of anti-competitive behaviour.

13.263 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it requires that terms and conditions are published in order to encourage competition, provide stability in markets and monitor anti-competitive behaviour;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in the wholesale MISBO market;
- proportionate, as only information that is considered necessary to allow providers to make informed decisions about competing in downstream markets is required to be provided; and

- transparent, in that the SMP condition, is clear in its intention and implementation.

Requirement to notify charges, terms and conditions

Aim of regulation

13.264 We have concluded that BT should be subject to an obligation to notify changes to its charges, terms and conditions.

13.265 Notification of changes to services at the wholesale level can assist competition by giving advanced warning of charge changes to providers purchasing wholesale services in order to compete with the dominant provider in downstream markets. It also supports the non-discrimination obligation by ensuring that BT does not notify changes in a discriminatory manner. Notification of changes to charges therefore helps to ensure stability in markets without which we considered incentives to invest might be undermined and market entry made less likely. However, there may be some disadvantages to notifications, particularly in markets where there is some competition. It can lead to a 'chilling' effect where CPs follow BT's prices rather than act dynamically to set competitive prices. On balance, however, we do not consider that this consideration would undermine the imposition of this obligation. Competitors rely to a significant degree on the provision of wholesale services to enable them to compete in downstream markets. We have concluded that the advantages of notifying charges are therefore likely to outweigh any potential disadvantages.

13.266 We believe that prior notification of changes to charges, terms and conditions are important to ensure that competing providers have sufficient time to plan for such changes, as they may want to restructure the prices of their downstream offerings in response to changes to charges at the wholesale level.

13.267 We consider that the notification period should allow sufficient time for downstream providers to make necessary changes to their downstream products and services. We believe that 90 days would ordinarily be an appropriate notification period for existing products and services.

13.268 However, we also recognise that the industry and end-users could benefit from shorter notification times when prices are being reduced. For example, there may be advantages in having a shorter notification period for price incentives to encourage migration to newer or more efficient MISBO services. There should also not be a risk of financial exposure for CPs if prices are being reduced. We therefore consider 28 days to be an appropriate notification period for price reductions. Often price reductions can be part of a special offer to which conditions are attached so the shorter notice period would also need to apply to such conditions.¹²³⁹

13.269 In addition, we consider that the prior notification period for new products and services should reflect the lesser administrative impact of changes to charges for new products and services. We consider that 28 days is therefore an appropriate notification period for new products and services.

13.270 We therefore conclude that the following notification periods should apply:

¹²³⁹ For example, we have recently granted a notification waiver for Openreach's special offer for EAD to WES migration. This offered a discount on connection charges and a waiver of early termination charges on condition that customers upgraded to higher bandwidth circuits.

<http://stakeholders.ofcom.org.uk/binaries/consultations/ethernet-waiver/statement/statement.pdf>

- 28 day notice for prices, terms and conditions relating to new service introductions;
- 28 days notice for price reductions and associated conditions (for example conditions applied to special offers);¹²⁴⁰ and
- 90 days notice for all other changes to prices terms and conditions.

SMP Condition

13.271 We have concluded that BT should be subject to a requirement to notify charges, terms and conditions.

Legal tests

13.272 We are satisfied that the SMP condition meets the various tests set out in the Act.

13.273 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

13.274 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

13.275 In reaching our conclusion that BT should be subject to a requirement to notify changes to its charges, terms and conditions, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

¹²⁴⁰ We further consider that a 28 day notice period should apply to any increase in prices that may occur at the end of a special offer (where the price immediately following the end of the special offer is no higher than the price immediately before the start of the special offer).

13.276 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that CPs have the necessary information about changes to terms, conditions and charges sufficiently in advance to allow them to make informed decisions about competing in downstream markets.

13.277 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that there are clear benefits from the notification of changes in terms of ensuring that providers are able to make informed decisions within an appropriate time frame about competing in downstream markets;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in the wholesale MISBO market;
- proportionate, as 90 days is considered the minimum period necessary to allow competing providers to plan for changes to existing network access and 28 days for new network access and price reductions; and
- transparent, in that the condition, is clear in its intention and implementation.

Requirement to notify technical information

Aim of regulation

13.278 We have concluded that changes to technical information should be published in advance, so that competing providers have sufficient time to prepare for them.

13.279 Under the requirement to publish a RO, BT is required to publish technical information. However, advance notification of changes to technical information is important to ensure that providers who compete in downstream markets are able to make effective use of the wholesale services provided by BT.

13.280 For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes to wholesale services offered by BT.

13.281 Technical information includes new or amended technical characteristics, including information on network configuration, locations of the points of network access and technical standards (including any usage restrictions and other security issues).

13.282 The condition requires the notification of new technical information within a reasonable time period but not less than 90 days in advance of providing new wholesale services or amending existing technical terms and conditions. We consider that 90 days is the minimum time that competing providers need to modify their network to support a new or changed technical interface or support a new point of access or network configuration.

13.283 This does not rule out that there may be circumstances in which longer periods of notice may be appropriate, but in the absence of particular situations that can be anticipated now this cannot be reflected explicitly in conditions.

SMP Condition

13.284 We have concluded that BT should be subject to a requirement to notify technical changes.

Legal tests

13.285 We are satisfied that the SMP condition meets the various tests set out in the Act.

13.286 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

13.287 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

13.288 In reaching our conclusion that BT should be subject to a requirement to notify technical information, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

13.289 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to MISBO services to enable them to compete in downstream markets.

13.290 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it enables providers to make full and effective use of network access to be able to compete in downstream markets;

- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in the wholesale MISBO market;
- proportionate in that 90 days is the minimum period that Ofcom considers is necessary to allow competing providers to modify their networks; and
- transparent in that it is clear in its intention that BT notify changes to technical information in advance.

Requirement to publish quality of service information

Aim of regulation

13.291 We have concluded that BT should be required to publish specific quality of service information.

13.292 Vertically integrated operators have the ability to favour their own downstream business over third party CPs by differentiating on price or terms and conditions. This discrimination could also take the form of variations in quality of service (either in service provision and maintenance or in the quality of network service provided by the dominant provider to external providers compared to its own retail operations). This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage in terms of the services they can offer consumers to compete with the downstream retail business of the vertically integrated operator.

13.293 In order to mitigate this risk we have concluded that, for each of the wholesale MISBO products, BT should be subject to an obligation to publish information about the quality of service of the network access it provides. The main benefit of this in wholesale markets is that other CPs could ensure that the service they receive from BT is equivalent to that provided by BT to its own retail divisions.

13.294 The obligation will require BT to publish information as directed by Ofcom, rather than requiring BT to publish specific information from the date of the imposition of the obligation.

SMP Condition

13.295 We have concluded that BT should be subject to a requirement to publish quality of service information.

Legal tests

13.296 We are satisfied that the SMP condition meets the various tests set out in the Act.

13.297 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

13.298 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

13.299 In reaching our conclusion that BT should be subject to a requirement to publish quality of service information, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

13.300 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have visibility of the quality of service that BT provides to itself and to other providers.

13.301 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it aims to prevent undue discrimination in the provision of service by requiring BT to publish quality of service information about the service it provides to itself and to other providers;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate because it only requires BT to publish information as directed by Ofcom in the event we consider such information is required to monitor BT's compliance with its other obligations, which is the minimum condition to ensure the desired objective; and
- transparent in that it is clear in its intention that BT is required to publish quality of service information.

Requests for new network access

Aim of regulation

13.302 We have concluded that BT should be subject to obligations that determine how requests for new types of network access should be handled.

13.303 Vertically integrated operators have the incentive to favour their own downstream business over third party CPs by discriminating on price or terms and conditions. Where such an operator has SMP it also has the ability to discriminate. One form of potential discrimination is in relation to the handling of requests for new types of network access. This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage compared with the downstream retail business of the vertically integrated operator in terms of their ability to introduce new services to meet their customer needs and in terms of their ability to offer innovative services in order to compete more effectively.

13.304 In order to ensure that BT does not discriminate in this way, we have concluded that BT should be subject to a set of obligations that specify how it should handle requests for new types of network access. These obligations would support the obligation not to unduly discriminate by specifying how requests should be handled.

13.305 We consider that the obligations which are currently applied in other leased lines markets are fit for purpose and should be applied to the wholesale MISBO market. These obligations include:

- a requirement for BT to publish reasonable guidelines specifying the required content and form of requests for new network access and how they will be handled;
- a requirement for BT to provide sufficient technical information to CPs to allow them to draft product specifications that are efficient and which satisfy the reasonable requirements; and
- timescales within which BT must acknowledge and process requests.

SMP Condition

13.306 We have concluded that BT should be subject to a requirement specifying how it should handle requests for new network access.

Legal tests

13.307 We are satisfied that the SMP condition meets the various tests set out in the Act.

13.308 First, section 87(3) of the Act authorises the setting of a SMP condition requiring the dominant provider to provide network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

13.309 When considering the imposition of such conditions in a particular case, we must take into account six factors set out section 87(4) of the Act:

- the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
- the feasibility of the provision of the proposed network access;

- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed;
- the need to secure effective competition in the long term;
- any rights to intellectual property that are relevant to the proposal; and
- the desirability of securing that electronic communications services are provided that are available throughout the member States.

13.310 In reaching our conclusion that BT should be subject to a requirement specifying how it should handle requests for new network access, we have taken all these six factors into account. In particular, we consider that the SMP condition is required to secure effective competition in the long term.

13.311 Secondly, we have considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by facilitating the development of competition in downstream markets.

13.312 Thirdly, section 47 of the Act requires SMP conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that its purpose is to prevent undue discrimination in the processing of requests for new network access;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate as it continues to provide a SOR process based on the currently implemented process, while allowing scope for industry to be involved in agreeing process improvements; and
- transparent, in that the SMP condition, is clear in its intention and implementation.

Charge control on single-service Ethernet MISBO products

Aim of regulation

13.313 We are imposing a charge control remedy on BT's single-service Ethernet MISBO products to address the competition problems we have identified in the wholesale MISBO market, in particular the risk of excessive pricing.

13.314 Section 87(9) of the Act authorises the setting of an SMP services condition setting price controls for network access and relevant facilities. Section 88 of the Act specifies that Ofcom are not to set a price control unless it appears to Ofcom that there is a risk of adverse effects due to pricing distortions and it appears to Ofcom that setting a price control would promote efficiency, sustainable competition and confer the greatest benefits on the end users.

13.315 A price control can take a variety of forms¹²⁴¹ including but not limited to a charge control, cost orientation and/or safeguard cap.

13.316 In a competitive market, the charges for services would be set on the basis of the commercial judgements of individual companies and could be expected to deliver cost reflective prices. However, as discussed above, one of the competition problems we have identified as a result of our market analysis of the wholesale MISBO market, in particular our SMP assessment, is the risk of BT engaging in excessive pricing.

13.317 Excessive prices at the wholesale level could make it difficult for third party CPs to compete at the retail level with BT and in the long term, may result in market exit. Unjustifiably high wholesale charges are also likely to result in high retail prices – i.e. consumers would be paying more for a service than they should expect if wholesale prices were constrained by effective competition.¹²⁴²

13.318 Having identified this relevant risk of an adverse effect arising from price distortion in our market analysis,¹²⁴³ we have concluded that this risk should be addressed by the imposition of an appropriate charge control remedy on single-service Ethernet products. We have concluded that the charge control remedy also appears appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on end-users.¹²⁴⁴

13.319 We have also taken account of the extent of the investment of BT in the matters to which the charge control remedy relates.

13.320 Our conclusions, together with our reasons, consultation responses and considerations of those responses, with regard to the detail of the charge control we are imposing, and the reasons why we consider this remedy complies with the relevant legal tests in the Act, are set out in Section 20.

Insufficiency of national and Community competition law remedies

13.321 At the beginning of this Section we set out our conclusion that national and Community law remedies would be insufficient to address the competition problems we have identified in the wholesale MISBO market.

13.322 We set out below, by reference to the remedies we have decided to impose, our reasons supporting this conclusion, and which reasons lead us to conclude that competition would be ineffective in the wholesale MISBO market over the course of the three year review period.

¹²⁴¹ As suggested by Recital 20 of the Access Directive.

¹²⁴² See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of fair and coherent access pricing.

¹²⁴³ Within the meaning of section 88(3) of the Act.

¹²⁴⁴ Within the meaning of section 88(1)(b) of the Act. See also, in this respect, paragraphs 13.190 to 13.200 above.

13.323 First, we do not consider that the nature and scope of the remedies we are imposing to address the competition problems we have identified could be imposed equally effectively under competition law. This includes reliance on the BT Undertakings which are, in essence, a remedy under national competition law.¹²⁴⁵ As we explained in 2005 when we accepted them in lieu of a reference to the Competition Commission, the BT Undertakings are intended to complement *ex ante* regulation under the Act. They seek to deploy a variety of mechanisms aimed at defining equivalent treatment, and at preventing and detecting discriminatory conduct by BT when supplying wholesale network access and backhaul services to its downstream competitors.

13.324 In contrast, the SMP remedies we are imposing are needed to address the competition problems we have identified in this market review and which we consider will pervade over the course of the three year review period. For example:

- we are imposing both general, and specific, network access obligations, in the manner and form set out in Conditions 1 and 2;
- Conditions 1 and 2 provide, amongst other things, for direction-making powers.¹²⁴⁶ These direction-making powers are important since they allows us to direct BT as to the application of the general, and specific, network access obligation, and so ensure their application can be specifically tailored to address the competition problem(s) we have identified, both now and over the course of the three year review period;
- the *ex ante* remedies we are imposing provide, amongst other things, that new products and services provided in the wholesale MISBO market are captured by the relevant SMP obligations,¹²⁴⁷ thus ensuring their continued effectiveness to address the competition problems over the course of the three year review period.

13.325 Secondly, as evidenced by the suite of remedies we are imposing, the requirements of intervening to address the competition problems in the wholesale MISBO market are extensive. We list the remedies below:

- a requirement to provide network access including an obligation to offer fair and reasonable charges, terms and conditions;
- a requirement to provide cost accounting information;
- a requirement not to unduly discriminate;
- a requirement to provide Ethernet services on an EOI basis;
- a charge control;
- a requirement to publish a reference offer;
- a requirement to give notice of changes to prices terms and conditions:

¹²⁴⁵ Enterprise Act 2002.

¹²⁴⁶ Condition 1.3 and Condition 2.2.

¹²⁴⁷ See for example, Condition 1 which provides that the provision of network access – i.e. both existing and new – is on fair and reasonable terms, conditions and charges.

- 28 days notice for the introduction of prices, terms and conditions for new services;
- 28 days notice for price reductions for existing services; and
- 90 days notice for all other changes to prices, terms and conditions.
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

13.326 Thirdly, based on recent developments in the wholesale MISBO market, consultation responses and expected developments over the three year review period, we remain of the view that providing continued certainty in the wholesale MISBO market is of paramount concern – both to BT and OCPs, and to end-users. We consider this is best achieved through *ex ante* regulation which, in comparison to competition law remedies and in light of our analysis of the relevant markets, will:

- will provide greater certainty over the course of the three year review period on the types of behaviour that are/are not allowed;
- allow for timely intervention – proactively by us and/or by parties being regulatory disputes to us for swift resolution¹²⁴⁸ – and consequently timely enforcement using the considerable enforcement powers accorded us under the Act to secure compliance,¹²⁴⁹ through a process with which the market in general is familiar and which is also set out in the Act.

Conclusions regarding the remedies we are imposing in the wholesale MISBO market

13.327 We have concluded that the following remedies should be imposed on BT in the wholesale MISBO market:

- a requirement to provide network access including an obligation to offer fair and reasonable charges, terms and conditions;
- an accounting separation obligation;
- a cost accounting obligation;
- a requirement not to unduly discriminate;
- a requirement to provide Ethernet and WDM services on an EOI basis;
- a charge control on single-service Ethernet MISBO products;
- a requirement to publish a reference offer;
- a requirement to give notice of changes to prices terms and conditions:

¹²⁴⁸ See sections 185 to 191 of the Act, in particular section 185(1A).

¹²⁴⁹ See sections 94 to 104 of the Act.

- 28 days notice for the introduction of prices, terms and conditions for new services;
- 28 days notice for price reductions for existing services; and
- 90 days notice for all other changes to prices, terms and conditions.
- a requirement to publish quality of service information;
- a requirement to notify technical information with 90 days notice; and
- obligations relating to requests for new network access.

13.328 As explained above we have concluded that these remedies also apply to interconnection and accommodation services that BT provides in connection with wholesale MI services.

Section 14

Interconnection and accommodation services

Introduction

- 14.1 CPs need to purchase certain ancillary services from BT in order to use the regulated wholesale services which BT is required to provide in wholesale leased lines markets. The ancillary services include interconnection and accommodation services necessary to enable CPs to interconnect their networks with BT's. We therefore consider it necessary to regulate provision of interconnection and accommodation services in order to address BT's SMP in the relevant wholesale markets.
- 14.2 In the previous sections we have set out the remedies which we have decided to impose in those wholesale markets for TISBO, TI regional trunk segments, AISBO and MISBO in which we found that BT has SMP. We explained that those remedies will also apply to interconnection and accommodation services. Consequently BT will be required to meet reasonable requests for interconnection and accommodation services under the general network access obligation that we propose for each of these markets.
- 14.3 In this section we set out the types of interconnection and accommodation services that we have decided should be included in BT's obligations to provide network access in the relevant wholesale markets for TISBO, regional TI trunk segments, AISBO and MISBO services. These remedies are based on the nature of the competition problems we have identified in our market analysis in relation to the respective wholesale markets to which they apply. We set out the corresponding competition problems in sections 10 to 13.

Structure of this section

- 14.4 The structure of the rest of this section is as follows:

Sub-section	Description
Summary of our conclusions	
Description of the interconnection and accommodation services provided in the business connectivity markets	
Our Consultation proposals	<ol style="list-style-type: none"> Assessment of competition problems relevant to interconnection and accommodation services Assessment of appropriate remedies Remedies proposed in the June BCMR Consultation
Consultation responses	<ol style="list-style-type: none"> Stakeholders' views Our reasoning
Our conclusions on the appropriate remedies	

Summary of our conclusions

14.5 We have concluded that BT should be subject to specific obligations to provide interconnection and accommodation services as set out in figure 14.1 below.

Figure 14.1 Summary of interconnection and accommodation service obligations

Competition issues	Wholesale Markets	Remedies (in addition to those specified for each market in preceding sections)
Refusal to supply	<p>In the UK excluding the Hull area and the WECLA:</p> <ul style="list-style-type: none"> low bandwidth AISBO MISBO <p>In the WECLA</p> <ul style="list-style-type: none"> low bandwidth AISBO 	<p>The obligation to provide network access includes the following services:</p> <ul style="list-style-type: none"> Customer Sited Handover (CSH) In Building Handover (IBH) Accommodation services
	<p>In the UK, excluding the Hull area:</p> <ul style="list-style-type: none"> low bandwidth TISBO regional TI trunk segments <p>In the UK excluding the Hull area and the WECLA:</p> <ul style="list-style-type: none"> medium bandwidth TISBO high bandwidth TISBO 	<p>The obligation to provide network access includes the following services:</p> <ul style="list-style-type: none"> Customer Sited Handover (CSH) In Span Handover (ISH) In Span Handover extension (ISH Extension) In Building Handover (IBH) Accommodation services
Non price discrimination	<p>In the UK, excluding the Hull area:</p> <ul style="list-style-type: none"> low bandwidth TISBO regional TI trunk segments <p>In the UK excluding the Hull area and the WECLA:</p> <ul style="list-style-type: none"> medium bandwidth TISBO high bandwidth TISBO low bandwidth AISBO MISBO <p>In the WECLA</p> <ul style="list-style-type: none"> low bandwidth AISBO 	Obligation to allocate accommodation space on the basis of equivalence of inputs (EOI)
Excessive pricing	<p>In the UK, excluding the Hull area:</p> <ul style="list-style-type: none"> low bandwidth TISBO regional TI trunk segments <p>In the UK excluding the Hull area and the WECLA:</p> <ul style="list-style-type: none"> medium bandwidth TISBO high bandwidth TISBO low bandwidth AISBO MISBO <p>In the WECLA</p> <ul style="list-style-type: none"> low bandwidth AISBO 	Price controls for interconnection and accommodation services

- 14.6 In relation to BT's development of ISH and interconnection aggregation (high density handover) solutions requested by CPs for AISBO services. Our view is that BT should bring those developments to conclusion as soon as reasonably possible so that deployment of appropriate solutions can proceed.

Description of the interconnection and accommodation services provided in the business connectivity markets

- 14.7 A Point of Connection (POC) or Point of Handover (POH) is the point at which BT's network interconnects with that of another CP. The relevant services provided at a POC can broadly be divided into links and equipment. Links are the duct and fibre which connect the equipment of two interconnecting communications providers in order to allow transmission between the networks of these two communications providers. Equipment at each end of a link (which can include multiplexers and transmission terminals) aggregates, disaggregates and terminates partial circuits for onward transmission.

POC for Wholesale TISBO & TI trunk interconnection services

- 14.8 BT currently provides the following types of interconnection service for wholesale TISBO services:
- Customer-Sited Handover (CSH): an interconnection service in which BT provides a POC at the site of the interconnecting CP. In order to do so, BT has to extend its network out to the POC and to provide a link from its site to the interconnecting CP's site, as well as equipment at both ends;
 - In-Span Handover (ISH): an interconnection service in which both BT and the interconnecting CP build out their respective networks to a passive handover point located between their respective premises. The handover point is adjacent to the BT exchange and therefore most of the build is the responsibility of the interconnecting CP. BT provides the part of the ISH link running from the handover point to its POC, along with ISH equipment at BT's site. The interconnecting CP supplies the equipment at its own site and the part of the ISH link from that site to the handover point; and
 - In Span Handover extension (ISH extension): this arrangement is similar to ISH, however the handover point is located further from BT's exchange but still within the serving area of that exchange.
- 14.9 Each of these types of service supports aggregated handover of terminating segments over high bandwidth links.
- 14.10 CSH does not involve the interconnecting CP building out its network to BT's exchange and the significant costs of doing so. Therefore, it is usually a method of handover preferred by new CPs or where a handover link is expected to carry a limited volume of traffic. Regulation of CSH is essential to ensure that barriers to entry for new interconnecting CPs are low. If CPs could only interconnect using ISH and had to meet the significant costs of building their links up to BT's exchanges, this could deter market entry and therefore affect the development of competition in these markets.
- 14.11 ISH is the preferred method of handover for CPs who have reasonably extensive network infrastructure. An interconnecting CP will aim to hand over as close as

possible to BT's exchange, in order to minimise the charges payable to BT. Regulation of ISH (including the ISH extension variant) is necessary to ensure that CPs have the option of building out their own networks and of connecting closer to BT's exchange. This therefore assists and incentivises CPs to extend their own infrastructure.

- 14.12 In the 2007/8 Review we required BT to provide CSH, ISH and ISH extension. We also concluded that BT should provide In Building Handover (IBH), which is a POC at co-location space rented by a CP in a BT exchange in support of disaggregated TISBO services. As these services were still under development at the time we did not apply a specific obligation to supply IBH.

POC for wholesale AISBO services

- 14.13 BT currently provides the following types of interconnection service for wholesale AISBO services:

- Two types of CSH:
 - Without aggregation: BT terminates individual circuits at the CP's site without aggregation (i.e. interconnection is part of the service and there is no separate interconnection link). This method is commonly used for WES and EAD circuits; and
 - With aggregation: BT supplies Bulk Transport Link (BTL) which aggregates multiple EBD services for delivery over a single interconnection link to the CP's site. As with TISBO CSH, BT provides a POC at the site of the interconnecting communications provider. In order to do so, BT has to extend its network out to the POC at the CP's site and to provide a CSH link along with CSH POC equipment.
- IBH: BT provides a POC at co-location space rented by a CP in a BT exchange. Currently BT hands over individual circuits to the CP in the latter's co-location space without aggregation.

- 14.14 BT does not offer ISH products for AISBO services at present.

- 14.15 In the 2007/8 Review we required BT to provide CSH and IBH for AISBO services.

- 14.16 The pattern of usage of interconnection services for AISBO services differs significantly from that of TISBO services. CPs generally regard BTL as too expensive and generally use either CSH (without aggregation) or IBH. Use of IBH appears to have grown, particularly since BT introduced EAD Local Access, whose pricing gives CPs an incentive to establish a Point of Presence (POP) in a BT exchange.

- 14.17 We also note that CPs have requested that Openreach develop an ISH interconnection option and also an aggregation capability to make IBH and ISH interconnection more efficient than the current practice of handing over each circuit individually. We discuss this request further below.

POC for wholesale MISBO services

- 14.18 The interconnection services that BT provides for the high bandwidth Ethernet services that fall within the MISBO market are the same as those it provides for the

lower bandwidth Ethernet services that fall within the AISBO market (i.e. as discussed above).

- 14.19 BT's WDM services OSA and OSEA are generally provided on an end-to-end basis (i.e. between customer premises) but BT also offers CSH and IBH.
- 14.20 We did not find that BT had SMP in the MISBO market in the 2007/8 Review so BT is not currently subject to any *ex-ante* obligations in relation to interconnection and accommodation.

Accommodation

- 14.21 Openreach currently provides two types of regulated accommodation services: Co-mingling and Access Locate. Co-mingling is exclusively provided in support of Local Loop Unbundling (LLU), whilst Access Locate provides accommodation for the majority of other access services supplied by Openreach, including Ethernet leased lines. A CP wishing to use disaggregated AISBO products is thus required to purchase Access Locate in order to enable it to deploy its own equipment in the BT exchange space. Openreach also offers a commercial accommodation service called Access Locate Plus, which allows the CP to locate a wider range of equipment, such as video and broadband servers.

Cablelink services

- 14.22 In addition to the interconnection products described above, BT also provides a product in support of accommodation services called Cablelink. Cablelink has both internal and external variants. The internal variant allows a communications provider to connect two remote licensed areas of the BT exchange building (i.e. two separate areas in which the communications provider has installed its equipment) or to connect equipment in the CP's licensed area to a pre-existing fibre entering the exchange building via the cable chamber. The external variant allows a communications provider's external fibre cable to be pulled into the exchange building by BT and routed to the CP's licensed area.
- 14.23 Cablelink is not a handover product as such as it is a passive product that does not interconnect BT equipment to the CP's equipment for the purposes of carrying TISBO or AISBO traffic. However, we consider that it is an essential element of the accommodation services that BT provides because it allows a CP to connect its POP within the BT exchange with the CP's fibre outside the exchange.

Our consultation proposals

- 14.24 Section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide such network access as Ofcom may, from time to time, direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.
- 14.25 Section 87(3) includes reference to conditions requiring relevant facilities to be made available. Network access is also defined in sections 151(3) and (4) of the Act so as to include interconnection services and/or any services or facilities that would enable another CP to provide electronic communications services or electronic communication networks. We considered that a requirement to provide network

access would, therefore, include any ancillary services as may be reasonably necessary for a Third Party to use the services.

- 14.26 In relation to price controls, section 87(9) of the Act authorises the setting of an SMP services condition setting price controls for network access and relevant facilities. Section 88 of the Act specifies that Ofcom are not to set a price control unless it appeared to Ofcom that there was a risk of adverse effects due to pricing distortions and it appeared to Ofcom that setting a price control would promote efficiency, sustainable competition and confer the greatest benefits on the end users. Additionally, in setting a price control, Ofcom must take into account the extent of investment in the matters to which the control relates by the person to whom it applies.

Assessment of competition problems relevant to interconnection and accommodation

- 14.27 In the absence of regulation BT would have an incentive not to supply some or all of these services or to charge excessive prices, particularly as it does not require interconnection services in order to provide its own downstream retail services. As CPs must purchase these services this would have the same effect as excessive prices for the main wholesale services BT supplies and would undermine the remedies that we proposed to impose. We therefore considered it necessary to require BT to provide certain interconnection and accommodation services.
- 14.28 We also noted that space and power in BT's exchanges is limited, that BT has the incentive and, in the absence of appropriate regulation, the ability to discriminate in favour its own needs in allocating such space and power. We considered that the concerns we identified in this regard in our Telecommunications Strategic Review and in a subsequent Statement on a variation to BT's Undertakings in 2008 were still valid.

Assessment of appropriate remedies

TISBO and TI regional trunk services

- 14.29 We proposed that BT should be required to provide each of the types of interconnection service discussed above, namely CSH, ISH, ISH extension which are the established means of interconnection for TISBO and TI regional trunk services. As discussed above each of these services performs a different function and facilitates competition in a different manner and we therefore considered it important that BT provide all three types of interconnection.
- 14.30 Now that BT is preparing to introduce disaggregated TISBO products we proposed that BT should be required to provide accommodation services and IBH for TISBO and TI regional trunk services. We considered that the use of disaggregated TISBO products would facilitate competition and innovation in the interests of consumers by allowing CPs to expand the range of services they supply from POPs they establish in BT local exchanges, thereby enabling them to exploit economies of scale and scope in the provision of business connectivity and other services such as LLU based broadband and telephony services.
- 14.31 We considered that these services should be subject to price controls and provided on non-discriminatory and transparent terms.

AISBO services

- 14.32 We proposed that BT should be required to provide each of the types of interconnection service discussed above, namely CSH and IBH. As discussed above each of these services performs a different function and facilitates competition in a different manner and we therefore considered it important that BT provide both types of interconnection.
- 14.33 As previously discussed in section 11 the ISH and interconnection aggregation (high density handover) developments requested by CPs appeared to us to be sensible developments that would broadly align the interconnection options available for Ethernet services with those already available for TISBO services. They have the potential to improve the efficiency of interconnection by reducing the overall amount of equipment required (and as a result reduce the amount of equipment space required and power consumed) and also to reduce costs. Also, an ISH option would be better suited to CPs with extensive network infrastructure and would reduce the pressure on accommodation in BT exchanges (which is in short supply at some locations) and would enable CPs to interconnect at exchanges where no accommodation space is available. We therefore considered that the product development should be brought to a conclusion as soon as reasonably possible so that deployment could proceed and CPs can begin to benefit from these enhancements as soon as possible.
- 14.34 We considered that these services should be subject to price controls and provided on non-discriminatory and transparent terms, including a requirement for provision of network inputs on an equivalence of inputs basis.

MISBO services

- 14.35 We proposed that BT should be required to offer CSH and IBH interconnection products which are the established interconnection services for Ethernet and WDM services in this market.
- 14.36 As with AISBO services, we considered that BT should continue to develop ISH, ISH extension and aggregation options for Ethernet services.
- 14.37 We considered that these services should be subject to price controls and provided on non-discriminatory and transparent terms, including a requirement for provision of network inputs on an equivalence of inputs basis.

Accommodation

- 14.38 We also proposed that BT should be required to offer accommodation services in support of disaggregated services in the TISBO, AISBO and MISBO markets.
- 14.39 We considered that these services should be subject to price controls and provided on non-discriminatory and transparent terms.

Allocation of space

- 14.40 We considered that the use of disaggregated products such as EAD Local Access facilitates competition and innovation in the interests of consumers by allowing other CPs to access BT's bottleneck assets at least cost. We therefore wish to encourage the use of disaggregated AISBO and TISBO products. The availability of

accommodation in BT exchanges is an important enabler to this model of competition.

- 14.41 We acknowledged that, with the increasing consumption of disaggregated products such as EAD Local Access, accommodation has become more important and that pressure on accommodation space has increased.
- 14.42 The provision of space and power was identified as an area for concern in the Telecoms Strategic Review and was subsequently the subject of significant regulatory attention. This culminated in a variation to the BT Undertakings in 2008.¹²⁵⁰ In this variation, Openreach agreed to undertake a proactive review of exchange space, to develop a multi-use accommodation product and to allocate space and power on an EOI basis.
- 14.43 The effect of this variation was to commit Openreach to assign space and power on a 'first-come-first-served' (FCFS) basis but not to consume the same accommodation products that are used by CPs. This was based on the assessment that given the scale of deployment of equipment by BT, BT's requirements are likely to be different to other CPs so that BT would be likely to use different products to other CPs even if it was required to obtain these products from Openreach.
- 14.44 We also took the view that it was appropriate that provisioning activities such as the provision of ironwork and power in BT owned buildings be carried out by a single provider as management of an exchange where multiple CPs are all carrying out their own works would be complex and inefficient.
- 14.45 We considered that these conclusions remain valid. We thought that allocation of accommodation on an EOI basis in conjunction with a set of charge-controlled accommodation products that meet CPs needs addressed the competition issue in a proportionate manner.
- 14.46 Given the importance of accommodation to CPs it is essential that space and power continue to be allocated on an FCFS basis. For this reason, we proposed that BT should be required to allocate space and power on an EOI basis.

Availability of space

- 14.47 In the last 18 months, there have been two initiatives to address the shortage of accommodation at some exchanges.
- 14.48 Firstly, pursuant to section 5.49(d) of the variation to the BT Undertakings discussed above, BT Operate recently undertook a proactive review based on planning instructions provided by Openreach and agreed with the Ethernet Industry forum. The review was proactively monitored by the Equality of Access Office (EAO) and involved 69 different Local Exchanges signalled by industry stakeholders as being in shortage of space. For the large majority of exchanges, the EAO was satisfied that Openreach and BT Operate had plans to accommodate further CPs' equipment. However, the EAO concluded that BT's timescales for freeing space are quite long. At that time the average lead time for reviewing space in an exchange building, plan appropriate actions to free space and execute the plan was 126 days. This is mainly due to resource constraints within BT Operate.

¹²⁵⁰Variations to BT's Undertakings under the Enterprise Act 2002 in respect of BT's NGN, Space and Power and OSS separation

http://stakeholders.ofcom.org.uk/binaries/consultations/variations_bt/statement/statement071008.pdf

- 14.49 Secondly, in December 2011 the Office of Telecom Adjudicators 2 (OTA2) set up the 'Plan & Build' industry forum to investigate possible solutions to this problem. The role of the forum is to review operational performance in the provision of access to exchange space, power, cable infrastructure (tie cables) and Main Distribution Frames.
- 14.50 We agreed with the EAO that there may be scope to reduce the lead times to fulfil new accommodation orders. We believed that the work currently undertaken by the OTA2 will help industry finalise a better process to free space in BT exchanges and thus required BT to continue engaging with industry via the OTA2 forum.
- 14.51 Noting the above developments, we considered that the proposed remedies are sufficiently flexible to address issues which may arise in relation to availability of space.

Consultation responses

Stakeholders' views

- 14.52 Our proposals in the June BCMR Consultation regarding BT's interconnection and accommodation services attracted relatively little comment from respondents.
- 14.53 BT did not object to our proposals to apply SMP conditions to these ancillary services, and considered that the conditions would merely clarify the existing position. COLT welcomed the improvements in our proposed arrangements for hand-over and interconnection.

Ofcom's considerations

- 14.54 We note that, to the limited extent that stakeholders commented on our proposals in the June BCMR Consultation regarding interconnection and accommodation, they agreed with them.

Conclusions

- 14.55 In light of the limited and positive responses we received, we have decided to adopt unchanged our proposals on interconnection and accommodation services in the BCMR Consultation. The figure below summarises the obligations that will apply to BT.

Figure 14.2: Summary of interconnection and accommodation service obligations

Wholesale Markets	Remedies
<p>In the UK excluding the Hull area and the WECLA:</p> <ul style="list-style-type: none"> low bandwidth AISBO MISBO <p>In the WECLA</p> <ul style="list-style-type: none"> low bandwidth AISBO 	<p>The obligation to provide network access includes the following services:</p> <ul style="list-style-type: none"> Customer Sited Handover (CSH) In Building Handover (IBH) Accommodation services <p>Price controls for interconnection and accommodation services</p> <p>Obligation to allocate accommodation space on the basis of equivalence of inputs (EOI)</p>
<p>In the UK, excluding the Hull area:</p> <ul style="list-style-type: none"> low bandwidth TISBO regional TI trunk segments <p>In the UK excluding the Hull area and the WECLA:</p> <ul style="list-style-type: none"> medium bandwidth TISBO high bandwidth TISBO 	<p>The obligation to provide network access includes the following services:</p> <ul style="list-style-type: none"> In Span Handover (ISH) In Span Handover extension (ISH Extension) Customer Sited Handover (CSH) In Building Handover (IBH) <p>Price controls for interconnection and accommodation services</p> <p>Obligation to allocate accommodation space on the basis of equivalence of inputs (EOI)</p>

14.56 In relation to BT's development of ISH and interconnection aggregation (high density handover) solutions requested by CPs for AISBO services. Our view is that BT should bring those developments to conclusion as soon as reasonably possible so that deployment of appropriate solutions can proceed.

Legal tests

14.57 We are satisfied that that the obligations (set out in Annex 7) meet the various tests set out in the Act. We address the tests in relation to the charge controls in sections 17-24 of this statement.

14.58 First, we have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the obligations are aimed at promoting competition by ensuring that CPs are supplied with interconnection and accommodation services that they require in order to use the wholesale services BT supplies effectively.

14.59 Second, sections 47 and 49 require conditions and directions respectively to be objectively justifiable, non-discriminatory, proportionate and transparent. The conditions and directions are:

- objectively justifiable, in that they facilitate and encourage access to BT's network and therefore promotes competition to the benefit of consumers;
- not unduly discriminatory, as they are proposed only for BT and no other operator has been found to hold a position of SMP in these markets;

- proportionate, in that they prevent BT from exploiting its SMP by withdrawing these interconnection and accommodation services; and
- transparent in that the condition is clear in its intention to ensure that BT provide access to its networks in order to facilitate effective competition.

Section 15

Remedies for the Hull area

Introduction

15.1 In this section we set out the SMP remedies that we have decided to impose on KCOM in the following retail and wholesale markets:

- wholesale market for low bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the Hull area at bandwidths up to and including 8Mbit/s;
- wholesale market for medium bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the Hull area at bandwidths above 8Mbit/s and up to and including 45Mbit/s;
- wholesale market for high bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the Hull area at bandwidths over 45Mbit/s and up to and including 155Mbit/s;
- wholesale market for very high bandwidth Traditional Interface Symmetric Broadband Origination (TISBO) in the Hull area at 622Mbit/s bandwidth;
- wholesale market for low bandwidth Alternative Interface Symmetric Broadband Origination (AISBO) in the Hull area, bandwidths up to and including 1Gbit/s;
- retail market for low bandwidth traditional interface leased lines in the Hull area at bandwidths up to and including 8Mbit/s; and
- retail market for low bandwidth alternative interface leased lines in the Hull area at bandwidths up to and including 1Gbit/s.

15.2 Unless stated otherwise we refer to the low, medium, high and very high bandwidth wholesale traditional interface markets listed above collectively as the 'TISBO markets'.

15.3 The remedies we have imposed are those which we conclude are appropriate to address the competition problems we have identified in the markets set out above as a result of our market analysis, in particular our respective SMP assessments, and which we conclude national and Community competition law alone would be insufficient to address. We set out the competition problems further below in this Section.

Summary of our conclusions

15.4 We summarise below the competition issues we have identified in the relevant markets in the Hull area, and the remedies that we are imposing in them.

Summary of competition problems and remedies

Competition problems	RETAIL remedies: Low bandwidth AI market Low bandwidth TI market	WHOLESALE remedies: Low bandwidth AISBO market TISBO markets
<ul style="list-style-type: none"> Refusal to supply 	<ul style="list-style-type: none"> Requirement to supply retail leased lines, including on fair and reasonable terms, conditions and charges 	<ul style="list-style-type: none"> Requirement to provide network access on reasonable request, including on fair and reasonable terms, conditions and charges
<ul style="list-style-type: none"> Price discrimination Non-price discrimination, e.g. <ul style="list-style-type: none"> Different terms Delaying tactics (late provisioning etc.) Strategic product design Exclusive dealing Quality discrimination Different SLAs & SLGs Predatory pricing; Margin squeeze; Excessive pricing. 	<ul style="list-style-type: none"> Requirement to supply retail leased lines, including on fair and reasonable terms, conditions and charges Requirement not to discriminate unduly Requirement to publish a reference offer 	<ul style="list-style-type: none"> Requirement to provide network access on reasonable request, including on fair and reasonable terms, conditions and charges Requirement not to discriminate unduly Requirement to publish a reference offer Requirement to notify charges, terms and conditions Requirement to notify technical information Accounting separation

Remedies as a whole in the TISBO and retail markets

15.5 As in the 2007/8 Review, we have not imposed charge controls to address the risk of excessive pricing in relation to markets in the Hull area. We have concluded that a more proportionate approach, which also has good incentive properties, is to monitor KCOM's charges against a suitable benchmark of BT's charges.

a) Since the June BCMR Consultation KCOM has offered a voluntary commitment in relation to its wholesale leased lines prices.¹²⁵¹ This specifies substantial reductions in KCOM's charges for wholesale TI and AI services. Our initial benchmarking indicates that these reductions would bring KCOM's charges broadly into line with BT's over the next three years.

15.6 On this basis we have decided to accept these voluntary undertakings. We consider that KCOM's commitment together with the price publication obligations we are imposing in the wholesale and retail markets, will provide stakeholders with valuable reassurance about leased line charges in Hull over the next three years. Whilst we cannot fetter our discretion in this matter, our initial view is that these commitments reduce the likelihood that we will need to intervene in respect of KCOM's charges.

¹²⁵¹ KCOM's letter setting out its voluntary commitment is reproduced in Annex 11.

- 15.7 In the event that we receive a complaint or have our own concerns about KCOM's wholesale charges or its retail charges (which are outside the scope of its voluntary commitment), as an initial step to inform the need for intervention, we would compare KCOM's charges with a suitable benchmark of BT's charges.¹²⁵²
- 15.8 As part of the appropriate package of pricing remedies, together with the non-pricing remedies, to address the competition problems we have identified in the TISBO, AISBO and retail markets, we are imposing accounting separation obligations in the TISBO and AISBO markets. Our conclusion, together with our reasons, consultation responses and considerations of those responses, in relation to this are set out in Section 16.
- 15.9 We consider the remedies as a whole in the TISBO and retail market would achieve our statutory duties and would satisfy the relevant legal tests. In reaching our conclusions we have taken account of our regulatory experience from two previous market reviews, recent developments in the wholesale TI markets, consultation responses, and expected developments over the review period of three years.
- 15.10 In reaching our conclusions on the appropriate remedies, we have taken due account of all applicable guidelines and recommendations issued by the European Commission (EC), and we have taken utmost account of the BEREC Common Position.¹²⁵³ We have also had regard to relevant guidance from the European Regulators' Group (ERG), Ofcom and ourselves.

Structure of this section

- 15.11 This section is structured as follows:

Sub-section		Description
Summary of our conclusions		
Our Consultation proposals		
Retail markets	Assessment of competition problems	<ol style="list-style-type: none"> 1. Competition problems identified in the Hull area retail market 2. Insufficiency of national and Community competition law remedies 3. Result of our assessment of the competition problems
	Approach in the June BCMR Consultation	<ol style="list-style-type: none"> 1. Assessment of appropriate remedies 2. Remedies proposed
Whole sale markets	Assessment of competition problems	<ol style="list-style-type: none"> 1. Competition problems identified in the Hull area retail market 2. Insufficiency of national and Community competition law remedies 3. Result of our assessment of the competition problems
	Approach in the June BCMR Consultation	<ol style="list-style-type: none"> 1. Assessment of appropriate remedies 2. Remedies proposed
Other	Other considerations	Consideration of the requirement for a specific obligation on KCOM with respect to interconnection and accommodation services related to AISBO and TISBO markets
Consultation responses		
Our consideration of Consultation responses		
Our conclusions on the appropriate remedies		Retail markets
		Wholesale markets

¹²⁵² We discuss the form of this benchmark later in this Section.

¹²⁵³ BEREC Common Position on best practices in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale lease lines, BoR (12) 83.

Assessment of competition problems in the Hull area retail market

15.12 The competition problems and the appropriate remedies are very similar in each identified retail market, and we therefore considered both the retail low bandwidth TI market and the retail low bandwidth AI market together in our assessment below.

Competition problems identified in the Hull area retail market

15.13 In light of our market analysis, in particular our SMP assessment, we consider that, in the absence of *ex ante* regulation, KCOM would have the incentives, and its market power would afford it the ability to:

- refuse to supply some retail low bandwidth TI or AI leased lines, for example by restricting the range of products available to end-users;
- charge excessively high prices;
- engage in unduly discriminatory pricing practices, for example by charging certain groups of end-users more than others, in order to restrict retail competition or for other reasons; and
- engage in unduly discriminatory practices relating to non-price aspects of retail leased lines for example by offering certain groups of users different terms and conditions than others, different quality of service or different provision or repair timescales. This may be in order to restrict retail competition or for other reasons.

15.14 To assess the appropriate remedies to address these competition problems, we have carried out an analysis of current competition in the retail TI low bandwidth and retail AI low bandwidths markets in the Hull area.

Insufficiency of national and Community competition law remedies

15.11 We have concluded that national and Community competition law remedies would be insufficient to address the competition problems we have identified. In particular:

- we do not consider appropriate remedies could be imposed under competition law. In this respect, we refer to the nature and scope of the remedies we are imposing to address the competition problems – e.g. a requirement to supply, accounting separation obligations. In addition, the *ex ante* remedies we are imposing provide, amongst other things, that new products and services are captured by the relevant SMP obligations,¹²⁵⁴ thus ensuring their continued effectiveness to address the competition problems over the course of the three year review period;
- we consider the requirements of intervening could be extensive – e.g. the need to monitor imposed terms and conditions;
- we consider providing certainty in the Hull area retail markets is of paramount concern, both to KCOM and to any prospective competitors and also to end-users, and we consider this was best achieved through *ex ante* regulation which, in comparison to competition law remedies, would:

¹²⁵⁴ See for example, Condition 6 which provides that the supply of retail leased lines – i.e. both existing and new – is on fair and reasonable terms, conditions and charges.

- provide greater clarity on the types of behaviour that are/are not allowed;
- be easier to enforce in that it would allow for timely intervention through a process with which the market in general is familiar and which is set out in the Act.

Result of our assessment of the competition problems

15.12 In light of our market analyses, in particular our SMP assessment, and our assessment of the insufficiency of national and Community competition law remedies and upstream wholesale regulation to address the competition problems we identified, we consider that over the course of the forward-looking review period of three years that competition would be ineffective in:

- the retail market for low bandwidth TI leased lines in the Hull area, at bandwidths up to and including 8Mbit/s; and
- the retail market for low bandwidth AI leased lines in the Hull area, at bandwidths up to and including 1Gbit/s.

15.15 We now turn to the approach we adopted in the June BCMR consultation which followed on from our assessment of the competition problems.

Approach to retail remedies in the June BCMR Consultation

Assessment of appropriate remedies

15.16 We apply regulation at the wholesale level where this is sufficient to address competition in downstream markets. Indeed, under section 91(2) of the Act, we may only impose retail remedies where wholesale regulation is insufficient fully to perform our duties in relation to the market situation in the relevant market.

15.17 Our analysis led us to the view that the remedies imposed in the relevant upstream markets in the Hull area would not address the identified competition problems over the period of the review. As discussed below, we considered that KCOM's share of these retail markets was likely to remain high over the period of this review despite the availability of regulated upstream wholesale services. In the retail low bandwidth TI market there is little incentive for CPs to invest in order to compete with KCOM given the declining nature of this market (even leaving aside the size of the potential customer base). The retail low bandwidth AI market is growing but, due to the small size of the potential customer base in Hull, in our view it offered insufficient potential for revenue and profit to attract a significant amount of entry over the three year forward looking period even in the presence of regulated access to upstream wholesale inputs.

Refusal to supply

15.18 We noted that competitive entry had not to date occurred to any significant extent and we considered it to be unlikely during the period of this review. As a result, retail customers in the Hull area are largely dependent upon KCOM's continued willingness to supply products appropriate to their needs. Our analysis suggested that KCOM had SMP and, if so, it would have the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers. Consequently, we considered that there was a risk that KCOM might unreasonably refuse to supply certain types of service or customer groups if such a strategy would

serve its commercial interests. We therefore considered that, in order to address this concern, KCOM should be subject to an obligation to meet reasonable requests for supply of retail leased lines in these markets.

Withdrawal of retail low bandwidth TI services

- 15.19 Unlike BT, KCOM had not announced any plans to withdraw retail low bandwidth TI leased lines. However, given that similar considerations apply to the Hull area as to the rest of the UK, we recognised that KCOM may wish to consider how best to manage a withdrawal process in the coming years, and possibly in the course of the forward-looking period.
- 15.20 We acknowledged that, to the extent the situation in the Hull area mirrors that elsewhere in the UK, these services may be approaching the end of their life. However, as with the corresponding BT services, we considered that end users would require sufficient notice of the withdrawal of these services, particularly for critical applications.
- 15.21 As KCOM had not yet formulated plans to withdraw these services, we considered it appropriate to maintain the obligation to supply these services in order to prevent them from being withdrawn prematurely. Once KCOM has formulated plans to withdraw these services and we are satisfied that KCOM has provided sufficient notice to address end-users' concerns, we will consider any steps which may be appropriate in relation to this proposed obligation. For example, we could alter the obligation to supply to facilitate withdrawal, by removing the obligation for KCOM to supply new services.

Excessive pricing

- 15.22 In a competitive market, prices could be expected to be cost reflective. However, where a provider has SMP, competition cannot be expected to provide effective constraints and *ex ante* regulation may be desirable to prevent charges from being set at an excessive level.
- 15.23 In these markets, we proposed KCOM had SMP and as previously discussed there is limited likelihood of significant competitive entry and we considered that KCOM would have the ability to charge excessive prices to the detriment of end users.
- 15.24 The prohibition on undue discrimination and requirement to publish a reference offer only do a limited amount to address the incentive to charge excessive prices, and we considered, in light of our current understanding of the scale of the potential issue in Hull and the costs of intervention, whether further measures would be appropriate in the Hull area.
- 15.25 One possible solution to address the risk of excessive pricing would be to impose a charge control. Under an RPI +/-X form of charge control regulation, incentives are normally created for the dominant provider to increase efficiency, thereby imitating the effect of a competitive market.
- 15.26 We considered whether a charge control would be appropriate at this point. Our decision was that it would not be appropriate to impose this remedy at this stage. In reaching this view, we considered in particular that it would not be proportionate to impose such a remedy. While a charge control is in principle likely to be effective in addressing the risk of any excessive pricing by KCOM, we also needed to consider what is the minimum necessary remedy to achieve the aim pursued in light of

available evidence. In this regard, to start with, we noted that KCOM had not previously been subject to a charge control in these markets. Also, we noted that we had neither received any complaints from customers and competitors, nor had we received responses to the CFI expressing concerns about retail prices. We also considered that a charge control could at this stage produce adverse effects which were disproportionate to the aim that would be pursued by any such control, in particular taking account of the significant costs to KCOM and us of formulating a charge control.

- 15.27 We also considered the alternative of imposing a cost orientation obligation to address the possible risk of excessive pricing. However, we believed that a cost orientation obligation in the present circumstances would be disproportionate for similar reasons discussed above in relation to a charge control. We considered, in addition, that such an obligation, if used as the primary control on KCOM's charges, would not address the lack of incentive properties that we thought would be required in relation to KCOM for this remedy to be effective.
- 15.28 The alternative we suggested in the June BCMR Consultation was to monitor prices against a suitable benchmark for competitive prices.
- 15.29 As we discuss later in this section, we considered that BT's wholesale prices provided an initial suitable benchmark against which to assess KCOM's wholesale charges. We considered that KCOM's wholesale charges with a reasonable allowance for KCOM's gross retail margin (to cover retail costs including a reasonable rate of return) would be a suitable candidate for a benchmark against which to assess KCOM's retail prices.
- 15.30 At the retail level, we considered that for now the appropriate and proportionate approach was for KCOM to provide greater transparency about its retail leased lines charges. Accordingly, we proposed that KCOM should be obliged to publish a reference offer including prices, terms and conditions.

Undue discrimination

- 15.31 As noted above, our analysis suggested that KCOM had SMP and, if so, it would have the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers in these retail markets. We therefore considered that KCOM would have the incentive to discriminate unduly against particular groups of retail customers, for example by charging excessive prices, imposing unfair terms or providing inferior service quality. KCOM also has the incentive to discriminate unduly against particular groups of retail customers in order to restrict competition e.g. by charging higher prices where competition is weak and lower prices where it is stronger, or setting higher prices to OCPs when they purchase KCOM's retail products. In order to address this risk, we proposed that KCOM should be subject to an obligation not to discriminate unduly.
- 15.32 To provide transparency and to support the proposed obligation, we considered that KCOM should also be required to publish a reference offer specifying prices, terms and conditions.¹²⁵⁵ As noted above, we took into account the need for this proposed obligation in assessing the appropriateness of a specific pricing remedy.

¹²⁵⁵ Absent the remedies, retail prices for business products are not likely to be particularly transparent, making it more difficult to detect undue discrimination or other anticompetitive practices.

Pricing

- 15.33 In conjunction with obligations not to discriminate unduly, we proposed that the dominant provider should publish its prices in a reference offer and not to deviate from them in order to reduce the risk of unduly discriminatory pricing.
- 15.34 In the retail low bandwidth TI market and the retail low bandwidth AI market, there is relatively little competition, particularly for large local institutions whose business connectivity requirements are mostly within the Hull area where it appears that KCOM is the only supplier. Given this, the main impact of requiring KCOM not to deviate from published prices would be to restrict its ability to offer discounts to large local users which might lead to higher prices for them. We therefore proposed that KCOM should have some flexibility to price discriminate so that it may offer discounts where it is efficient to do so.
- 15.35 In order to provide the necessary transparency about retail prices, we proposed that KCOM should be required to publish the maximum charges that it offers for retail services in these markets (i.e. the prices before any bespoke discounts for larger users). These prices would be used as the basis for the pricing benchmarks discussed above in order to ensure that the comparison reflects the prices available to all users.
- 15.36 This does not mean that KCOM would have complete flexibility to price discriminate, as discounts that are offered purely to forestall competition would still be considered unduly discriminatory. In the event of an alleged breach we would judge each alleged breach on a case-by-case basis.

Remedies proposed in the June BCMR Consultation

- 15.37 The table below summarises the competition problems we identified and the remedies we proposed to address them.

Summary of competition problems and proposed remedies

Competition problems	RETAIL remedies: Low bandwidth AI market Low bandwidth TI market
<ul style="list-style-type: none"> Refusal to supply 	<ul style="list-style-type: none"> Requirement to supply retail leased lines
<ul style="list-style-type: none"> Price discrimination Non-price discrimination, e.g. <ul style="list-style-type: none"> Different terms Delaying tactics (late provisioning etc.) Strategic product design Exclusive dealing Quality discrimination Different SLAs & SLGs Predatory pricing; Margin squeeze; Excessive pricing. 	<ul style="list-style-type: none"> Requirement not to discriminate unduly Requirement to publish a reference offer

Assessment of competition problems in the Hull area wholesale market

15.38 The competition problems and the appropriate remedies are very similar for the wholesale markets for low bandwidth TISBO, medium bandwidth TISBO, high and very high bandwidth TISBO and low bandwidth AISBO in the Hull area and we therefore consider them together in our assessment below.

Competition problems identified in the Hull area wholesale market

15.39 In light of our SMP assessment, we consider that, in the absence of *ex ante* regulation, KCOM would have the incentives, and its market power would afford it the ability to:

- refuse to supply access at the wholesale level and monopolise the provision of services in the retail TI and AI leased lines;
- engage in undue price discriminatory practices – e.g. by charging its competing providers more than the amount charged to its downstream divisions;
- engage in undue non-price discriminatory practices – e.g. by supplying the same products on different terms and conditions, different timescales for provision and fault repair, quality discrimination, different SLAs and SLGs, creating new variants to fulfil the requirements of its downstream division and taking longer to address, or avoiding addressing the requirements of its competitors;
- charge excessively high prices; and
- refuse to supply, or engage in delaying tactics in the provision of, new network access services requested by its competitors.

15.40 We consider that KCOM would have the incentive to engage in these practices in order to affect the development of competition in the related downstream retail markets adversely and thus enable it to act independently of competitors, customers and ultimately of consumers in those markets.

15.41 To assess the appropriate remedies to address these competition problems, we carried out an analysis of current competition in the TISBO and low bandwidth AISBO markets in the Hull area and we have taken into account views expressed by stakeholders in response to our CFI and the June BCMR Consultation.

Insufficiency of national and Community competition law remedies

15.42 We consider national and Community competition law remedies would be insufficient to address the competition problems we identified. In particular:

- we do not consider appropriate remedies could be imposed under competition law. In this respect, we refer to the nature and scope of the remedies we are imposing to address the competition problems:
 - Condition 1 provides, amongst other things, that the provision of general network access “shall also include such associated facilities as are reasonably necessary for the provision of network access and such other entitlements as

Ofcom may from time to time direct.¹²⁵⁶ This direction-making power is important since it allows us to direct KCOM as to the application of the general network access obligation – whether that should be in one or all of the TISBO and low bandwidth AISBO markets – and so ensure its application can be specifically tailored to address the competition problem(s) we have identified, both now and over the course of the three year review period

- we are imposing accounting separation obligations; and
- the *ex ante* remedies we are imposing provide, amongst other things, that new products and services are captured by the relevant SMP obligations,¹²⁵⁷ thus ensuring their continued effectiveness to address the competition problems over the course of the three year review period.
- we consider the requirements of intervening are extensive, as evidenced by the nature and scope of the package of remedies we are imposing;
- we consider that providing certainty in the Hull area wholesale markets is of paramount concern, both to KCOM and to any prospective competitor, and we consider this is best achieved through *ex ante* regulation which, in comparison to competition law remedies, would:
 - provide greater clarity on the types of behaviour that is/is not allowed;
 - allow for timely intervention – proactively by us and/or by parties being regulatory disputes to us for swift resolution¹²⁵⁸ – and consequently timely enforcement using the considerable enforcement powers accorded us under the Act to secure compliance,¹²⁵⁹ through a process with which the market in general is familiar and which is also set out in the Act..

Result of our assessment of the competition problems

15.43 In light of our market analyses, in particular our SMP assessment, and our assessment of the insufficiency of national and Community competition law remedies to address the competition problems we identified, we consider over the course of the forward-looking review period of three years that competition would be ineffective in:

- the wholesale market for low bandwidth TISBO in the Hull area at bandwidths up to and including 8Mbit/s;
- the wholesale market for medium bandwidth TISBO in the Hull area at bandwidths above 8Mbit/s and up to and including 45Mbit/s;
- the wholesale market for high bandwidth TISBO in the Hull area at bandwidths over 45Mbit/s and up to and including 155Mbit/s;

¹²⁵⁶ Condition 1.3.

¹²⁵⁷ See for example, Condition 6 which provides that the supply of retail leased lines – i.e. both existing and new – is on fair and reasonable terms, conditions and charges.

¹²⁵⁸ See sections 185 to 191 of the Act, in particular section 185(1A).

¹²⁵⁹ See sections 94 to 104 of the Act.

- the wholesale market for very high bandwidth TISBO in the Hull area at 622Mbit/s bandwidth;
- the wholesale market for low bandwidth AISBO in the Hull area, bandwidths up to and including 1Gbit/s.

15.44 We now turn to the approach we adopted in the June BCMR consultation which followed on from our assessment of the competition problems.

Approach to wholesale remedies in the June BCMR Consultation

Assessment of appropriate remedies

Refusal to supply

- 15.45 Our SMP analysis showed that the lack of competition in the wholesale markets in the Hull area stemmed primarily from entry barriers, particularly the magnitude of the costs of duplicating network infrastructure relative to the revenues available from communications services. These factors meant that KCOM's costs of supply (which are largely sunk) were significantly lower than its competitors' and that, as a consequence, it was unlikely to be economically viable for KCOM's competitors to invest in the provision of network facilities on a sufficient scale to provide effective constraint on KCOM's SMP in the downstream markets. Further, competitors were unlikely to be willing to make the necessary investments in the TISBO markets as all of them were declining.
- 15.46 Given these entry barriers, we considered that an obligation for KCOM to meet reasonable requests for access to its network would assist in promoting competition. Such an obligation would overcome the entry barriers by allowing CPs to provide services using network components rented from KCOM. We considered that, in the absence of such a requirement, KCOM would have an incentive not to provide such access, and would be able to monopolise the provision of services in the downstream markets.

Excessive pricing

- 15.47 In a competitive market, prices could be expected to be cost reflective. However, where a provider has SMP, competition cannot be expected to provide effective constraints and ex-ante regulation may be desirable to prevent charges from being set at an excessive level. Such intervention could also have as its objective the aim of promoting efficiency and of allowing the development of effective competition in downstream markets.
- 15.48 In these markets, we proposed that KCOM has SMP and as previously discussed there was little likelihood of significant competitive entry and KCOM had the ability to charge excessive prices to the detriment of end users.
- 15.49 The prohibition on undue discrimination and requirement to publish a reference offer only do a limited amount to address the incentive to charge excessive prices, and we considered, in light of our current understanding of the scale of the potential issue in Hull and the costs of intervention, whether further measures would be appropriate in the Hull area.
- 15.50 One possible solution to address the risk of excessive pricing would be to impose a charge control. Under an RPI +/-X form of charge control regulation, incentives are

normally created for the dominant provider to increase efficiency, thereby imitating the effect of a competitive market.

- 15.51 We considered whether a charge control would be appropriate at this point and decided that at this stage it was not. In reaching this view, we considered in particular that it would not be proportionate to impose such a remedy. While a charge control is in principle likely to be effective to address the risk of any excessive pricing by KCOM, we also needed to consider what the most proportionate remedy was to achieve the aim pursued in light of available evidence. In this regard, to start with, we noted that KCOM had not previously been subject to a charge control in these markets. Also, we had neither received any complaints from customers and competitors, nor had we received responses to the CFI expressing concerns in this regard.¹²⁶⁰ We also considered that a charge control could at this stage produce adverse effects which were disproportionate to the aim that would be pursued by any such control, in particular taking account of the significant costs to KCOM and us of formulating a charge control.
- 15.52 We also considered the alternative of imposing a cost orientation obligation to address the possible risk of excessive pricing. However, we believed that a cost orientation obligation in the present circumstances would be disproportionate for similar reasons discussed above in relation to a charge control. We considered, in addition, that such an obligation, if used as the primary control on prices, would not address the lack of incentive properties that we thought would be required in relation to KCOM for this remedy to be effective.
- 15.53 The alternative we proposed in the June BCMR Consultation was to monitor prices against a suitable benchmark for competitive prices.
- 15.54 We considered that BT's wholesale prices provided an initial suitable benchmark against which to assess KCOM's wholesale charges.
- 15.55 We therefore considered that for now the more appropriate and proportionate approach was for KCOM to provide greater transparency about its wholesale leased lines charges. Accordingly, we proposed that KCOM should be obliged to publish a reference offer including prices terms and conditions.

Undue discrimination

- 15.56 As noted above, our analysis suggested that KCOM had SMP and, if so, it would have the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers in these retail markets. We therefore considered that KCOM would have the incentive to discriminate by providing wholesale services on prices, terms and conditions that favour its own retail activities in a way that would have a material adverse effect on competition and in turn consumers. For example, KCOM has the incentive to charge competing providers more than the amount charged to its own downstream units or it might strategically provide the same services but within different delivery timescales. In order to address this risk, we proposed that KCOM should be subject to an obligation not to discriminate unduly.

¹²⁶⁰ Our statement in the June BCMR Consultation was in error. In its response to the CFI, Everything Everywhere reported that prices for lease lines in Hull were prohibitive and it urged Ofcom to place tighter controls on KCOM's prices.

- 15.57 To provide transparency and to support this obligation we considered it appropriate to require KCOM to publish a reference offer specifying prices, terms and conditions. To ensure that competing providers have sufficient time to prepare for changes to KCOM's wholesale services we also considered that KCOM should be required to give advance notice of changes to prices, terms and conditions and changes to technical information about its wholesale services. As noted above, we took into account the need for this proposed obligation in assessing the appropriateness of a specific pricing remedy.

Pricing

- 15.58 Often, in conjunction with obligations not to discriminate unduly, we require the dominant provider to publish its prices in a reference offer and not to deviate from them in order to reduce the risk of unduly discriminatory pricing.
- 15.59 In these markets, there is relatively little competition, particularly for large local institutions whose business connectivity requirements are mostly within the Hull area where it appeared that KCOM was the only supplier. Given this, the main impact of requiring KCOM not to deviate from published prices would be to restrict its ability to offer discounts to large local users which might lead to higher prices for them. We therefore proposed that KCOM should have some flexibility to price discriminate so that it may offer discounts where it is efficient to do so.
- 15.60 In order to provide the necessary transparency about wholesale prices, we proposed that KCOM should be required to publish the maximum charges that it offers for wholesale services in these markets (i.e. the prices before any bespoke discounts). These prices would be used as the basis of the pricing benchmarks discussed above in order to ensure that the comparison reflects the prices available to smaller users.
- 15.61 This does not mean that KCOM would have complete flexibility to price discriminate, and discounts that are offered purely to forestall competition would still be considered unduly discriminatory. In the event of an alleged breach we would judge each alleged breach on a case by case basis.

Remedies proposed in the June BCMR Consultation

- 15.62 The table below summarises the competition problems we identified and the remedies we proposed to address them.

Summary of competition problems and proposed remedies

Competition problems	WHOLESALE remedies: Low bandwidth AISBO market TISBO markets
<ul style="list-style-type: none"> Refusal to supply 	<ul style="list-style-type: none"> Requirement to provide network access on reasonable request
<ul style="list-style-type: none"> Price discrimination Non-price discrimination, e.g. <ul style="list-style-type: none"> Different terms Delaying tactics (late provisioning etc.) Strategic product design Exclusive dealing Quality discrimination Different SLAs & SLGs Predatory pricing; Margin squeeze; Excessive pricing. 	<ul style="list-style-type: none"> Requirement not to discriminate unduly Requirement to publish a reference offer Requirement to notify charges, terms and conditions Requirement to notify technical information

Other considerations

Interconnection and accommodation services for the TISBO and AISBO markets

- 15.63 In the June BCMR Consultation we noted that large scale wholesale entry was not expected in these markets. Nor had there been any such demand since the commencement of wholesale obligations in the wholesale TISBO market since the 2003/04 Review. Where competition has materialised, we understood that it had done so by relying on KCOM's retail products. Thus the evidence suggested that there was very limited, if any, demand for investments in interconnection facilities and services in the Hull area.
- 15.64 Interconnection and accommodation services fall within the scope of the network access obligations that we proposed for KCOM in these markets.¹²⁶¹ KCOM would be required to meet reasonable requests for interconnection and accommodation services in relation to wholesale services in these markets. We considered this was sufficient to address the competition problems identified. Given the lack of demand for interconnection and accommodation services, we did not propose to oblige KCOM to provide specific interconnection or accommodation products at this time.
- 15.65 Specific obligations were inadvertently included in the draft conditions proposed in the June BCMR Consultation and have been removed from the final versions in Annex 7.

Consultation responses

- 15.66 We received three responses to the June BCMR Consultation on the regulation to be applied in Hull, and only one extensive response, which was from KCOM. One

¹²⁶¹ Network access is defined in sections 151(3) and (4) of the Act and includes interconnection services and/or any services or facilities that would enable another CP to provide electronic communications services or electronic communication networks. We consider that a requirement to provide network access would, therefore, include any ancillary services as may be reasonably necessary for a Third Party to use the services.

respondent was concerned that the proposal was too stringent, and the other that it provided insufficient protection.

- 15.67 Zen Internet requested that KCOM's retail prices be closely monitored to ensure the ability to apply bespoke pricing was being fairly applied; and expressed concern that in the absence of a charge control, KCOM's wholesale prices may be uncompetitive.
- 15.68 Everything Everywhere noted that mobile backhaul via microwave solutions was not a true substitute to mobile backhaul via leased lines, and would become decreasingly attractive with the higher bandwidths required for LTE deployment. It therefore considered that we should impose a remedy requiring the supply of suitable mobile backhaul products.
- 15.69 In the June BCMR Consultation we omitted to report that in its response to our CFI, Everything Everywhere raised concerns about leased lines pricing in Hull. It considered that KCOM's leased lines prices were prohibitive and urged Ofcom to take steps to constrain KCOM's charges.
- 15.70 KCOM made a detailed submission the main points of which were:
- Prospects for competition – KCOM considered that our assessment of the prospects for competition in Hull was overly pessimistic and noted that MS3 Communications is deploying a fibre access network in Hull and plans to offer leased line services.
 - Regulation of retail markets – KCOM considered that retail regulation is unnecessary and unwarranted as there was no suggestion of refusal to supply by KCOM or any allegations of excessive pricing or of undue discrimination. KCOM was also argued that our proposal to re-regulate the retail TI market that was previously deregulated was unprecedented. Preparation of a retail reference offer would involve a great deal of work as would assessing existing customer contracts for compliance with the new obligations.
 - Cost recovery – KCOM noted that some retail TI low bandwidth services are reaching the end of their life. It was concerned that retail regulation, particularly price regulation would prevent it recovering the costs associated with these services.
 - Price benchmarking – KCOM considered that voluntary commitments on pricing (by KCOM) would be a more proportionate approach to benchmarking. It considered benchmarking of its prices against BT's to be inappropriate and unworkable. In particular, KCOM considered that:
 - Significant differences between KCOM's pricing structure and BT's would make a meaningful comparison difficult.
 - Technical differences between KCOM's network and BT's (including architecture, scale and utilisation) would make meaningful comparison difficult.
 - KCOM considered that BT's DSAC to be a more appropriate comparator. In its view it would not be correct to conclude that KCOM's charges are excessive based on a comparison with BT's wholesale prices given that Ofcom has used DSAC as a benchmark for excessive pricing by BT.

- BT's charge controls and hence its prices may take market specific factors into account which would not be relevant to KCOM.
 - Implementation timescales for retail regulation - KCOM considered one month to be insufficient time to implement the retail regulation as proposed, suggesting Ofcom allow at least 6 months.
 - Active vs. passive remedies - KCOM agreed that passive remedies were not required to promote downstream competition.
 - Regulation of wholesale services - KCOM welcomed the flexibility to offer discounts on published prices.
- 15.71 KCOM also submitted to Ofcom on a confidential basis a report by economic consultancy NERA concerning the appropriateness of benchmarking KCOM's prices against BTs.

Ofcom's considerations

Prospects for competition

- 15.72 We have considered KCOM's comments about the prospects for competition in our SMP assessment in section 7.

Mobile backhaul obligation

- 15.73 We do not consider that a specific mobile backhaul remedy is necessary as EE suggests because generic wholesale leased lines services are used for mobile backhaul. We also note that KCOM is under an obligation to meet reasonable requests for network access, thus mobile operators could request specific features such as synchronisation if they are required.

Retail regulation

- 15.74 Whilst we acknowledge that retail leased lines markets is not included in the EC's Recommendation¹²⁶², we remain of the view that ex-ante regulation is appropriate in light of our market analysis, particularly our SMP assessment. We are satisfied that the 'three criteria test' specified in the Recommendation is satisfied in this case. We set out our assessment in detail in Section 7.

Price benchmarking and voluntary commitments

- 15.75 We remain of the view that monitoring KCOM's charges against a suitable benchmark is a proportionate response to the risk of excessive pricing that we have identified in these markets.
- 15.76 We acknowledge that KCOM and BT have adopted differing pricing structures for their wholesale leased lines services and may also have differing approaches to recovering their costs (for example the balance between connection and rental charges). However, we consider that notwithstanding these differences a meaningful

¹²⁶² Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services.

price comparison can be produced provided the comparison is constructed so as to assess the overall level of charges for the respective leased line services rather than to mechanistically compare individual charges.

- 15.77 We proposed BT's wholesale charges as a suitable benchmark because BT's wholesale charges are subject to RPI-X charge controls. The controls are designed amongst other things to drive BT's revenues into line with its forecast costs over the period of the control and to incentivise BT to incur its cost efficiently, with a view to producing an outcome similar to that we might expect from an efficient operator in a hypothetically competitive market. We would expect KCOM's charges in Hull to reflect similar outcomes and therefore consider that BT's charges to be an appropriate benchmark. Whilst we use BT's DSAC in the current charge controls as a test of whether an individual charge is excessive, DSAC figures are by definition well above the FAC figures with which the charge controls aim to align average costs. Consequently we do not consider that BT's DSAC figures would be an appropriate basis for the benchmarks.
- 15.78 As discussed above, since the June BCMR Consultation we have accepted voluntary commitments from KCOM in relation to its wholesale prices. We consider that these commitments together with the price publication obligations we are imposing in the wholesale and retail markets provide stakeholders with valuable reassurance about leased line charges in Hull over the next three years. Whilst we cannot fetter our discretion in this matter we consider that the commitments reduce the likelihood that we will need to intervene in respect of KCOM's charges.

Cost recovery

- 15.79 Benchmarking is not a formal price control mechanism and will not prevent KCOM setting its charges at a level that will recover its efficiently incurred costs.
- 15.80 As discussed above, we acknowledge that some of KCOM's low bandwidth leased lines services may be approaching the end of their life. As comparable services offered by BT are also approaching the end of their life, this should not undermine the validity of benchmarking as a means of monitoring KCOM's charges for such services.

Timescales for implementation of retail regulation

- 15.81 In view of KCOM's request we have allowed six months for KCOM to prepare its retail reference offers. We have modified SMP condition 8 accordingly.

Ofcom's conclusions on the appropriate remedies

- 15.82 Having considered all consultation responses received, and having reviewed all evidence available to us, we have concluded that the most appropriate remedies to address the competition problems identified are those proposed in the June and November¹²⁶³ BCMR Consultations. As noted above we have also accepted a voluntary commitment from KCOM in relation to its wholesale charges. This commitment is reproduced in Annex 11.

¹²⁶³ See Section 16 for our conclusions, and considerations of responses received, in relation to the imposition of accounting separation obligations.

- 15.83 Below we set out the rationale for each of the remedies that we are applying to KCOM in the Hull area, together with how we consider these remedies to satisfy the relevant legal tests.

Retail market remedies

- 15.84 Under section 91 of the Act where wholesale regulation in the upstream market would not suffice to achieve our duties and objectives with regard to the relevant retail market, the sorts of SMP conditions authorised or required by sections 87 to 89 of the Act may be set in that retail market.
- 15.85 As set out above, in light of our market analysis, particularly our SMP assessment, we do not consider that wholesale regulation would address the competition problems we have identified at the retail level.

Requirement to supply retail leased lines

Aim of regulation

- 15.86 As discussed above, we consider there is a risk that KCOM might unreasonably refuse to supply retail leased lines services. To address this risk we consider it appropriate to impose an obligation for KCOM to supply retail leased lines on reasonable request and to supply them on fair and reasonable terms, conditions and charges as we may from time to time direct.

Legal tests

- 15.87 We are satisfied that the SMP condition (as set out in Annex 7) meets the various tests set out in the Act.
- 15.88 First, section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide such network access as Ofcom may, from time to time, direct. These conditions may, pursuant to Section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.
- 15.89 When considering the imposition of such conditions in a particular case we take into account the six factors set out in section 87(4), including *inter alia*:
- the technical and economic viability of installing and using other facilities, including the viability of other network access products whether provided by the dominant provider¹²⁶⁴ or another person¹²⁶⁵, that would make the proposed network access unnecessary;
 - the feasibility of the proposed network access; and
 - the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed (taking account of any public investment made).

¹²⁶⁴ i.e. in this instance KCOM.

¹²⁶⁵ i.e. other CPs.

- 15.90 In imposing the requirement to supply retail leased lines (on reasonable request and to supply them on fair and reasonable terms, conditions and charges as we may from time to time direct), we have taken all of the six factors into account.
- 15.91 Secondly, we have had regard for to our duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that we consider the requirement to supply retail leased lines furthers the interests of citizens and consumers in relation to communications matters by ensuring the availability of retail leased lines services in these markets.
- 15.92 Section 47 of the Act requires conditions to be objectively justifiable, proportionate and transparent. The SMP condition is:
- objectively justifiable, in that, absent this obligation, there is a risk KCOM might not supply retail leased lines to some or all end-users;
 - not unduly discriminatory, as only KCOM and no other operator has been found to hold a position of SMP in these markets and would therefore have the ability and incentive to exploit customers by not supplying end users;
 - proportionate since it is the least onerous obligation which addresses this particular risk of harm to end-users and citizens and will otherwise allow KCOM to refuse to supply these services. In particular, wholesale remedies alone would be insufficient because there is little prospect that alternative suppliers would step in using wholesale inputs were such services withdrawn by KCOM; and
 - transparent in that the SMP condition is clear in its intention and because the purpose and meaning of the requirement and the reasons for imposing it are clearly explained in this document.
- 15.93 Regarding the obligation to supply on fair and reasonable terms, conditions and charges, we consider this is appropriate in order to address sufficiently the competition problems we have identified in these retail markets and ensure end-users derive maximum benefit in terms of price and quality. In this respect, we have also taken into account the extent of investment of KCOM in the matters to which the scope of the fair and reasonable obligation would relate.¹²⁶⁶

Requirement not to discriminate unduly

Aim of regulation

- 15.94 As discussed above we consider that KCOM has the incentive to distort competition by discriminating against particular groups of retail customers. To address this risk, we consider that In the retail low bandwidth TI market and the retail low bandwidth AI market KCOM should be subject to a requirement not to discriminate unduly against particular persons or against a particular description of persons in relation to matters connected with the supply of retail leased lines. We confirm that this obligation applies to both non-pricing *and* pricing practices.¹²⁶⁷

¹²⁶⁶ In this respect, we consider the extent of investment – if required at all – would not be significant given the strictly behavioural nature of this specific remedy – i.e. it serves to impose an *ex ante* qualification on the manner in which KCOM must comply with the requirement to supply leased lines on reasonable request.

¹²⁶⁷ See Section 9 for further discussion.

- 15.95 As discussed above, we permit KCOM to offer bespoke prices and require it to publish only its maximum charges in its reference offer. This does not mean that KCOM has complete flexibility to price discriminate – the obligation requires that any pricing and non-pricing practices must not be unduly discriminatory. In the event of an alleged breach we will judge each alleged breach on a case-by-case basis.

Legal tests

- 15.96 We are satisfied that the SMP condition (as set out in Annex 7) meets the various tests set out in the Act.
- 15.97 First, we consider section 87(6)(a) of the Act authorises the setting of an SMP condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.
- 15.98 Secondly, we have had regard for to our duties under section 3, and all the Community requirements set out in section 4, of the Act. We note in particular that the SMP condition is aimed at preventing the distortion of competition and harm to particular groups of end-users in the form of high prices, unfair terms or inadequate service that might occur if KCOM had the freedom to unduly discriminate in the provision of services in these markets.
- 15.99 Section 47 of the Act requires conditions to be objectively justifiable, proportionate and transparent. The SMP condition is:
- objectively justifiable, in that KCOM would otherwise be able to distort competition by discriminating against particular groups of retail customers – e.g. through charging high prices where competition is weak and lower prices where it is stronger. It also ensures that KCOM does not abuse its SMP position by charging excessive prices, imposing unfair terms or offering inadequate quality of service to particular groups of customers. The requirement therefore promotes competition and furthers the interests of consumers;
 - not unduly discriminatory, as only KCOM and no other operator has been found to hold a position of SMP in these markets and would therefore have the ability and incentive to exploit customers by charging excessive prices, imposing unfair terms or offering inadequate quality of service;
 - proportionate because it is the least onerous obligation which addresses this particular risk of harm to competition and also because we have allowed KCOM the flexibility to price discriminate where it is efficient to do so. As noted in relation to the obligation to supply, we do not consider wholesale remedies would be sufficient because there little prospect that alternative suppliers would step in using wholesale inputs were KCOM to charge excessive prices, impose unfair terms or offer inadequate quality of service; and
 - transparent in that the SMP condition is clear in its intention and because the purpose and meaning of the obligation and the reasons for imposing it are clearly explained in this document.

Requirement to publish a reference offer (including maximum charges, terms and conditions)

Aim of regulation

15.100 We consider it appropriate that KCOM should be subject to an obligation to publish a reference offer specifying terms and conditions and maximum retail prices for its services in these markets. This obligation will provide transparency about prices, terms and conditions in support of the non-discrimination obligation and to enable KCOM's retail prices to be monitored. In the absence of such an obligation, KCOM would have an incentive not to publish this information with the result that discriminatory conduct or excessive pricing would be less visible.

15.101 We therefore require KCOM to publish a reference offer including at least the following:

- technical characteristics of the services including the physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point;
- maximum charges, including the initial connection charges, the periodic rental charges and other charges;
- information concerning the ordering procedure;
- contractual details; and
- any refund procedure.

15.102 This obligation prohibits KCOM from departing from the terms and conditions in the reference offer and requires it to comply with any directions Ofcom may make from time to time under the condition.

15.103 As discussed above, KCOM is required to publish maximum charges that must not be exceeded but is permitted to offer bespoke discounts that are not published in the reference offer.

Legal tests

15.104 We are satisfied that the SMP condition (as set out in Annex 7) meets the various tests set out in the Act.

15.105 First, section 87(6) of the Act authorises the setting of SMP services conditions that require the dominant provider to publish information about network access to ensure transparency and to publish terms and conditions.

15.106 Secondly we have had regard for to our duties under section 3, and all the Community requirements set out in section 4, of the Act. We note that the SMP condition is aimed in particular at preventing BT from varying terms and conditions in a way which would harm citizens and consumers and at providing transparency about the highest prices that KCOM charges to enable us to monitor retail prices.

15.107 Section 47 of the Act requires conditions to be objectively justifiable, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that it provides certainty to operators and prevents KCOM from withholding information from customers and competitors, or misusing information in a way which could harm competition, which would be a real risk in the absence of the conditions. In addition the SMP condition facilitates monitoring of KCOM's retail prices and monitoring compliance with the other obligations, notably the obligation not to unduly discriminate;
- not unduly discriminatory, as only KCOM and no other operator has been found to hold a position of SMP in these markets and would therefore have the ability and incentive to exploit customers by withholding or misusing information;
- proportionate, since it is targeted at addressing the SMP that we have found KCOM holds in these markets. This obligation supports the other SMP conditions imposed to address KCOM's SMP in this market. It provides transparency on retail pricing as a safeguard against excessive pricing and it ensures that CPs have access to information they need to compete fairly with KCOM. As noted in relation to the obligation to supply, we do not consider wholesale remedies would be sufficient because there is little prospect that alternative suppliers would step in using wholesale inputs were KCOM to withhold or misuse information. Additionally, a wholesale remedy would not be capable of supporting the other obligations at the retail level referred to above; and
- transparent in that the SMP condition is clear in its intention and because the purpose and meaning of the obligation and the reasons for imposing it are clearly explained in this document.

Wholesale market remedies

Requirement to provide network access

Aim of regulation

15.108 As discussed above, in order to promote competition and to address the risk of refusal to supply, we consider it is appropriate to impose a requirement for KCOM to meet reasonable requests for network access and to supply such network access on fair and reasonable terms and conditions including charges.¹²⁶⁸

15.109 The way in which Ofcom might assess reasonable demands for access is set out in the Access Guidelines. We consider that it is appropriate in cases where a CP has SMP to impose an access obligation on that provider requiring it to meet all reasonable requests for network access within the relevant wholesale market, irrespective of the technology required, on fair and reasonable terms, conditions and charges.

Legal tests

15.110 We are satisfied that that the SMP condition (as set out in Annex 7) meets the various tests set out in the Act.

15.111 First, section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide such network access as Ofcom may, from

¹²⁶⁸ See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of assurance of access.

time to time, direct. These conditions may, pursuant to Section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.

15.112 When considering the imposition of such conditions in a particular case we take into account the six factors set out in section 87(4), including *inter alia*:

- the technical and economic viability of installing and using other facilities, including the viability of other network access products whether provided by the dominant provider¹²⁶⁹ or another person¹²⁷⁰, that would make the proposed network access unnecessary;
- the feasibility of the proposed network access;
- the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed (taking account of any public investment made); and
- the need to secure effective competition, including where it appears to us to be appropriate, economically efficient infrastructure based competition, in the long term.

15.113 In proposing the general requirement for the provision of network access, we have taken all of the six factors into account. In particular, having considered the viability of KCOM's competitors making network investments we consider that the network access obligation is necessary for securing effective competition in the long term. The requirement for KCOM only to meet reasonable network access requests also ensures that due account is taken of the technical and economic viability and of the investment made by KCOM initially in providing the network.

15.114 Secondly, we have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by facilitating the development of competition in downstream markets.

15.115 Thirdly, section 47 of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that it facilitates and encourages access to KCOM's network and therefore promotes competition to the benefit of consumers;
- not unduly discriminatory, as it is imposed only on KCOM and no other operator has been found to hold a position of SMP in these markets;
- proportionate, since it is targeted at addressing the market power that we have found KCOM holds in these markets and does not require it to provide access if it is not technically feasible or reasonable; and

¹²⁶⁹ i.e. in this instance KCOM.

¹²⁷⁰ i.e. other CPs.

- transparent in that the SMP conditions is clear in its intention to ensure that KCOM provides access to its networks in order to facilitate effective competition.

15.116 Regarding the obligation to supply on fair and reasonable terms, conditions and charges, we consider this is appropriate in order to promote efficiency and sustainable competition in the TISBO and AISBO markets and to provide the greatest possible benefits to end-users by enabling OCPs to purchase network access at levels that should be expected in a competitive wholesale market. In this respect, we have also taken into account the extent of investment of KCOM in the matters to which the broadened scope of the fair and reasonable obligation would relate.¹²⁷¹

15.117 For all the reasons set out above, we consider that the SMP condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement not to discriminate unduly

Aim of regulation

15.118 As discussed above we consider it appropriate that KCOM should be subject to a requirement not to discriminate unduly in the provision of wholesale services in these markets. In the absence of such a requirement, KCOM would have an incentive to provide the requested network access on terms and conditions that discriminate in favour of its own downstream divisions.¹²⁷²

15.119 As discussed above, we permit KCOM to offer bespoke prices and require it to publish only its maximum charges in its reference offer. This does not mean that KCOM will have complete flexibility to price discriminate, and discounts that are offered purely to forestall competition will still be considered unduly discriminatory. In the event of an alleged breach we will judge each alleged breach on a case by case basis.

Legal tests

15.120 We are satisfied that the SMP condition (as set out in Annex 7) meets the various tests set out in the Act.

15.121 First, we have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by seeking to prevent KCOM from leveraging its SMP into downstream markets.

15.122 Second, section 47 of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by KCOM discriminating unduly in favour of its own downstream activities or between different competing providers;

¹²⁷¹ In this respect, we consider the extent of investment – if required at all – would not be significant given the strictly behavioural nature of this specific remedy – i.e. it serves to impose an *ex ante* qualification on the manner in which KCOM must comply with the main obligation which is to meet reasonable requests for network access.

¹²⁷² See, in this respect, the competition issues which the BEREC Common Position identifies as arising frequently in relation to seeking to achieve the objective of a level playing field.

- not unduly discriminatory, as the SMP condition is imposed only on KCOM and no other operator has been found to hold a position of SMP in these markets;
- proportionate since it seeks only to prevent undue discrimination whilst allowing KCOM flexibility to offer discounts where it is efficient to do so; and
- transparent in that the SMP condition is clear in what it is intended to achieve.

Transparency and notification obligations

15.123 We have concluded that KCOM should be subject to a set of obligations, aimed at promoting transparency and ensuring non-discrimination,¹²⁷³ which we set out below.

Requirement to publish a reference offer including maximum charges, terms and conditions

Aim of regulation

15.124 As discussed above, we consider that to provide transparency and to support the non-discrimination obligation KCOM should be required to publish a reference offer. This will:

- assist transparency for the monitoring of potential anti-competitive behaviour;
- facilitate benchmarking of KCOMs prices against BT's as discussed above;
- give visibility to the terms and conditions on which other providers will purchase wholesale services;
- help ensure stability in markets without which we consider incentives to invest might be undermined and market entry less likely; and
- facilitate speedier negotiations, avoiding possible disputes and giving confidence to those purchasing wholesale services that they are being provided on non-discriminatory terms. Without this, market entry might be deterred to the detriment of the long-term development of competition and hence consumers.

15.125 This SMP condition requires the publication of a reference offer and specifies the information to be included in that reference offer (set out below) and how the reference offer should be published. The reference offer must set out (at a minimum) such matters as:

- a clear description of the services on offer including technical characteristics and operational process for service establishment, ordering and repair;
- the locations of points of network access and the technical standards for network access;
- conditions for access to ancillary and supplementary services associated with the network access including operational support systems and databases etc;

¹²⁷³ In this respect, we consider these obligations aimed at promoting transparency and ensuring non-discrimination are consistent with the relevant best practices identified in the BEREC Common Position.

- contractual terms and conditions, including dispute resolution and contract negotiation/renegotiation arrangements;
- maximum charges, terms and payment procedures;
- service level agreements and service level guarantees; and
- to the extent that KCOM uses the service in a different manner to CPs or uses a similar service, KCOM is required to publish a reference offer for in relation to those services.

15.126 The obligation prohibits KCOM from departing from the terms and conditions in the reference offer and requires it to comply with any directions Ofcom may make from time to time under the condition.

15.127 As discussed above KCOM is required to publish maximum charges that must not be exceeded but is permitted to offer bespoke discounts that are not published in the reference offer.

Legal tests

15.128 We are satisfied that the SMP condition (as set out in Annex 7) meets the various tests set out in the Act.

15.129 First, we have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the SMP condition is aimed at promoting competition firstly by ensuring that providers have the necessary information to allow them to make informed decisions about purchasing wholesale services in order to compete in downstream markets and by providing transparency in order to assist in the monitoring of anticompetitive behaviour.

15.130 Second, section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable in that it requires that terms and conditions are published in order to encourage competition, provide stability in markets and monitor anti-competitive behaviour;
- not unduly discriminatory, as it is imposed only on KCOM and no other operator has been found to hold a position of SMP in these markets;
- proportionate, as only information that is considered necessary to allow providers to make informed decisions about competing in downstream markets is required to be provided; and
- transparent in that it is clear in its intention to ensure that KCOM publishes details of its service offerings.

Requirement to notify prices, terms and conditions

Aim of regulation

15.131 We consider that KCOM should be required to notify changes to its charges, terms and conditions.

15.132 Notification of changes to services at the wholesale level can assist competition by giving advanced warning to CPs purchasing wholesale services that also compete with the dominant provider in downstream markets. It also supports the non-discrimination obligation by ensuring that KCOM does not notify changes in a discriminatory manner. Notification of changes to charges therefore helps to ensure stability in markets and without which we consider incentives to invest might be undermined and market entry made less likely.

15.133 Our considerations about the appropriate notification periods are the same for these markets as for the wholesale TISBO and AISBO markets in the rest of the UK where BT has SMP (as discussed in Sections 10 and 11). We therefore impose the following notice periods:

- 28 day notice for prices, terms and conditions relating to new service introductions;
- 28 days notice for price reductions and associated conditions (for example conditions applied to special offers); and
- 90 days notice for all other changes to prices terms and conditions.

Legal tests

15.134 We are satisfied that the SMP condition (as set out in Annex 7) meets the relevant tests set out in the Act.

15.135 First, we have considered our duties under section 3, and all the Community requirements set out in section 4, of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that CPs have the necessary information about changes to terms, conditions and charges sufficiently in advance to allow them to make informed decisions about competing in downstream markets.

15.136 Secondly, section 47 of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:

- objectively justifiable, in that there are clear benefits from the notification of changes in terms of ensuring that providers are able to make informed decisions within an appropriate time frame about competing in downstream markets;
- not unduly discriminatory, as it is imposed only on BT and no other operator has been found to hold a position of SMP in these markets;
- proportionate, as 90 days is considered the minimum period necessary to allow competing providers to plan for changes to existing network access and 28 days would be sufficient for new network access and price reductions; and
- transparent in that the SMP condition is clear in its intention to ensure that KCOM provides notification of changes to their charges and terms and conditions.

Requirement to notify technical information

Aim of regulation

- 15.137 We consider that changes to technical information be published in advance, so that competing providers have sufficient time to prepare for them.
- 15.138 Under the requirement to publish a reference offer, KCOM is required to publish technical information. However, advance notification of changes to technical information is important to ensure that providers who compete in downstream markets are able to make effective use of the wholesale services provided by KCOM.
- 15.139 For example, a competing provider may have to introduce new equipment or modify existing equipment to support a new or changed technical interface. Similarly, a competing provider may need to make changes to their network in order to support changes to wholesale services offered by KCOM.
- 15.140 Technical information includes new or amended technical characteristics, including information on network configuration, locations of the points of network access and technical standards (including any usage restrictions and other security issues).
- 15.141 The condition requires the notification of new technical information within a reasonable time period but not less than 90 days in advance of providing new wholesale services or amending existing technical terms and conditions. We consider that 90 days is the minimum time that competing providers need to modify their network to support a new or changed technical interface or support a new point of access or network configuration.
- 15.142 Longer periods of notification may also be appropriate in certain circumstances. For example, if KCOM were to make a major change to their technical terms and conditions, a period of more than the 90 day minimum notification period may be necessary.

Legal tests

- 15.143 We are satisfied that the SMP condition (as set out in Annex 7) meets the various tests set out in the Act.
- 15.144 First, we have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the SMP condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefits for consumers by ensuring that providers have sufficient notification of technical changes to wholesale services to enable them to compete in downstream markets.
- 15.145 Second, section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. The SMP condition is:
- objectively justifiable in that it enables providers to make full and effective use of network access to be able to compete in downstream markets;
 - not unduly discriminatory, as the SMP condition is imposed only on KCOM and no other operator has been found to hold a position of SMP in these markets;

- proportionate in that 90 days is the minimum period that Ofcom considers is necessary to allow competing providers to modify their networks; and
- transparent in that it is clear in its intention that KCOM notify changes to technical information in advance.

Section 16

Accounting obligations

Introduction

16.1 In this section we set out the accounting obligations that we have decided to impose on BT in the following markets:

- the wholesale market for low bandwidth TISBO in the UK excluding the Hull area at bandwidths up to and including 8Mbit/s;
- the wholesale market for medium bandwidth TISBO in the UK excluding the Hull area and the WECLA at bandwidths above 8Mbit/s and up to and including 45Mbit/s;
- the wholesale market for high bandwidth TISBO in the UK excluding the Hull area and the WECLA at bandwidths above 45Mbit/s and up to and including 155Mbit/s;
- the wholesale market for regional trunk segments in the UK;
- the wholesale market for low bandwidth AISBO in the WECLA at bandwidths up to and including 1Gbit/s;
- the wholesale market for low bandwidth AISBO in the UK excluding the Hull area and the WECLA at bandwidths up to and including 1Gbit/s;
- the wholesale market for MISBO in the UK excluding the Hull area and the WECLA; and
- the retail market for very low bandwidth TI leased lines in the UK excluding the Hull area at bandwidths below 2Mbit/s.

16.2 We also set out the accounting obligations that we have decided to impose on KCOM in the following markets:

- the wholesale market for low bandwidth TISBO in the Hull area at bandwidths up to and including 8Mbit/s;
- the wholesale market for medium bandwidth TISBO in the Hull area at bandwidths above 8Mbit/s and up to and including 45Mbit/s;
- the wholesale market for high bandwidth TISBO in the Hull area at bandwidths above 45Mbit/s and up to and including 155Mbit/s;
- the wholesale market for very high bandwidth TISBO in the Hull area at bandwidths at 622Mbit/s;
- the wholesale market for low bandwidth AISBO in the Hull area at bandwidths up to and including 1Gbit/s;

- the retail market for low bandwidth TI leased lines in the Hull area at bandwidths up to and including 8Mbit/s; and
- the retail market for low bandwidth AI leased lines in the Hull area at bandwidths up to and including 1Gbit/s.

16.3 These remedies are based on the nature of the competition problems in these markets and, in particular, underpin other remedies imposed in those markets by enabling compliance to be monitored and providing transparency.

Structure of this section

16.4 We note that responses to the June BCMR Consultation led us to revisit our position on cost accounting as part of the November BCMR Consultation. In this section, we briefly address accounting separation and other issues, before moving on to the cost accounting position. We then set out our conclusions and relevant legal tests. This section is structured as follows:

Sub-section	Description
Introduction	
Accounting separation and other issues	Review of our proposals in the June BCMR Consultation and the further November BCMR Consultation, Ofcom's views on consultation responses, and conclusions.
Cost accounting	Review of our proposals in the June BCMR Consultation and, Ofcom's views on consultation responses, and conclusions.
Conclusions on the appropriate remedies	Our conclusions of the appropriate remedies based on the above assessment. For each remedy we clarify the aim and the legal basis.

Summary of our conclusions

- 16.5 We have concluded that, to support the remedies set out in sections 9 to 15, it would be appropriate for BT and KCOM to be subject to certain accounting obligations in each of the markets in which they have SMP. In those sections, we have set our assessment of the competition problems that exist in the wholesale and retail markets in which we have found BT and KCOM to have SMP. This includes our assessment of the insufficiency of national and Community competition law remedies to address the competition problems we have identified, and the remedies which we have concluded are appropriate to address those problems.
- 16.6 The identified remedies include accounting obligations. Accounting obligations support other remedies by ensuring that we have access to information necessary to carry out our work, and that the dominant provider records information about relevant transactions in a way which is accessible when required. They also allow the proper attribution of costs across markets to be monitored, and for there to be transparency as to compliance. Without appropriate accounting obligations, there is a risk that the other remedies identified in relation to individual markets would not be effective.
- 16.7 The table below summarises the relevant competition problems (as identified in the preceding sections) and the accounting obligations that we have concluded are appropriate, in combination with the remedies set out in those other sections, to address them.

Figure 15.1 –Summary of competition problems and accounting obligations

Relevant Competition problems ¹²⁷⁴	Retail markets	Wholesale markets
Markets in which BT has SMP <ul style="list-style-type: none"> • Price discrimination • Non-price discrimination • Predatory pricing • Margin squeeze • Excessive pricing 	<ul style="list-style-type: none"> • Cost accounting 	<ul style="list-style-type: none"> • Accounting separation • Cost accounting
Markets in which KCOM has SMP <ul style="list-style-type: none"> • Price discrimination • Non-price discrimination • Predatory pricing • Margin squeeze • Excessive pricing 		<ul style="list-style-type: none"> • Accounting separation

Accounting separation and other issues

Our proposals in the June BCMR Consultation

16.8 In the June BCMR Consultation, we proposed that BT and KCOM should be subject to accounting separation obligations in each of the wholesale markets in which we had proposed that they have SMP. We explained the rationale for our proposal noting that, if the obligation not to discriminate unduly is to be meaningful, a dominant provider needs to be required to make transparent its wholesale prices and internal transfer prices, i.e. to demonstrate that it is not unduly discriminating against CPs. In practice this means that they are obliged to produce financial statements that reflect the performance of each of the markets as though they were separate businesses. Accounting separation therefore enables Ofcom to monitor whether a dominant provider is unduly discriminating.¹²⁷⁵

16.9 Our proposals regarding accounting separation remained unchanged in the November BCMR Consultation.

Responses to the June BCMR Consultation

16.10 Only BT commented in detail on the proposed accounting separation obligations. BT queried our proposal in paragraph 10b of the draft legal instrument to impose conditions OA29 to OA31 (as set out in the 2004 Statement on Regulatory Reporting¹²⁷⁶) in the retail market for low bandwidth TI leased lines. These conditions

¹²⁷⁴ Only competition problems relevant to accounting problems listed here.

¹²⁷⁵ In the June BCMR Consultation, the SMP services conditions we proposed to impose on BT include a no undue discrimination SMP condition (see proposed SMP services conditions 3 and 12, as set out in Schedule 2 of the Notification at Annex 14 to the June BCMR Consultation).

¹²⁷⁶ http://stakeholders.ofcom.org.uk/binaries/consultations/fin_reporting/statement/finance_report.pdf

would require it to prepare and maintain a retail catalogue.¹²⁷⁷ BT noted that this proposal was contrary to our decision in our 2009/10 update to the regulatory financial reporting obligations in which these obligations were withdrawn.

Ofcom's response

16.11 The inclusion of these obligations in paragraph 10b of the draft legal instrument was an oversight. As BT points out, we withdrew these obligations in our 2009/10 update to the regulatory financial reporting obligations.¹²⁷⁸ We do not consider that re-imposition of these obligations is warranted given the limited scope of ex-ante retail regulation on BT (the retail low bandwidth TI market being the only market), and have removed these obligations from the amended version of the legal instrument in Annex 7.

Cost accounting

Our proposals in the June BCMR Consultation

16.12 With regard to cost accounting obligations, we stated in the June BCMR Consultation that “we are not proposing that BT should be subject to any cost orientation obligations in the business connectivity markets. Consequently we do not propose to apply cost accounting obligations”.¹²⁷⁹ Nor did we propose cost accounting obligations in relation to KCOM.

16.13 Seven respondents to the June BCMR Consultation objected to our proposal not to apply cost accounting obligations on BT. The main points made were:

- cost accounting obligations should be retained even if Ofcom decides not to apply cost orientation obligations;
- publication of cost accounting information promotes transparency and enables CPs to monitor discriminatory conduct by BT such as loading costs onto services that CPs consume more than BT;
- scrutiny of cost accounting information by CPs helps ensure its integrity. Accounting problems are often uncovered by CPs rather than by Ofcom;
- continuity of publication of accounting information is also important to aid understanding and to maintain integrity; and
- Ofcom would require BT to produce cost accounting information in order to set charge controls.

Our proposals in the November BCMR Consultation

16.14 In light of responses to the June BCMR Consultation, in the November 2012 Consultation we proposed that BT (but not KCOM) should be subject to cost

¹²⁷⁷ A retail catalogue is a document describing each of the retail products, constituent retail activities and supporting activities that appear in retail regulatory financial statements.

¹²⁷⁸ Changes to BT and KCOM's Regulatory Financial Reporting 2009/10
<http://stakeholders.ofcom.org.uk/binaries/consultations/btregs10/statement/statement.pdf>

¹²⁷⁹ Paragraph 15.12.

accounting obligations in each of the wholesale markets in which we had proposed that it has SMP.

- 16.15 In light of our proposal not to apply cost orientation obligations in relevant product markets, we considered whether it was still appropriate for BT to be required to a) produce DLRIC and DSAC figures for products/services in these markets and b) to publish the DLRIC and DSAC figures for wholesale services in its Regulatory Financial Statements (RFS). Our assessment was that we would still require DLRIC and DSAC figures for these proposed services to be produced, but not to be published.
- 16.16 We did not propose any other changes to the cost accounting information that BT currently publishes.

Responses to the BCMR Consultations

- 16.17 BT, CWW, Easynet, EE/MBNL, EE, Level3, TalkTalk, Virgin, and Verizon commented on our proposals. All supported the imposition of cost accounting obligations but only BT supported the proposal that it should no longer be required to publish DLRIC and DSAC figures.¹²⁸⁰
- 16.18 BT argued that cost accounting obligations along with the other regulatory financial reporting obligations require it to publish more information than is necessary to address the identified competition concerns. In BT's view publication of cost accounting data at the market level or at most charge control basket level would be sufficient. It suggested these concerns should be taken forward as part of Ofcom's review of regulatory financial reporting obligations.
- 16.19 CWW, Easynet, EE/MBNL, EE, Level3, TalkTalk, Virgin, and Verizon supported the continued publication of DLRIC and DSAC figures. The main points made in support this were:
- Publication of DLRIC and DSAC figures is necessary to enable CPs to monitor BT's compliance with the charge controls;
 - Stopping publication would weaken the constraint on BT's charges because CPs would not be able to monitor BT's charges against DLRIC and DSAC;
 - Publication enables CPs to monitor the effectiveness of the charge controls and BT's pricing behaviour;
 - Publication of DLRIC figures enables CPs to determine whether individual charges are set at anti-competitively low levels;
 - There is no significant cost or confidentiality concern associated with publication of DLRIC and DSAC figures so BT should be required to publish them; and
 - Scrutiny by CPs is necessary to ensure the accuracy of these figures, thus if Ofcom intends to use them when setting charge controls BT should be required to publish them.

¹²⁸⁰ Most respondents also reiterated and expanded on their comments in the June BCMR Consultation about cost orientation obligations. BT restated its support for the withdrawal of these obligations but others expressed disappointment that we had not changed our proposals in light of the responses. We discuss stakeholder these responses in Section 9.

- 16.20 Virgin said that we should have deferred consideration about the publication of DLRIC and DSAC figures to our annual update of regulatory financial obligations. It further argued that we had made a procedural error by putting forward these proposals and not formally notifying the changes to the relevant obligations.

Ofcom's view

- 16.21 We currently require BT to publish DLRIC and DSAC figures in order that CPs may gain confidence in BT's compliance with cost orientation obligations. Absent cost orientation obligations the primary purpose of the publication of these figures falls away. BT is not required to take account of DLRIC and DSAC in order to comply with the charge controls or other obligations we are imposing in these markets. Consequently publication of these figures is not necessary to enable CPs to monitor BT's compliance with the charge controls. CPs will be able to use BT's charge control compliance statements, which are published annually in connection with BT's RFS, to monitor BT's compliance with the charge controls.
- 16.22 Similarly, we are not persuaded there is a strong case for continued publication to enable CPs to monitor the effectiveness of the charge controls or monitor BT's charges for anti-competitive pricing. We are putting in place other measures, notably sub-caps within the main charge control together with associated monitoring provisions, to ensure that there are adequate controls on individual prices. We consider that we have demonstrated that the charge controls will adequately constrain BT's prices and as noted above, BT's charge control compliance statements will enable CPs to monitor BT's compliance with the charge controls. We have also explained that in the circumstances of the TI and AI markets over the period of the control, DSAC and DLRIC figures may not be a good way to assess the reasonableness of charges and, for the same reasons, there would be little value in publishing them.
- 16.23 We have also considered whether the figures should be published so that CPs can scrutinise them to ensure they are accurate for our use. Whilst scrutiny by CPs is welcome we do not consider this alone is sufficient justification for publication in this case. These figures would be used to inform our decision about whether to make starting charge adjustments when setting charge controls and would be subject to detailed review during the preparation of our charge control proposals.
- 16.24 In relation to Virgin's comments, we consider that these comments reflect a misunderstanding of the process being followed. Our view is that it was logical to discuss DLRIC/DSAC publication in the November BCMR Consultation in order that respondents could see the full scope of our proposals in relation to cost accounting. However, we continue to implement changes to regulatory financial reporting obligations stemming from market reviews in our annual updates to the regulatory financial reporting obligations, and that is also the approach we are taking in this case. This allows us to ensure that changes stemming from market reviews are implemented in a consistent manner. We do not consider this approach constitutes a procedural error.
- 16.25 We agree with BT that its wider concerns about the appropriateness of the current level of publication of regulatory financial information are best considered in our review of the regulatory financial reporting obligations, and therefore do not address them further here.

Ofcom's conclusions on the appropriate remedies

- 16.26 We have concluded that the most appropriate remedies to address the competition problems identified remain those that we proposed in the June BCMR Consultation as revised by the November BCMR Consultation.
- 16.27 Our conclusions are the result of our cumulative consideration of our assessment of the appropriate remedies, as set out in the June and November BCMR Consultations, our consideration of the consultation responses, and all the evidence available to us.
- 16.28 In reaching our conclusions we have also taken into due account of all applicable guidelines and recommendations issued by the EC, and we have had regard to relevant guidance from the ERG, Oftel and ourselves.
- 16.29 Below we set out:
- The aim of the remedies that we have concluded should be imposed on BT and KCOM in the markets listed in paragraphs 16.1 and 16.2 above;
 - The obligations imposed on BT and KCOM by the remedies; and
 - The reasons why we consider the remedies comply with the relevant legal tests in the Act.

Accounting separation obligations

Aim of regulation

- 16.30 In relation to accounting separation, if the obligation to not unduly discriminate is to be meaningful, a dominant provider needs to be required to make transparent its wholesale prices and internal transfer prices, i.e. to demonstrate that it is not unduly discriminating against CPs. In practice this means that they are obliged to produce financial statements that reflect the performance of the markets as though they were separate businesses. Accounting separation therefore enables Ofcom to monitor whether a dominant provider is unduly discriminating.

SMP Condition

- 16.31 Consistent with our approach in other market reviews, we intend to implement our detailed proposals regarding the imposition of regulatory financial reporting obligations in relation to BT and to KCOM in our annual update through directions applied to BT's, and to KCOM's, regulatory financial reporting obligations.
- 16.32 We propose in this document to set SMP conditions to impose those obligations on BT and KCOM, respectively, which conditions will also provide the legal basis for above-mentioned future directions. We consider that the proposed accounting separation and cost accounting obligations satisfy the relevant legal tests for the reasons set out below.

Legal tests

- 16.33 Under sections 87(7) and 87(8) of the Act, appropriate accounting separation obligations may be imposed on the dominant provider in respect of the provision of network access, the use of the relevant network and the availability of relevant

facilities. That is to say, the dominant provider may be required to maintain a separation for accounting purposes between such different matters relating to network access or the availability of relevant facilities. We intend to rely on this legal basis in imposing accounting separation obligations on BT and KCOM.

- 16.34 We are satisfied that the accounting separation obligations set out in Schedule 2 of Annex 2 (in respect of BT) and Annex 3 (in respect of KCOM) to the Financial Reporting Statement and Notification 2004¹²⁸¹ meet the various tests set out in the Act.
- 16.35 We have considered our duties under section 3 of the Act and consider that the application of the accounting separation obligations on BT and on KCOM is justifiable to promote competition in relation to the provision of electronic communications networks and to ensure the provision of network access and services interoperability for the purpose of securing efficient and sustainable competition and the maximum benefit for consumers.
- 16.36 We have considered the Community requirements set out in section 4 of the Act and consider they are met. Specifically, the accounting separation obligations encourage the provision of network access for the purpose of securing efficient and sustainable competition in the markets for electronic communications networks and services, by ensuring dominant providers – i.e. BT and KCOM both of whom we have proposed, in the June BCMR Consultation, have SMP in a number of markets – do not discriminate unduly in favour of their own downstream businesses, thereby disadvantaging 3rd party CPs.
- 16.37 We consider that the accounting separation obligations meet the criteria set out in section 47 of the Act in that they are:
- objectively justifiable for the reasons set out above;
 - not unduly discriminatory, as we are proposing that they only apply to BT and KCOM who are the only providers we have proposed in the June BCMR Consultation have SMP and we have proposed that both providers should be subject to a no-undue discrimination obligation¹²⁸²;
 - proportionate, as they are necessary as a mechanism to allow Ofcom and third parties to monitor whether BT and KCOM are engaging in discriminatory behaviour; and
 - transparent, as they are set out in Schedule 2 of Annex 2 (in respect of BT) and Annex 3 (in respect of KCOM) to the Financial Reporting Statement and Notification 2004.

¹²⁸¹ The regulatory financial reporting obligations on BT and Kingston Communications Final statement and notification, published 22 July 2004
http://stakeholders.ofcom.org.uk/binaries/consultations/fin_reporting/statement/finance_report.pdf

¹²⁸² See proposed SMP services condition 3 in Schedule 2, and proposed SMP services condition 2 in Schedule 3, of the Notification at Annex 14 to the June BCMR Consultation.

Cost accounting obligations

Aim of regulation

16.38 Cost accounting obligations require the dominant provider to maintain a cost accounting system (a set of processes and systems) to capture the costs, revenues, assets and liabilities associated with the provision of services and to attribute them in a fair, objective and transparent manner to individual services in order that the costs of individual services may be determined. In conjunction with the other financial reporting obligations, cost accounting obligations perform several important functions. In particular:

- Cost accounting obligations ensure that we have information necessary to carry out our work, pursuant to our statutory duties, including the following:
 - Information to support our market reviews. Our market reviews involve a forward-looking, structural evaluation of the relevant markets, based on existing market conditions. The information deriving from cost accounting obligations assists us in this evaluation, in particular, at the remedies stage in determining whether a form of price control¹²⁸³ (if any) should be imposed and, if so, what the appropriate price control should be. For the reasons set out in the June BCMR Consultation, we are proposing to impose charge controls in some of the markets in which we propose that BT has SMP. In our preferred method of charge control regulation – RPI+/-X – fully allocated cost (FAC) accounting information (usually information relating to the last financial year and preceding years) is an input to our assessment of the dominant provider's base year costs and cost trends. Similarly FAC, distributed stand alone cost (DSAC) and distributed long run incremental cost (DLRIC) information is used for our assessment of whether starting charge adjustments may be appropriate.¹²⁸⁴ We have adopted this method in the July LLCC Consultation.
 - Information to support the monitoring of effectiveness of remedies. Given the nature of a market review, any SMP findings apply prospectively. In this respect, cost accounting obligations provide important information to ensure that remedies we have applied in our market review, and those SMP conditions we have proposed in the June BCMR Consultation, continue to address the competition problems identified, in particular any price control we have imposed, and to enable our timely intervention should such intervention ultimately be needed.
 - Information to support investigations of potential breaches of SMP obligations and anti-competitive practices generally. It may also be used in resolving disputes.
- Cost accounting obligations ensure that the dominant provider records all information necessary for the purposes listed above at the time that relevant transactions occur, by requiring the dominant provider to record detailed information about the costs it incurs in providing services on an ongoing basis. Absent such a requirement, there is a strong possibility that the necessary

¹²⁸³ Within the meaning of section 87(9) of the Act.

¹²⁸⁴ We usually prefer to use charge control glide paths to bring charges into line with forecast costs but where charges are significantly misaligned with costs and there is a risk of distortion we may use starting charge adjustments.

information would not be available when it is required, and in the necessary form and manner.

- The imposition of cost accounting obligations ensure that wholesale costs are attributed across the wholesale markets (and the individual services within them) in a consistent manner. This militates, in particular, against the risk of double recovery of costs or that costs might unreasonably be loaded onto particular products or markets.
- Publication of cost accounting information aids transparency, providing reassurance to stakeholders about compliance with SMP obligations, allowing stakeholders to monitor compliance and more generally enabling stakeholders to make better informed contributions to the development of the regulatory framework.

16.39 In relation to production of DLRIC and DSAC figures for wholesale services in these markets, our assessment is that we will still require DLRIC and DSAC figures for these services. In particular, we may use these figures to inform our decisions about whether to apply starting charge adjustments. These figures may also be useful to inform our assessment of SMP or to set future cost orientation obligations. We conclude it is appropriate to maintain the obligation for BT to produce these figures.

16.40 BT is currently required to publish DLRIC and DSAC figures for wholesale services in its RFS in order that CPs may gain confidence regarding BT's compliance with cost orientation obligations. Given our decision not to apply cost orientation obligations, we conclude that BT should not be required to publish DLRIC and DSAC figures in these markets, but only to continue to deliver them to Ofcom. Compliance with sub-caps, which will be used to prevent individual charges rising to excessive levels, can be monitored by stakeholders by reference to BT's pricing notifications whereas DLRIC and DSAC figures are published in arrears. We therefore conclude there would be at least an equivalent level of transparency under the proposed new arrangements.

16.41 We conclude it is not necessary to make any other changes to the cost accounting information that BT is required to produce and publish pursuant to the cost accounting obligations. In particular, BT will continue to be required to deliver to Ofcom, as well as to publish, FAC figures for wholesale markets at the product/service level and also to publish the calculation of FAC based on component costs. Publication of this information is appropriate in markets where there is a risk of pricing distortions or undue discrimination. Such transparency will, in particular, enable CPs to:

- assess the accuracy of product/service level data. In some ways, CPs are in a better position to do this than the regulator as they are involved in the business of buying and using the products/services concerned.
- monitor BT's compliance with other SMP obligations, including the no undue discrimination obligations.

SMP condition

16.42 Consistent with our approach in other market reviews, we intend to implement our detailed proposals regarding the imposition of regulatory financial reporting obligations in relation to BT and to KCOM in our annual update through directions applied to BT's, and to KCOM's, regulatory financial reporting obligations.

- 16.43 For the retail very low bandwidth TI market there are no established reporting and publication obligations as BT is not currently subject to retail cost accounting obligations in any other markets. We will therefore give further consideration as to the appropriate reporting and publication obligations in our next annual update of the regulatory financial reporting obligations.
- 16.44 We propose in this document to set SMP conditions to impose those obligations on BT and KCOM, respectively, which conditions will also provide the legal basis for above-mentioned future directions. We consider that the proposed accounting separation and cost accounting obligations satisfy the relevant legal tests for the reasons set out below.

Legal tests

- 16.45 First, we are proposing wholesale cost accounting obligations under section 87(9) of the Act. Section 88 of the Act states that Ofcom are not to set an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse pricing effects arising from price distortion and it also appears that the setting of the condition is appropriate for the purposes of:
- promoting efficiency;
 - promoting sustainable competition; and
 - conferring the greatest possible benefits on the end-users of the public electronic communications services.
- 16.46 Section 88(2) also requires that we must take account of the extent of investment in the matters to which the conditions relates and the person to whom the condition applies i.e. BT in this case.
- 16.47 As discussed above, in the June BCMR Consultation, we identified the risk of excessive pricing in the markets in which we proposed BT has SMP.
- 16.48 For the reasons set out above we consider that cost accounting obligations promote efficiency and promote sustainable competition. We have also taken account of the extent of the investment of BT in the matters to which the cost accounting obligations relate.
- 16.49 In addition, under section 91 of the Act where wholesale regulation in the upstream market would not suffice to achieve our duties and objectives with regard to the relevant retail market, the sorts of SMP conditions authorised or required by sections 87 to 89 of the Act may be set in that retail market. In this respect, we consider imposing accounting separation on BT only in the relevant wholesale markets would not provide us with the necessary transparency in the relevant retail market.
- 16.50 Secondly, we have considered our duties under section 3 of the Act. In particular, we consider our decision to impose cost accounting obligations on BT would further the interests of citizens and further the interests of consumers in relevant markets by the promotion of competition. Further, we consider that, in accordance with section 4 of the Act, cost accounting obligations in particular promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers.

16.51 Thirdly, we consider our decision to impose cost accounting obligations on BT meets the criteria set out in section 47(2) in that cost accounting obligations are:

- objectively justifiable, for the reasons set out above;
- not unduly discriminatory, as it is to be imposed only for BT and no other operator has been found to hold a position of SMP in the relevant markets in which we propose cost accounting obligations would apply;
- proportionate since they achieve the appropriate balance between the provision of relevant financial information to Ofcom and the publication of relevant financial information to provide sufficient transparency to stakeholders; and
- transparent as they are set out in Schedule 2 of Annex 2 to the Financial Reporting Statement and Notification 2004.

Section 17

Form and duration of the charge control

Introduction

17.1 In this Section we set out our conclusions on the form and duration of the charge control. In particular, we discuss:

- the reasoning behind our conclusion that the main controls should take the form of an RPI-X price cap, including our choice of RPI as the relevant inflation index;¹²⁸⁵ and
- the reasons for concluding that the charge control should last for a period of maximum three years.

The RPI-X type of charge control

The LLCC consultation proposals

17.2 In the LLCC Consultation, we proposed an RPI-X form of charge control for the main leased lines services. We noted this form of control has been tried and tested over many years for telecoms charge controls and we also adopted this form of control for the LLCC 2009. We also noted this form of control has a number of desirable properties such that we considered it would best meet the specific policy objectives referred to in Section 2 of the LLCC Consultation.¹²⁸⁶ A particular feature of the RPI-X form of control is that it gives BT incentives to enhance its efficiency and make efficient investments. This is an important consideration for us and something we must consider under section 88 of the Act.

17.3 Such a charge control entails forecasting the efficiency gains that BT would need to make to achieve an efficient level of costs and determining the maximum permitted price change for particular groups of services. In order to maintain its profitability on these services, BT would have to make efficiency improvements to reduce its costs in line with the expected path set by the charge control.¹²⁸⁷

17.4 In addition, the RPI-X form of charge control provides an incentive to make efficiency gains over and above those forecast as part of the control. If BT is able to deliver the required services at a lower cost than has been forecast, it can retain the profits resulting from these savings. In this way, an RPI-X type of control provides incentives to 'outperform' the charge control and improve efficiency over time. Customers also

¹²⁸⁵ We proposed to make an exception to this proposal in relation to Excess Construction Charges (ECCs), for which we use a different index, namely the General Building Cost Index (GBCI). This specific proposal is discussed in detail in Section 7 of this Statement.

¹²⁸⁶ See paragraph 2.45 of the LLCC Consultation. Having considered consultation responses we have decided to adopt the policy objectives set out in Section 2 of the LLCC Consultation.

¹²⁸⁷ We are also mindful that a reduction in service quality would be one way in which BT could reduce its costs. However, BT has wider regulatory obligations aimed at ensuring that it maintains service standards. For example, BT reports on its service performance based on Key Performance Indicators (KPIs). In addition, BT is required to offer Service Level Guarantees (SLGs) for the time it takes to repair circuits and to connect new circuits. It faces financial penalties for failing to connect and repair services within a certain period. Therefore, wider regulatory remedies on BT provide us with mechanisms to monitor service quality and to provide BT with incentives to maintain service standards.

benefit in the longer term, as these additional efficiency gains can be shared through lower prices when the charge control is reset.

- 17.5 The RPI-X approach can also provide incentives for efficient investment. The level of the charge control is usually set to allow the firm to earn a reasonable rate of return (the cost of capital) if it is efficient, and a consistent approach can be taken over charge control periods to encourage such investment. We therefore proposed that the RPI-X form of charge control was likely to best meet our specific objectives.
- 17.6 We then drew attention to Sections 5, 6 and 8 of the LLCC Consultation where we also considered particular variants of the RPI-X form of control that do not involve forecasting costs and setting prices according to these forecasts. We said we may propose this type of control where we believe that there is less risk of excessive pricing, but that some control on prices is still appropriate. We said we would consider setting ‘safeguard’ caps of RPI-0% or RPI-RPI (no real increases in prices and no nominal increases in prices respectively) where we believe that this is the most appropriate means to achieve our specific policy objectives. In the LLCC Consultation, such a safeguard cap was proposed for AI services in the WECLA.¹²⁸⁸ Finally, we said these variants of the RPI-X charge control are most appropriate where we consider that protection and incentives for efficiency may already exist, but additional protection is appropriate, either for certain groups of customers, or in case market conditions change.¹²⁸⁹

RPI as our benchmark for inflation

- 17.7 We proposed to retain RPI as the relevant inflation index for our main charge controls. As in previous charge control reviews, we considered alternatives to RPI because it includes items (e.g. mortgage interest rates and indirect taxes) which are not relevant to BT’s costs. We noted alternatives to the RPI index exist, including:
- sector-specific price indices, which would more accurately track the prices of relevant services;
 - RPIX index, which excludes mortgage interest payments;
 - RPIY index, which excludes mortgage interest payments and indirect taxes, such as VAT and excise duty; and
 - Consumer Price Index (CPI), which is an internationally comparable measure of inflation and is the basis for the UK’s government’s inflation target.
- 17.8 We then noted that, whilst the RPI includes some items not relevant to BT’s costs, it nonetheless has the advantage of familiarity to stakeholders and other benefits, such as being independent of BT’s influence whilst providing a link between the index for the price control and the basis for the allowed rate of return.
- 17.9 We considered it important that charge controls set price levels linked to a fixed inflation measure, outside the control of the firm subject to the price cap. RPI and CPI both fulfil this requirement. Telecommunications specific indices, on the other hand, have the disadvantage that BT’s prices would be a major input to them and so there

¹²⁸⁸ See LLCC Consultation, Section 8.

¹²⁸⁹ See LLCC Consultation, Section 5 and 6, paragraphs 5.64 – 5.68 and 6.47 – 6.49 respectively and, in particular, Section 8 (on our proposed control on wholesale AI low in the WECLA), where we considered applying these forms of control.

would be a circularity in setting price controls for BT on this basis. Other sector-specific indices would only be appropriate if they did not lead to circularity between BT's prices and the level of the index.¹²⁹⁰

17.10 We noted the importance of ensuring that the appropriate inflation measure is used in charge controls. We gave this issue significant prominence in the LLCC 2009 and concluded that RPI remained the most appropriate index and have continued to use the RPI index in recent charge controls, such as the WBA CC.¹²⁹¹

17.11 We noted that, in a report produced in 2007, the Competition Commission (CC) considered the use of RPI as the index for price controls in its assessment of the economic regulation of Gatwick and Heathrow airports, noting the importance of indexation of significant cost items of regulated companies:

“Most sector regulators have concluded that the value of continuing to base controls on RPI is, first, that precedent favours RPI, and secondly that significant cost items of regulated companies, such as index linked bonds which are used to calculate the cost of capital and wage settlements, are generally linked to RPI [...]. We therefore see no reason to change the current approach of relating increases in charges to changes in the RPI.”¹²⁹²

17.12 We further noted that the energy regulator, Ofgem, had more recently conducted a review of the RPI-X approach to energy network regulation.¹²⁹³ It stated that it thought that there was a case for moving to CPI, but that there were “significant practical problems with a wholesale move to CPI as corporate and government index-linked bonds continue to use RPI as the relevant index”. It concluded that it was important to maintain “consistency between the indexation of the price control and the basis for establishing the allowed return”.¹²⁹⁴ A similar issue arises for our leased line charge control in that the allowed return, as in other charge controls set by Ofcom, is determined by our calculations of BT's cost of capital¹²⁹⁵. To do this we use the return on index linked bonds, for which the relevant index is RPI.

17.13 We recognised that some government agencies and other parties now use CPI as an index on which to base their policies. For example, state benefits are now generally linked to CPI. However, we noted that this relates to the specific form of costs which such payments are intended to meet, which are more closely linked to CPI. This is a less relevant argument for BT's costs in delivering leased lines services.

¹²⁹⁰ In Section 7 of the LLCC Consultation we considered the use of the GBCI for setting a control on ECCs. This is due to particular circumstances relating to these services.

¹²⁹¹ See paragraph 4.9 of the WBA CC Statement:

<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf>

¹²⁹² See paragraphs 3.21 and 3.22 of the CC report available at:

http://www.competition-commission.org.uk/rep_pub/reports/2007/fulltext/532.pdf

¹²⁹³ Details of Ofgem's RPI-X@20 review can be found here:

<http://www.ofgem.gov.uk/Networks/rpix20/Pages/RPIX20.aspx>

¹²⁹⁴ See paragraphs 5.4-5.13 of the consultation document:

<http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/RPI-X@Recommendations.pdf> and paragraphs 5.2-5.4 of the decision document: “RIIO: A new way to regulate energy networks”, October 2010. <http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/Decision%20doc.pdf>

¹²⁹⁵ See Annex 7 of the LLCC Consultation.

- 17.14 We referred to how we have recently imposed a cap on the level that Royal Mail can charge for Second Class stamps¹²⁹⁶ and had proposed a cap on the prices for sending large letters and packets,¹²⁹⁷ which are indexed to CPI rather than RPI. However, we explained that this was because these caps are intended to protect vulnerable consumers and, since the income of many vulnerable consumers comes from benefits that are linked to CPI, this was the appropriate index to use in this context. In our view, we did not consider that the same concerns are applicable to the leased lines services.
- 17.15 Therefore, we proposed that RPI is the most appropriate inflation index to use for our main charge controls. However, we also noted that in cases where we consider that sector-specific indices are outside of BT's control, and where RPI may be a poor indicator of price trends, then we may propose a sector-specific index.

Consultation responses

- 17.16 BT, CWW, Virgin, EE and Telefonica supported our proposal to use an RPI form of charge control.
- 17.17 EE and MBNL agreed with an RPI-X form of charge control because it is well established and understood.¹²⁹⁸ It is EE's view, therefore, that regulatory continuity and certainty support the current use of RPI-X.
- 17.18 BT agreed with the use of RPI on the basis that it is important that there is consistency as to how costs are measured and the price index used.¹²⁹⁹ That is, if a cost model is based on relative cost changes to RPI, as for example in the case of asset price changes and operating cost items in the consultation, then RPI ought to be used as the relevant standard for the resulting nominal price ceilings. In addition, WACC measures are inherently tied to RPI. BT requested that the April RPI statistic be used as this would make price changes more manageable and be aligned with the approach in other controls such as LLU and WLR where the RPI figure from six months before the start of the control is used. Should Ofcom choose a start date other than 1 October, BT requested that the base RPI month should be six months earlier than the revised start data in order to allow adequate time to notify price changes.¹³⁰⁰
- 17.19 Verizon and Level 3 disagreed with our proposal to use RPI as an inflation measure, arguing that CPI is a superior index to which to link the charge control.
- 17.20 Verizon argued that RPI is recognised as more volatile than CPI and is also a poorer indicator of trends. Verizon questioned why the price controls should be linked to an index which uses irrelevant factors such as mortgage interest rates. It also cited the use of the CPI by the Bank of England and for public service pensions by the government. It additionally cited the Court of Appeal decision to uphold the use of

¹²⁹⁶ See paragraphs 8.111 to 8.114 of the Universal Postal Service Statement
<http://stakeholders.ofcom.org.uk/binaries/consultations/review-of-regulatory-conditions/statement/statement.pdf>

¹²⁹⁷ See paragraphs 3.19 and 3.20 of the consultation document:
<http://stakeholders.ofcom.org.uk/consultations/postal-service-letters-packets/?a=0>

¹²⁹⁸ See EE and MBNL non-confidential response to the LLCC Consultation, page 25.

¹²⁹⁹ See BT non-confidential response to the LLCC Consultation, paragraph 3, page 10.

¹³⁰⁰ See BT non-confidential response to the LLCC Consultation, paragraphs 3-4, pages 9-10

CPI when it was challenged for the use of pensions as evidence that CPI is a more appropriate measure of inflation than RPI.¹³⁰¹

- 17.21 Similarly to Verizon, Level 3 also questioned why the price controls should be linked to an index which uses irrelevant factors such as mortgage interest rates. Level 3 argued that because BT's own pension has changed such that payment increases are now based upon CPI, Ofcom should reconsider its choice of inflation index.¹³⁰²

Our response and conclusions

- 17.22 Of the seven stakeholders who responded to our proposal to use RPI as our benchmark for inflation, five were supportive.
- 17.23 We have considered Verizon and Level 3's argument that the RPI is linked to irrelevant factors such as mortgage interest rates. We acknowledge that not all components of the RPI are relevant to BT's costs, but note that this is also true for the CPI. By contrast, we note that several important components of BT's costs such as government index-linked bonds used for the cost of capital, and wage negotiations have historically used RPI.¹³⁰³ This gives us a preference for adopting RPI, rather than CPI, in our control.
- 17.24 We agree with BT that it is important to be consistent between the cost measure used in our model and that used for assessing compliance. Our model is a real terms model. In order to express data in real terms, many cost inputs e.g. asset price changes, some of the data used for the efficiency analysis, the RAV and parts of the cost of capital use RPI, or assess cost changes relative to RPI.
- 17.25 We note that following a consultation on options for improving RPI, the National Statistician has concluded that the formula used to produce the RPI does not meet international standards and recommended that a new index – RPIJ- be published from March 2013.¹³⁰⁴ The RPIJ will use the same basket composition as RPI, but will use an alternative formula which meets international standards. The Office of National Statistics (ONS) will continue to publish the RPI for historical consistency and the state pension and government bonds will continue to be linked to RPI.
- 17.26 Following the ONS' decision, we have re-evaluated the inflation index to use for this charge control. In particular, we have considered whether we should move to the RPIJ index.
- 17.27 As described above, we consider that it is important to be consistent between the index used for modelling and the index used for compliance. As the RPIJ will only be available from March 2013, it is not possible to know how much the historical input data used in the model would have changed if RPIJ were used as the relevant index. If we were to adopt the RPIJ, this could only be on a forward basis, and would mean that we would be inconsistent between our modelling and compliance.

¹³⁰¹ See Verizon non-confidential response to the LLCC Consultation, pages 14-16.

¹³⁰² See Level 3 non-confidential response to the LLCC Consultation, page 19.

¹³⁰³ The Debt Management Office consulted on the possibility of issuing CPI-linked gilts. They concluded that no such bonds would be issued in 2012/3, though it is possible that this issue may be revisited in the medium term. For evidence that RPI has been used as a reference point in wage negotiations, see <http://www.cwu.org/bt-pay-2012.html>.

¹³⁰⁴ See <http://www.ons.gov.uk/ons/rel/mro/news-release/rpirecommendations/rpinewsrelease.html>.

- 17.28 We note that the changed formula in the RPIJ may make it in absolute terms a more accurate measure of inflation than RPI. Many cost elements in our model are expressed relative to RPI. For example, nominal asset prices are converted into real asset prices using RPI. To the extent that RPIJ was systematically lower than RPI, then this would lead to a corresponding and offsetting adjustment to those cost measures e.g. asset prices. If all costs in our model are expressed relative to RPI, then as long as the relationship between the indices is stable over time, the movement to a different index would be largely neutral.
- 17.29 We have decided to use the 30 September 2012 RPI statistic for the first year of the LLCC charge control. We have concluded it is also appropriate to use the 30 September statistic for every other year of the charge control. This will allow BT to rely on a known value of RPI. Allowing BT sufficient lead time gives it longer to consider relevant changes to its prices and still give the required notice of any changes it might choose to make at the start of each formula year in April.

Duration of the charge control

The LLCC Consultation proposals

- 17.30 In the LLCC Consultation, we proposed a charge control that would run for a maximum of three years from implementation.
- 17.31 We considered the following factors when determining the duration of the charge control:
- the balance between dynamic and allocative efficiency;
 - alignment with the forward-looking period of the market review; and
 - forecasting issues.

Dynamic and allocative efficiency

- 17.32 We noted that we must, under section 88 of the Act, take a view on what appears to us to be appropriate for the purpose of (among other things) promoting efficiency. When assessing the question of duration of charge controls, we therefore also considered the appropriate balance between dynamic and allocative efficiency.
- 17.33 We explained in the LLCC Consultation that dynamic efficiency concerns, in essence, the ability of firms to innovate and make efficient investments, including activities designed to reduce costs over time. RPI-X charge controls generally provide strong incentives for dynamic efficiency, because they allow the charge controlled firm to earn profits in excess of the cost of capital if it is able to achieve cost savings beyond the level assumed in setting the RPI-X formula that regulates charges. These incentives can drive innovation and investment. All other things being equal, a longer charge control period creates stronger incentives for dynamic efficiency compared to a shorter period because a longer period gives the firm more opportunity to enhance its profitability through innovation and cost reduction.
- 17.34 In developing our proposals for the charge control, we considered incentives for dynamic efficiency alongside the benefits of allocative efficiency. Allocative efficiency is achieved when prices reflect the underlying costs of production. This ensures that all customers who value a product at more than its cost are able to purchase it. Prices can diverge from costs over the life of a charge control if the costs of regulated

services deviate from the projections used to set the RPI-X control. However, in establishing charge controls, regulators are able to ensure that allocative efficiency objectives are also met through the review mechanism and periodic re-setting of new controls. Shorter charge controls tend to give more weight to allocative efficiency, since prices have less scope to diverge far from costs or to remain out of line with costs for long.

- 17.35 Therefore, if charge controls are set correctly, they normally have built-in safeguards for both dynamic and allocative efficiency.
- 17.36 In previous charge controls imposed by Ofcom, we have judged that a duration of four years provided an appropriate balance between dynamic and allocative efficiency. However, taking into account the factors discussed below, we proposed that a shorter duration of three years would be appropriate and, in our view, would not disrupt that balance unduly in relation to the leased lines services in question, as we considered that it would still provide adequate incentives for dynamic efficiency.

Alignment with the forward-looking period of the market review

- 17.37 We set out, in the June BCMR Consultation, why we adopted a forward-looking period of three years for this market review.¹³⁰⁵ In particular, we considered that this duration would be appropriate in taking into account expected or foreseeable market developments.
- 17.38 We considered that this should be reflected in the duration of the proposed charge control. In the June BCMR Consultation, we proposed to set SMP conditions based on its analysis of potential market developments over this time period. Therefore we proposed that it is appropriate to align the proposed charge control with this period.

Forecasting issues

- 17.39 We noted that the forecasting of BT's costs over the period of the control involves many detailed calculations and assumptions, and which we described in detail in Section 5 and 6 of the LLCC Consultation. Among the inputs to this calculation are the forecasts of the demand for circuits on BT's network(s). With some services having a degree of fixed costs, this means that, with all other things being equal, increased (decreased) circuit numbers will decrease (increase) BT's average, or unit, cost of providing these services. This relationship between movements in costs resulting from volume changes is an important issue and forecast uncertainty would be exacerbated over time, potentially leading to over- or under-recovery of costs.
- 17.40 This forecast uncertainty would be mitigated by adopting a shorter charge control period. However, a shorter control (e.g. two years) would give less price certainty into the medium term and would be likely to reduce the strength of the investment and efficiency incentives. We considered a period of regulatory stability and certainty is particularly important at a time when BT is investing in delivering new services and there is substantial technological change.
- 17.41 Therefore, we proposed that a charge control period of three years would strike an appropriate balance between forecast uncertainty and providing regulatory stability for stakeholders.

¹³⁰⁵ See paragraph 2.44 of the June BCMR Consultation.

Consultation responses

- 17.42 There were no objections raised concerning the principle of implementing a charge control lasting for three years.
- 17.43 However, CWW, Virgin, EE and MBNL, UKCTA, Verizon, Level 3 and Telefonica all expressed concern with Ofcom's ability to impose concurrent charge controls and build in the necessary safeguards to bridge any potential gaps in the future. We summarise responses on this issue in Section 24.
- 17.44 BT argued that three year charge controls are less effective than four year controls but at the same time recognised the difficulty in demand forecasting over an extended period.¹³⁰⁶ BT requested that the control starts soon after the date of the Statement and runs for three full years (rather than a truncated first year). In addition, due to the prior year weights issue (discussed in Section 18 below), BT stated its preference for the charge control year to be aligned with BT's financial accounting year, with an April start date. Starting the control on 1 April 2013 would also have the benefits of providing a full three year duration and aligning this control with other controls such as LLU, WLR and ISDN30. Further, it noted that if the charge control were to run from 1 October 2012, then the next control would need to come into effect on 1 October 2015. This would require Ofcom to complete the next BCMR well before this date and before the current BCMR had been in force for three years. BT argued that an LLCC with a full three year duration from the statement date would therefore give Ofcom more time to conclude the next BCMR and allow a seamless move from one charge control to the next.¹³⁰⁷

Our response and conclusions

- 17.45 In respect of the comments over the delay in the implementation of the charge control, we have summarised these points in more detail in Section 24. In this Section, we set out our conclusion on the length of the charge control.
- 17.46 Respondents generally supported our proposal to set a three year charge control duration and no respondent raised specific objections to the reasoning put forward to support it. We have therefore maintained our LLCC Consultation proposal and decided that the charge control should last for three years, beginning 1 April 2013. This aligns the charge control with the period for the market review.

¹³⁰⁶ See BT non-confidential response to the LLCC Consultation, paragraph 5, pages 10.

¹³⁰⁷ See BT non-confidential response to the LLCC Consultation, paragraphs 7-11, pages 10-11.

Section 18

Charge control design

Introduction

- 18.1 In this Section we describe the key economic principles that have guided our approach in designing our charge control. In particular, we explain:
- how we designed the baskets within the charge control;
 - the basis on which we forecast costs;
 - how we assessed the key determinants of these costs; and
 - our principles when considering whether to make starting charge adjustments.
- 18.2 At the end of this Section, we discuss other methodological issues, specifically whether to use prior year or current year revenues to weight price changes within the basket, how to treat discounts in assessing compliance and how to address the introduction, modification and withdrawal of services.
- 18.3 Our decision on the approach to the introduction, modification and withdrawal of services within the scope of the charge control is provided in Section 24 of this Statement.

Our overall approach to designing charge control framework

- 18.4 In Section 4 of the LLCC Consultation we described the key economic principles that guided our approach in designing our proposed charge control. In particular, we explained the steps we followed to arrive at our proposed ranges for the value of X for the main charge control baskets, these were:
- step 1 - identify the relevant services and appropriate charge control baskets and sub-caps;
 - step 2 - determine the base year costs for the services covered by the charge control;
 - step 3 - forecast the costs of the services for the duration of the charge control;
 - step 4 - consider the case for one-off adjustments to charges at the start of the charge control; and
 - step 5 - calculate the value of X for the proposed basket(s) of services.
- 18.5 Steps 1, 3, 4 and 5 of our cost modelling approach tend to be specific to the individual charge control baskets. We therefore set out the summary of our principles below and discuss how these steps have been applied in our modelling in Sections 19 and 20 below.¹³⁰⁸ Our proposed approach to determining base year costs (step 2)

¹³⁰⁸ Sections 19 and 20 of this document set out our LLCC Consultation proposals, respondents' views and our decisions relating to steps 1,3, 4 and 5 for TI and Ethernet services.

is relevant across charge control baskets, and we received a number of consultation responses on this issue. This issue is discussed in greater detail in this Section.

- 18.6 Below, we set out our LLCC Consultation proposals for each of these steps, followed by respondents' views and our decisions.
- 18.7 We also proposed to make various adjustments to BT's cost data. These are specific to each charge control basket and were discussed in Sections 5 and 6 of the LLCC Consultation.

Step 1 - Identifying the relevant services and appropriate charge control baskets and sub-caps

The LLCC Consultation proposals

- 18.8 A charge control can either be applied to an individual service or a 'basket' of services. A charge control basket is defined as the group of products or services that are subject to the same charge control restrictions. Combining services in a single basket means that the RPI-X constraint would apply to a weighted average of the changes in the prices of the services in the basket. In the LLCC Consultation, our proposals were guided by the following principles in designing our baskets:
- ensuring relative prices are set at efficient levels and allowing for efficient cost recovery;
 - safeguarding against the risk of adverse effects arising from price distortion, particularly excessive pricing or unduly discriminatory pricing; and
 - giving the flexibility to allow for efficient migration when appropriate.
- 18.9 We explained how these principles were relevant in determining the advantages and disadvantages of combining services into relatively broad baskets and discussed how those disadvantages could be addressed. We then discussed how we proposed to implement our principles for basket design.
- 18.10 We noted that a broad basket would give BT some pricing freedom to determine the structure of prices which meet the charge control. We considered that pricing freedom was more likely to result in charges which allow BT to recover its costs, particularly fixed and common costs, in an efficient way. This is important in the case of wholesale leased lines because their provision is characterised by high fixed and common costs and low marginal costs.
- 18.11 For example, costs do not normally increase in direct proportion to the bandwidth of the circuit. Simply setting all charges equal to a measure of accounting costs, such as FAC, may result in a lower level of output than with a more flexible pricing structure. In the example of bandwidth, the use of a FAC based approach could mean spreading the fixed and common costs evenly across all products. This could push up charges for lower bandwidth products and reduce them for higher bandwidths. This may not be the most efficient way to recover common costs.
- 18.12 We also considered that a broad basket allowed BT to respond to changes in demand and costs by changing relative prices to re-optimize charges for new patterns of demand. Narrow basket definitions would mean that Ofcom determines the structure of relative prices at the start of a control period, and BT would have little

freedom to vary it thereafter. We believe that this is inappropriate in a market that is changing rapidly. Furthermore we believe that BT is better placed to assess the demand patterns in detail and set relative prices for each product.

- 18.13 We also noted that a broad basket may be advantageous where it is desirable to allow BT to set prices to encourage efficient migration between an old service and/or technology and a new replacement. Where the customer (rather than BT) takes the decision to migrate, it can be optimal to set lower prices for services supplied using the new (lower cost) network and higher prices for services supplied using the old network. BT can be given the necessary flexibility to offer lower prices on the new service, in order to encourage efficient migration, by including both old and new services in a single charge control basket.
- 18.14 We noted that for these reasons, Ofcom has often chosen to combine services into broad baskets, unless there are reasons not to do so. This had been our position in previous charge controls, such as LLCC 2009, Network Charge Controls (NCCs), WBA CC and the ISDN30 charge control.
- 18.15 We considered that the main disadvantage of a broad basket was that, in some circumstances, the flexibility to set relative charges could be exploited by the regulated firm to harm competition. Two sets of circumstances are particularly relevant, as explained below.
- 18.16 First, BT may have an incentive to price in a manner that favours its downstream operations. Where BT and competing operators use different wholesale services to provide the same downstream service, BT may have an incentive to reduce the price of the wholesale service it uses most and increase the price of the wholesale service used by its rivals. Placing both wholesale services in a single charge control basket without further restrictions could give it the ability to behave in this way, and this could harm competition.
- 18.17 Second, there may be differences in the intensity of competition which BT faces in the provision of different services. If competitive conditions differ between services within a single basket, BT may have an incentive to concentrate price cuts on the most competitive services and offset these with increases where competition is weaker. This might lead to excessive charges for the less competitive services and might also encourage anti-competitive pricing of the more competitive services.
- 18.18 We considered that it is possible for both these those concerns to be addressed by using more narrowly defined baskets. Each basket could be defined to include only services where there is broadly the same degree of competition, and there could be separate baskets for services which are used predominantly by BT on the one hand, and for services which are mainly used by its competitors on the other.
- 18.19 We also noted that sub-caps within a basket can also be used to address these concerns. We considered that it may often be preferable to define a broad basket and to prevent BT from setting charges which could harm competition by means of sub-caps. In this way, harm to competition can be prevented whilst, at the same time, retaining the benefits of pricing flexibility.
- 18.20 We considered that whether a broad basket with sub-caps is preferable to a larger number of smaller baskets would depend on the circumstances of the case. In general, the benefits of broad baskets are greater the greater the extent of common costs and the stronger the incentives on BT to set efficient charges. Separate

baskets may be preferable where BT has a strong incentive to set charges in a way which disadvantages its rivals.

18.21 We identified a set of principles to use when we evaluate whether it would be appropriate to combine certain services together in a broad basket or keep them in separately controlled baskets in our proposed charge controls. We proposed to apply them in the ways set out below:

- efficient pricing – where the services being considered share substantial common costs, a single basket is more conducive to efficient pricing and cost recovery.
- competition – where the services being considered face different competitive conditions or where BT does not use the same wholesale inputs as its rivals, placing them in the same charge control basket may give BT the ability to set prices in a way that undermines competition. In this case, we would consider introducing sub-caps or placing the services in separate baskets.
- migration incentives – where it is appropriate for BT to encourage migration from a legacy service to a more efficient service, placing the services in the same basket would give BT the flexibility to do so.

Consultation responses

18.22 We did not receive responses on the general approach followed in relation to step 1. However, for stakeholder responses in respect of the application of step 1 in particular contexts, please see Sections 19 and 20.

Our response and conclusions

18.23 We have decided to follow the principles for basket design as proposed in the LLCC Consultation. For details of our implementation of these principles, please see Sections 19, 20 and 22.

Step 2 - Determining the base year costs

18.24 We received a number of responses to the LLCC Consultation relating to step 2. We have divided our discussion below into six parts, reflecting elements which are relevant to determining the cost base from which base year unit costs can be established:

- the data period used for base year costs;
- the choice of cost standard;
- the approach to geographic costs;
- the approach to SLAs and SLGs;
- the approach to pension costs; and
- technology benchmarks for the main baskets.

Data period for base year costs

The LLCC Consultation proposals

18.25 The base year used for the LLCC model in the Consultation was the financial year 2010/11. We used BT's 2010/11 RFS data as it was the most recent fully audited regulatory statements available to us at the time we were developing our proposals.¹³⁰⁹ We also used relevant base year data for services that had not been included in BT's RFS but which we proposed to charge control for the first time, such as Ethernet services above 1Gbit/s. BT provided this data separately from the RFS data.

Consultation responses

18.26 Two respondents commented specifically on our proposal to use 2010/11 as the base year for the LLCC model.

18.27 CWW argued that we should adopt the 2011/12 RFS as the base year for the Statement, or at the very least, amend our forecasts in the light of the information in the 2011/12 RFS.¹³¹⁰ CWW considered that the 2011/12 RFS data shows that 2010/11 was not a representative year for the forecast price control period. In particular, CWW argued that using 2010/11 alone as the base year was likely to result in forecasts which are much less reliable than those which could be generated based on 2011/12. This is because they claimed that the profitability of AI services appears to have been temporarily depressed in 2010/11 and the profitability of AI services in 2010/11 remains dominated by legacy Ethernet services (which are of limited relevance for the forecast price control period).

18.28 Similarly, Level 3 commented that we should update the base year to align with the 2011/12 RFS.¹³¹¹

18.29 BT did not specifically address the issue of the choice of base year but it noted in the executive summary of its response that 'market circumstances have changed since Ofcom collected data for the LLCC and volume forecasts need to be reviewed downwards'.¹³¹²

Our response and conclusions

18.30 We have decided to change our base year to 2011/12. We have considered carefully the arguments raised by CWW about the data period used for base year costs in the response to the LLCC Consultation.

18.31 We note that both the TI and Ethernet markets are rapidly changing. If we were to use 2010/11 data then this may lead to a less accurate prediction of cost and volume changes than if more recent data were used. We have therefore updated our model using the 2011/12 RFS data as the base year for the Statement. We consider that the use of the 2011/12 RFS, rather than the 2010/11 RFS, is likely to result in more reliable forecasts for the charge control period.

¹³⁰⁹ BT publishes its financial statements on its website and they are available at: <http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/index.htm>

¹³¹⁰ See CWW response to the LLCC Consultation, paragraph 2.3, page 4.

¹³¹¹ See Level 3 non-confidential response to the LLCC Consultation, page 5 and section 11, pages 44-47.

¹³¹² See BT non-confidential response to the LLCC Consultation, paragraph 7, page 5.

Using CCA FAC as our cost standard

The LLCC Consultation proposals

18.32 Under a charge control, we typically set charges to allow BT to recover the incremental costs of provision plus an appropriate mark-up to allow for the recovery of common costs.¹³¹³ In the context of determining the apportionment of common costs for this charge control, we considered two main options:

- CCA FAC - under this approach, all the firm's costs are distributed among the services it provides. Under the CCA accounting convention, assets are valued and depreciated according to their current replacement cost.¹³¹⁴
- Long Run Incremental Costs + Equi-proportional Mark-Up (LRIC+EPMU) - using this approach, we would allocate common costs across the different services in proportion to the LRIC of individual services.¹³¹⁵

18.33 When assessing the cost base for our charge control, we start with an assessment of forward-looking costs, and include sunk costs, by exception, where appropriate for dynamic efficiency reasons. Both the CCA FAC and LRIC+EPMU options are charges based on forward-looking costs and provide appropriate incentives for entry and investment. Also, both approaches include an allocation of fixed common costs to allow for full cost recovery.

18.34 Duct costs are not forward looking costs (as they are sunk costs), but form part of the CCA accounts. We included duct costs in our cost base for reasons of dynamic efficiency. If BT was not able to recover its sunk costs, this would deter future investment. However, this does not necessarily mean that BT should be allowed to recover the full replacement value of these sunk assets. In our assessment of base year costs, we considered what a reasonable return would be on these sunk assets, so as not to deter future investment.

18.35 While we considered that either of the above options could reasonably be used as our cost standard, we selected CCA FAC for the reasons set out below:

- The use of CCA FAC is consistent with the approach we have adopted for other recent charge controls (such as LLCC 2009 and the WBA CC).¹³¹⁶ Consistency across the regulation of different services in BT ensures that all common costs can be recovered, whilst avoiding double recovery.
- Monitoring BT's actual financial performance on a LRIC basis is not straightforward, as information on wholesale service profitability is generally prepared on a CCA FAC basis. A charge control based on CCA FAC data can be

¹³¹³ Common costs are those which arise from the provision of a group of services, but which are not incremental to the provision of any individual service.

¹³¹⁴ An alternative to CCA would be HCA convention, where assets are valued and depreciated according to their historical purchase cost.

¹³¹⁵ For example, if the LRIC of service X was £100/unit and the LRIC of service Y was £50/unit, then (assuming the same volumes of each service) we would have a 2:1 ratio. If BT had common costs of £6m, an equi-proportional mark-up would allocate £4m to service X and £2m to service Y.

¹³¹⁶ See paragraphs 5.61 to 5.64 of the WBA CC Statement: <http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/>

reconciled more easily to BT's RFS, which are audited and are in the public domain.

- The LRIC+EPMU approach would require a more time-consuming exercise that would involve reviewing BT's LRIC estimates for individual services and ensuring that they provide an appropriate basis for attributing common costs.
- A LRIC+EPMU approach requires that common costs are allocated in proportion to the LRIC costs of each service, whereas CCA FAC is based on BT's methodology for allocating common costs.

18.36 We noted that our use of CCA FAC was scrutinised by the CC in the appeal of the now expired WLR LLU CC 2009.¹³¹⁷ In its determination, the CC found that we did not err in our use of CCA FAC. It also found that we had given sufficient weight to allocative and dynamic efficiency factors in adopting a CCA FAC approach to cost allocation.¹³¹⁸

18.37 Based on these arguments, we proposed to use CCA FAC as our cost standard for setting the LLCC.

Consultation responses

18.38 BT agreed with the use of CCA FAC as "CCA FAC outputs that have been reconciled to the 2010/11 RFS". No other respondent commented on this issue.

Our response and conclusions

18.39 We have decided to proceed with the proposals in the LLCC Consultation to adopt CCA FAC as our cost standard.

Using geographically disaggregated cost data

The LLCC Consultation proposals

18.40 In the June BCMR Consultation, in the UK (outside the Hull area) we proposed two geographic markets (the WECLA, and the UK excluding both the WECLA and the Hull area) for wholesale medium and high bandwidth TISBO services and wholesale AISBO and Ethernet above 1 Gbit/s services. We proposed not to find SMP (and therefore not to impose a charge control or other remedies) for wholesale medium and high bandwidth TISBO services in the WECLA. We proposed to find SMP and to impose a safeguard cap for wholesale AISBO services in the WECLA.

18.41 BT's published RFS includes national costs (excluding the Hull area). However, some costs could vary by geography, leading to cost differences between the charge controlled and non-charge controlled areas. This would mean that, in order to model the costs in the charge controlled area accurately, we should in principle use geographically disaggregated costs, particularly if there were material differences in

¹³¹⁷ The Ofcom publications relating to the WLR LLU CC 2009 are available here: <http://stakeholders.ofcom.org.uk/consultations/wlr/>

¹³¹⁸ Competition Commission, *The Carphone Warehouse Group plc v Office of Communications*, Case 1149/3/3/09. See, for instance, paragraph 3.161. http://www.competition-commission.org.uk/appeals/communications_act/wlr_determination.pdf

unit costs.¹³¹⁹ Therefore, we requested BT to provide information on the disaggregation of costs between the WECLA and the rest of the UK.¹³²⁰

- 18.42 Both BT Wholesale and Openreach confirmed that there are cost differences between the WECLA and the rest of the UK¹³²¹ and we proposed to use these geographically disaggregated costs.

Consultation responses

- 18.43 BT agreed with our approach to use geographically disaggregated cost data.¹³²² No other respondent commented on this issue.

Our response and conclusions

- 18.44 We have decided to maintain our proposals in the LLCC Consultation and to use geographically disaggregated cost data. We discuss how we applied this adjustment in more detail in sections 19 and 20.

Including SLA/SLG costs in the cost stack for modelling

The LLCC Consultation proposals

- 18.45 SLAs form part of commercial contracts and set out a supplier's commitment to provide services to agreed standards, e.g. within a specified period. The associated SLGs specify the level of compensation to which the customer would be entitled should the service not be provided to the quality specified in the SLA, e.g. if the service was late.
- 18.46 We considered that BT should be able to recover an efficient level of SLA/SLG costs. We would not expect BT to be staffing up to a level such that it would never have to make such payments, as this would be unlikely to be an efficient level. BT may sometimes fail to meet SLA/SLGs and have to make the required payments of which it should be able to recover an efficient level of costs associated with meeting SLA/SLGs. This reflects our approach in the WLR LLU charge control, for instance.¹³²³
- 18.47 If SLA/SLG costs are included within the cost stack for the purposes of modeling our proposed charge control, BT would still have the incentive to improve its performance against the SLA/SLGs and to bring its costs of doing so down. Therefore we considered that our proposal was consistent with giving BT appropriate incentives to invest and minimise costs.
- 18.48 We noted that the costs associated with SLAs and SLGs are included in the base year costs. In theory, we should include only the efficient level of these costs.

¹³¹⁹ In the LLCC 2009 we used nationally averaged cost data to model the charge control, despite the deregulation of 34/45Mbit/s and 140/155Mbit/s TI services in CELA. At this time it was not possible to obtain geographically disaggregated cost data. We concluded that, in this case, the use of nationally averaged data was not likely to pose a risk to cost recovery or to competition or consumers. See paragraphs 3.196-3.215 of the LLCC 2009 Statement.

¹³²⁰ BT response to S.135 Notice of 1 July 2011.

¹³²¹ BT Wholesale response to S.135 Notice dated 11 April 2012 and Openreach response to S.135 Notice dated 30 April 2012.

¹³²² BT non-confidential response to the LLCC Consultation, paragraph 1, page 12.

¹³²³ <http://stakeholders.ofcom.org.uk/consultations/wlr-cc-2011/>

Determining the efficient level of these costs is a significant and time-consuming exercise, and we consider that it would only be worthwhile to undertake this in response to significant existing concerns or if material changes in terms were proposed. We proposed no further adjustments to the existing level of costs that are in the cost stack.

Consultation responses

18.49 In its response to the November BCMR Consultation, CWW stated that it expected the regulated charges for Ethernet services to compensate BT for the delivery of services as specified. CWW considered the inclusion of SLA/SLG costs in the LLCC inappropriate.¹³²⁴

Our response and conclusions

18.50 The costs associated with SLAs and SLGs are also included in the 2011/12 base year costs. Our analysis of the data from BT found that SLAs/SLGs were incurred on less than 5% of orders and that such payments accounted for an insignificant proportion of Ethernet costs.¹³²⁵ We consider that even an efficient operator would need to make some SLAs and SLG payments. As SLAs and SLGs amounted to an insignificant proportion of Ethernet costs, we do not consider BT's SLA and SLG payments to be excessive and we have therefore decided not to make further adjustment to the existing level of costs that are in the cost stack.

Including the ongoing costs of BT's pension scheme

The LLCC Consultation proposals

18.51 We considered the impact and treatment of contributions to BT's pension scheme for the purpose of our proposed charge controls. In so doing, we had regard to our Pension Cost Guidelines as applied to the specific circumstances relevant to our proposals in the consultation.¹³²⁶

18.52 Those Guidelines set out our general policy as to the approach we normally expect to take in relation to the treatment of BT's pension costs when assessing the efficiently incurred costs of providing relevant regulated products or services. In summary, we have three specific Guidelines in this regard as set out below.

- **Deficit repair payments** – we intend to disallow any deficit repair payments when setting regulated charges and also to ignore the impact of any pension holidays BT may choose to take.
- **Ongoing service costs** – we intend to use statutory reported accounting costs as a measure of ongoing service costs when assessing pension costs as part of regulated charges.
- **Cost of capital** – we intend to make no adjustment to the cost of capital to account for a defined benefit pension scheme when setting regulated charges.

¹³²⁴ See CWW response to the November BCMR Consultation, page 1.

¹³²⁵ See BT response to S.135 Notice of 28 September 2012, [X].

¹³²⁶ See Annex 1 of the Statement entitled 'Pensions Review', published on 15 December 2010, <http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/statement/statement.pdf>

- 18.53 We considered whether there were any reasons for taking a different approach in respect of deficit repair payments, in relation to our LLCC Consultation proposals, as compared to our first Guideline set out above, having particular regard to the leased lines services we proposed to include in our charge control. We did not identify any reasons for departing from that Guideline. Consequently, we proposed not to include costs relating to the repair of BT's pension deficit in the cost stack for the purposes of our proposals.
- 18.54 In reaching this view, we considered that, firstly, this proposed approach to deficit repair payments is appropriate to secure or further our statutory duties, including the objectives pursued by our proposals, and it is also needed to effectively address the applicable legal tests under the Act. Secondly, we were not aware of any new evidence that would demonstrate that there has been a material change in the circumstances since we adopted the Pension Cost Guidelines. Also, we carefully considered our position in light of the conclusions of the Competition Commission in its recent Determination¹³²⁷ concerning pension deficit repair payments for WBA services; although those conclusions were reached in light of the facts before the Commission, we considered that our proposed approach is consistent with its conclusions as applied to the LLCC Consultation proposals for leased lines.
- 18.55 Nor did we identify any reasons for departing from the remaining Guidelines with regard to ongoing service costs and cost of capital in relation to pension costs for the leased lines services covered by our proposed charge control. We therefore proposed, in our cost forecasts, to include the cost of ongoing pension contributions as reported by BT in the RFS and make no adjustment to the cost of capital to account for a defined benefit pension scheme (see Annex 7 of the LLCC Consultation for further issues concerning cost of capital).

Consultation responses

- 18.56 We have not received any responses on our proposal for treating the ongoing costs of BT's pension scheme.

Our response and conclusions

- 18.57 In line with our proposals in the LLCC Consultation and decision in the Pensions Review, we continue to consider it appropriate to:
- disallow any deficit repair payments when setting regulated charges and therefore ignore the impact of any pension holidays BT may choose to take;
 - use statutory reported accounting costs as a measure of ongoing service costs when assessing pension costs as part of regulated charges, and
 - make no adjustment to the cost of capital to account for a defined benefit pension scheme when setting regulated charges.

¹³²⁷ British Telecommunications plc (Wholesale Broadband Access Charge Control) v Office of Communications (1187/3/3/11). Full details available at:

<http://www.catribunal.org.uk/237-7278/1187-3-3-11-British-Telecommunications-plc-Wholesale-Broadband-Access-Charge-Control.html>

Costs associated with the technology used to deliver leased lines services

The LLCC Consultation proposals

- 18.58 In the LLCC Consultation, we explained that Ofcom's preferred approach to setting charges is to base costs and asset values on what is believed to be the most efficient available technology that performs the same function as the current technology. This is sometimes described as the modern equivalent asset (MEA) approach to pricing.
- 18.59 In order to qualify as the MEA, a new, more efficient technology must be capable of at least delivering the same service, to the same level of quality and to the same customer base as the legacy technology.
- 18.60 The MEA approach protects customers from an SMP operator using an inefficient technology. If an SMP operator chooses to use an inefficient technology to deliver a service, then customers need not be penalised by this choice. Instead, prices are set as though the SMP operator had chosen to adopt the most efficient technology. This approach also encourages the SMP operator to adopt the most efficient technology.¹³²⁸
- 18.61 Setting prices on the basis of MEA costs is consistent with the asset valuation under the CCA framework where assets are valued at their current replacement cost. This is then reflected in changes in the underlying asset prices. This may lead to either holding losses (associated with reductions in the asset prices) or holding gains (increases in asset prices). In some circumstances the replacement asset might not be identical to the asset in use – it may have superior functionality and/or support additional services. In such cases, the MEA should reflect the cost of a functionally identical modern asset.¹³²⁹
- 18.62 There are circumstances where we would not set charges on the basis of the costs of new technology. Although gradual technological change can be readily incorporated by the MEA approach, more radical technological changes may pose significant challenges as explained below. During a period of such technological change, we often adopt the approach to charge control setting which we refer to as 'anchor pricing'.
- 18.63 The principle behind anchor pricing is that following technological change, prices should not rise above the level implied by the hypothetical continuation of the existing technology. This ensures that the introduction of new technology which is intended to provide a greater range of services does not inappropriately increase the prices for the existing services provided using the existing technology. Anchor pricing can be implemented in a number of ways, for example by using the current starting price as a starting point or by modelling based on the cost of existing technology, allowing for

¹³²⁸ As explained below, the anchor pricing approach also incentivises the SMP operator to adopt the most efficient technology. The key point is that, under both approaches, costs are modelled independently of the technology actually used by the firm.

¹³²⁹ We note that it may take some time for a new technology to be recognised as the MEA for accounting purposes. In the case of leased lines services, BT has explained that it has not made any MEA changes in its CCA methodology as a result of the introduction of 21CN. See page 8 of BT's CCA Detailed Valuation Methodology: <http://www.btplc.com/thegroup/regulatoryandpublicaffairs/financialstatements/2010/detailedvaluationmethodology2010.pdf>

business-as-usual efficiency gains, rather than that of any new technology which might be adopted during the control period.¹³³⁰

- 18.64 The anchor pricing approach means that charges do not immediately reflect the costs of a new technology but, for a time, may be based on the costs of an existing, proven technology. As we explain below, this approach is intended to give the regulated firm incentives to invest in new technology only when providing services over the new technology would lower its overall costs and/or would enable it to provide higher quality services for which consumers are willing to pay a premium. At the same time, consumers of existing services are not made worse off by the adoption of new technology. The price (and quality) of existing services are anchored by the legacy technology, even if the services are actually provided over new technology.
- 18.65 When we set a RPI-X charge control, we normally set X to bring projected revenues into line with projected costs by the end of the charge control period. We create a financial model to make the necessary projections of the relevant revenues and costs. If we use the anchor pricing approach to set the control, our cost projections usually reflect an assumption that existing technology remains in use for the period of the control. Additionally, we are likely to assume that all customers are supplied using this technology. In other words, costs are projected as if no major technological change were expected for the period of the control.
- 18.66 In the LLCC Consultation, Section 4 outlined three factors we considered in choosing whether to adopt an MEA or an anchor pricing approach for our proposed charge controls. These were:
- i) degree of certainty over costs;
 - ii) investment incentives; and
 - iii) customer migration.

Degree of certainty over costs

- 18.67 The MEA approach relies on Ofcom being able to set prices correctly based on the most efficient modern technology at a particular point in time. In some cases, it may be clear what the MEA is and the accurate cost data may be available. However, in other cases, there may be uncertainty regarding the 'correct' technology choice, as well as uncertainty around the corresponding costs. These practical challenges could mean that, in those cases, if Ofcom were to set charges on the basis of MEA, there is a risk of regulatory failure, which could lead to incorrect estimates of the forward-looking costs of providing leased lines services. Instead, the anchor pricing approach reduces the need to determine the relevant technology and the costs associated with this network.
- 18.68 There are a number of practical challenges to consider when setting prices on the basis of a technology that has not yet become established including that:

¹³³⁰ A detailed description of the principles of anchor product regulation was set out in our consultation on "*Future broadband: policy approach to next generation access*", 26 September 2007. In particular, see Annex 7 of the consultation document:

http://stakeholders.ofcom.org.uk/binaries/consultations/nga_future_broadband/summary/main.pdf

http://stakeholders.ofcom.org.uk/binaries/consultations/nga/summary/future_broadband_nga.pdf

In the document, we discussed the use of anchor product regulation in the context of investment in next generation access in the wholesale local access ('WLA') market.

- it would not always be clear what the most efficient new technology is at any point in time;
- it would be very difficult to set the prices on the basis of a new reported unit cost for a technology in the early stages of its adoption because, initially, costs are unlikely to be a good indicator of their long-term values; and
- to enable cost recovery with this approach, it requires the regulator to allow separately for any transitional costs (e.g. migration costs) and to choose the optimal path for transition.

Investment incentives

- 18.69 It is important that the cost standard we adopt is consistent with efficient investment incentives. The anchor pricing approach will in general give efficient signals for investment, although it may not ensure that the benefits of new, lower-cost technology are shared with consumers. Although the MEA approach allows customers to share in the benefits of new technology, we need to ensure that this is consistent with appropriate incentives for investment.
- 18.70 In a market with rapidly changing technology, the MEA for a given service may change frequently. There can be significant sunk costs involved in investing in a new technology as well as transition costs in moving from one technology to another. If these are not taken into account, then changes in the MEA may not allow efficient operators to recover those costs and so may disincentivise future investment.
- 18.71 We illustrated this by an example. Suppose BT invests in a technology (technology A) which at the time is considered to be the most efficient technology available. BT anticipates that it will recover its costs over a ten year period. After five years, a new lower cost technology emerges (technology B). The adoption of technology B as the MEA may mean that BT would not have recovered the costs involved in investing in technology A therefore resulting in a holding loss. This holding loss would not be a consequence of inefficiency because, at the time of investment, technology A was the most efficient technology available.
- 18.72 If this holding loss was difficult to forecast (and so could not have been anticipated with any degree of confidence), then the MEA approach may not be the best approach given that the SMP operator should have a reasonable expectation of being able to recover its costs.
- 18.73 If BT has not had a fair opportunity to recover its investment in technology, then an approach that expropriates sunk costs has the potential to disincentivise future investment. However, this does not mean that the MEA approach should prevent losses that are caused by an operator's inefficiency. Nor should it lead to higher prices than would be charged under an anchor pricing approach. However, it does mean that in adopting the MEA approach, we may need to take into account holding losses associated with the legacy technology and/or transition costs associated with the new technology.
- 18.74 By contrast, the use of anchor pricing will tend to be consistent with efficient investment incentives. The anchor pricing approach allows BT to keep any efficiency gains made during the charge control period as a result of adopting new technology. Hence, if the costs of serving customers on the new platform are lower than we have forecast (using the anchor pricing model), BT would be able to retain any additional profits associated with those cost savings. This gives BT the incentive to make this

investment if it is expected to reduce costs later, as would occur in a competitive market.

- 18.75 We recognised in the LLCC Consultation that the anchor pricing approach may not necessarily achieve allocative efficiency, because prices may not always equal costs at every point in time. However, this is a characteristic of RPI-X regulation in general and we believe this delivers consumers' interests in the long run. We considered that attaching a high weight to productive and dynamic efficiency would be of greater benefit to consumers over time and that the anchor pricing approach should ultimately result in lower prices to consumers.¹³³¹

Customer migration

- 18.76 Where the customer takes the decision to migrate, it can be efficient to set lower prices for services supplied using the new network and higher prices for services supplied using the old network. This would encourage migration to the new network, and allow the operator to benefit from economies of scale (i.e. not running two networks).
- 18.77 In order to allow BT to encourage efficient migration in this way, the two types of service would have to be placed in the same charge control basket. This would allow BT to adjust the relative prices of the services. In this way, the MEA approach can be consistent with encouraging efficient migration.
- 18.78 The anchor pricing approach may be more appropriate during a period of significant technological change, when it is important that BT is given incentives to invest where it is efficient to do so, but when the migration path is unclear or when the benefits to customers of migrating are uncertain. In these circumstances the key decisions are made by BT, rather than customers, since it chooses whether to invest or not. The anchor pricing approach would incentivise such efficient investment whilst protecting customers from the risks involved.

Assessment criteria to be used

- 18.79 In the light of the factors discussed above, we identified in the LLCC Consultation a set of questions that would guide our choice as to which approach we considered is most appropriate for our proposed charge controls.
- 18.80 Those questions are set out below:
- i) Can we identify the relevant MEA for delivering the service in question?
 - ii) Can we calculate robust cost estimates for the services based on the MEA?
 - iii) Would the use of the MEA approach allow an efficient operator to recover its costs?
 - iv) Does the MEA approach give appropriate migration signals to consumers?
- 18.81 We addressed these questions for each of the technological changes to BT's network in Sections 5 and 6 of the LLCC Consultation.

¹³³¹ For instance, in its decision on the WLR LLU CC 2009 appeal, the CC found that we did not err in adopting the anchor pricing approach. See: http://www.competition-commission.org.uk/appeals/communications_act/wlr_determination.pdf

Consultation responses

18.82 We received no responses on the methodology used for deciding whether to adopt the MEA or anchor pricing approach.

Our response and conclusions

18.83 We have decided to adopt the methodology proposed in the LLCC Consultation.

Step 3 - Forecasting costs for the duration of the charge control**The LLCC Consultation proposals**

18.84 In the LLCC Consultation we also set out other key stages in arriving at our charge control proposals. As we explained, having modelled the relevant base year costs under step 2, the next step is to forecast (from this starting point) how costs are likely to change over the duration of the proposed charge control.

18.85 We set out that the key determinants of cost movements in our model are:

- volume changes;
- the impact of those changes on capital and operating expenditure (as reflected in the Asset Volume Elasticities (AVEs) and Cost Volume Elasticities (CVEs);
- asset price changes;
- anticipated improvements in BT's efficiency; and
- the cost of capital.

Volume changes

18.86 We explained that in order to understand how costs are likely to change over the charge control period, we forecast the volume of leased lines services that BT is expected to supply. Changes in the volume of BT's leased lines services will be affected by overall market growth, as well as BT's expected share of the leased lines markets. To assess this, we reviewed forecasts based on information provided from various stakeholders and external sources.

18.87 This is discussed in more detail in Sections 19 and 20 and Annex 12.

Relationship between costs and volumes

18.88 We explained that having forecast the changes in volumes, we then model how the costs of the components that make up leased lines services will vary in response to volume changes for particular services. To do this, we used estimates of the AVEs and CVEs.

- CVEs (defined as the percentage increase in operating costs for a 1% increase in volume) are used to determine the level of operating costs in response to changes in volume; and

- AVEs (defined as the percentage increase in assets required for a 1% increase in volume) are used to determine the level of capital costs in response to changes in demand for leased lines services.

18.89 This is discussed in more detail in Sections 19 and 20 and Annex 12.

Asset prices

18.90 We explained that the price that BT has to pay for new assets will clearly impact on its costs. Changes in asset prices impact on BT's asset base valuation and give rise to holding gains or losses which are reflected in operating costs in the year in which they arise. In order to assess these costs, we forecast the likely changes in the price of assets over the duration of the charge control.

18.91 This is discussed in more detail in Sections 19 and 20 and Annex 12.

Efficiency estimates

18.92 We explained that we forecast the expected efficiency improvements that BT might reasonably be expected to achieve over the duration of the charge control. These efficiency improvements relate to expected changes in real unit costs, which do not depend on changes in volumes, but reflect the general improvements in efficiency.

18.93 This is discussed in more detail in Sections 19 and 20 and Annex 12.

Cost of capital

18.94 We explained that under a charge control, we set the value of 'X' so that the value of BT's rate of return projected for the last year of the charge control is equal to its weighted average cost of capital (WACC). This approximates to the workings of a competitive market in which any excess profits are gradually eroded by competition.

18.95 As discussed in Sections 19 and 20, we have applied a real pre-tax cost of capital equal to 7.0% for both the TI and Ethernet services. The methodology behind this proposal is explained in Annex 14.

Consultation responses

18.96 We did not receive responses on the general approach followed in relation to step 3. However, for stakeholder responses in respect of the application of step 3 in particular contexts, please see Sections 19 and 20.

Our response and conclusions

18.97 We have decided to follow the principles for forecasting costs as proposed in the LLCC Consultation. For details of our implementation of these principles, please see Sections 19 and 20 and Annex 12.

Step 4 - Considering whether to make starting charge adjustments

The LLCC Consultation proposals

18.98 As part of our charge control assessment, we considered whether to propose making any one-off adjustments to prices. We discussed our assessment on the need to one-off adjustments in TI and Ethernet services in Sections 5 and 6 of the LLCC

Consultation respectively. We explain below the principles we used when considering whether to make starting charge adjustments.

- 18.99 Our general preference is to adopt a 'glide path' approach, whereby the charge control would bring about a gradual convergence of prices and unit costs over the period of the control, although in some cases adjustments could be justified at the start of the control where prices are markedly out of line with costs.

Our general preference is for glide paths

- 18.100 One of the features of price cap regulation is that profits may diverge from the level expected at the time when the control was set. Any such divergence may be taken into account when X is reset in the next price control review. In principle, one way in which this could be done is by a one-off adjustment to prices, which would bring the firm's expected rate of return to an acceptable level in the first year of the new cap. The main alternative is a glide path approach, which would set the control so that the expected rate of return reaches an acceptable level by the end of the price control period.

- 18.101 The benefit of the glide path approach is that it approximates more closely to the workings of a competitive market than one-off reductions, where excess profits are gradually eroded as rivals improve their own efficiency. It also avoids discontinuities in prices over time and leads to a more stable and predictable background against which investment and other decisions may be taken, by both suppliers and customers.

- 18.102 This approach also has greater incentives for efficiency as it allows the firm to retain the benefits of cost reductions made under a previous charge control for longer. This means that cost reductions feed into price reductions with an intentional regulatory lag. One-off adjustments to prices would reduce the effective regulatory lag, and hence the incentives to reduce costs.

- 18.103 Whilst the above discussions relate to one-off reduction to prices, one-off increases would similarly raise concerns about incentives for efficiency. Allowing a rapid rise in charges (i.e. via one-off price adjustments) would signal to BT that cost increases would quickly be followed by price rises. Therefore, if cost increases resulted in swift price increases this could reduce the incentive to control costs. Indeed, one-off adjustments upwards could create an expectation that other one-off adjustments – up or down – will be made in future, and this could also have adverse effects on incentives.

- 18.104 This suggests that it is often not appropriate, for example, to apply one-off reductions simply because prices at the start of the control are out of line with costs. One-off reductions may also reduce incentives to invest and make efficiency improvements; they impact on regulatory certainty and stability; and they would not necessarily best reflect the outcomes in competitive markets (whereby surplus profits are gradually eroded). Therefore, if returns at the start of a control are initially high, cutting the difference between prices and costs via a glide path is generally preferable.

When might we consider starting charge adjustments?

- 18.105 Whilst the above suggests a general preference for glide paths in the context of RPI-X controls, we still considered making one-off adjustments where we considered there to be good reasons for doing so. The circumstances under which they could be appropriate include:

- when there are strong allocative efficiency arguments for bringing charges into line with cost sooner (such as where BT's charges for particular services are out of line with cost-orientation requirements); and/or
- where the previous charges were unregulated or were not subject to a charge control and where BT's charges are high relative to costs.

18.106 Therefore, if prices of individual services are out of line with costs to an extent which could distort competition, we may need to address this through one-off reductions. However, in assessing possible starting charge reductions (and increases), we needed to balance this against alternative (and potentially more proportionate) regulatory approaches. It may be possible, for instance, for BT to make acceptable voluntary adjustments in prices without us having to mandate this through detailed one-off reductions (increases). We also needed to consider the materiality of the issue (particularly given the risk of damage to incentives associated with one-off adjustments).

Consultation responses

18.107 We received one response, from TalkTalk, on the principles we used when considering whether to make starting charge adjustments.

18.108 TalkTalk argued that we were wrong to use DSAC/DLRIC benchmarks to test whether starting price adjustments are required. It said that DLRICs and DSACs are not indicative of competitive distortions and have little or no economic relevance.

18.109 TalkTalk believed that we had not applied our stated approach consistently, since we proposed adjustments to ECCs even though they were within the benchmarks. TalkTalk believed that there were other reasons for making starting charge adjustments, such as whether there has been an error in over-estimating costs in the previous charge control that BT could have spotted but did not (such as on ECCs).¹³³²

18.110 TalkTalk opposed our suggestion that we might not make starting charge adjustments if BT makes a voluntary reduction, unless it can be shown that the voluntary reduction is the same as that which we would have imposed.¹³³³

Our response and conclusions

18.111 We have used the DSAC and DLRIC benchmarks as part of our assessment of whether it is appropriate to make one-off adjustments to charges when setting the charge control. We disagree with TalkTalk's argument that DSAC and DLRIC are not indicative of competitive distortions and have little or no economic relevance. We set out our reasons for taking this view below.

18.112 When setting a charge control, one of our primary concerns is typically to promote allocative efficiency while allowing common costs to be recovered in an efficient way.¹³³⁴ Large common costs are a feature of the leased lines services BT provides.¹³³⁵ In choosing the appropriate benchmark against which to assess whether

¹³³² See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.74-5.79.

¹³³³ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.78.

¹³³⁴ As set out above, our other aims of promoting productive efficiency and dynamic efficiency guide our general preference for glide paths.

¹³³⁵ See Sections 19, 20, and Annex 12.

one-off adjustments to charges should be made, we must also take into consideration the need for a cost standard to give BT the theoretically desirable degree of price flexibility, consistent with allocatively efficient common cost recovery, and which is practical in terms of its measurement and use.

18.113 We see DSAC and DLRIC as a way of remaining sufficiently close to the underlying objective of maximising efficiency, while at the same time being more practical than SAC, LRIC and combinatorial tests. DSAC and DLRIC are derived from the concepts of the underlying contestable market theory but are a simpler and more practical alternative to combinatorial tests. DSAC and DLRIC are therefore already modifications moving away from the 'pure' theory due in part to practical constraints.

18.114 FAC+/-, a possible alternative to DSAC and DRIC, is a further movement along this trade-off, having some practical advantages over DSAC but with less theoretical justification – DLRIC and DSAC are tied to the theoretical LRIC and SAC concepts at the level of the broad increment, but this would not be true of FAC+/-.

18.115 In addition, we note that these benchmarks are well understood by stakeholders and that their use has been upheld in the context of the LLCC 2009 Appeal¹³³⁶ and the PPC Judgement¹³³⁷ by the Competition Appeals Tribunal.

18.116 We have considered TalkTalk's view that our proposal for adjusting ECC starting charges indicates that we have not applied our approach in determining starting charge adjustments consistently. In assessing whether it is necessary to make any starting charge adjustments, we consider whether charges are significantly out of line with costs. Although we typically inform our assessment by comparing charges to cost orientation benchmarks (i.e. DRLIC and DSAC), we were not able to perform this exercise for ECCs as BT does not calculate such cost measures for these services. As set out in Section 22, for ECCs we did however carry out a detailed analysis of Openreach's costs and revenues by examining a sample of projects provided by Openreach. We have therefore also examined whether ECC charges are significantly out of line with costs and on this basis we consider that we have applied our approach in determining starting charge adjustments consistently.

18.117 We have considered TalkTalk's argument that starting charge adjustments would also be justified to correct for errors in the previous charge control that may have led to over-recovery of costs. In each charge control, we re-evaluate our approach on a number of areas. In some cases, we have adopted a different approach to that taken in the LLCC 2009. It is possible that, if we had made the same policy decisions in the LLCC 2009 as in the present charge control, different overall reductions in charges may have resulted. Such changes in regulatory approach between charge controls are not likely to be biased in favour of one direction or another. We do not consider it proportionate to make a starting charge in this charge control to correct for a different regulatory approach in the previous charge control.

18.118 In relation to whether we should accept voluntary adjustments to BT's prices, we will assess whether it is appropriate to do so on a case by case basis. In the present charge control, the issue of voluntary adjustments has not arisen.

¹³³⁶ Cable & Wireless UK v Office of Communications (Leased Lines Charge Control), Case number 1112/3/3/09, 20 September 2010. <http://www.catribunal.org.uk/237-4334/1112-3-3-09-Cable--Wireless-UK.html>

¹³³⁷ British Telecommunications v Office of Communications, Case number 1146/3/3/09, 22 March 2011: www.catribunal.org.uk/files/1146_BT_Judgment_CAT5_220311.pdf

Step 5 - Calculating the value of X for the basket(s) of services

The LLCC Consultation proposals

18.119 We explained that having forecast costs for each basket, we then model the value of X required to bring BT's prices at the start of the charge control in line with forecast costs in the last year of the charge control period. This provides us with an initial value of X for each of the charge control baskets reflecting expected cost reductions and the elimination of any super-normal profits existing at the start of the charge control period.

18.120 If we apply adjustments to starting charges under step 4, this would also impact the value of X. For example, if we applied a one-off downward adjustment to the starting charge this would mean that the value of X required to bring prices in line with forecasts costs in the last year of the charge control period would be smaller in absolute terms.

18.121 We outlined our specific proposals on the value of X for each charge control basket in Sections 5 and 6 of the LLCC Consultation and explained our methodology behind our calculations in more detail in Annex 5 of the LLCC Consultation.

Consultation responses

18.122 We received no responses on our proposed approach for calculating X.

Our responses and conclusions

18.123 We have decided to follow the principles for calculating X as proposed in the LLCC Consultation. For details of our implementation of these principles, please see Sections 19 and 20.

Other methodological issues

18.124 We have also considered other methodological or policy issues in our charge controls. These are as follows:

- whether to use prior year or current year revenues to weight baskets; and
- how to treat discounts in assessing compliance with charge control basket(s).

18.125 We explain our approach to these issues below.

Prior year weights

The LLCC Consultation proposals

18.126 The controls proposed in the LLCC Consultation on BT's wholesale circuit charges limit the weighted average change in BT's charges to a maximum of RPI-X. Under the basket approach, it is necessary to calculate the weights apportioned to the services within the basket to determine the value of X and to assess BT's compliance with the controls. Regulators who have applied this form of control have generally used one of two main methods of calculating these weights – 'prior year revenue weights' or 'current year revenue weights'.

- 18.127 Under the prior year weighting approach, basket weights are set equal to the proportions of basket revenues accruing to the relevant services in the year prior to the one in which the price change occurs. Under the current year weighting approach, the weights are set equal to the proportion of current year basket revenues accounted for by each service as a proportion of total current year revenues.
- 18.128 Ofcom has generally preferred prior year weighting. This is primarily because current year weights cannot be calculated with certainty until after the end of the price control year in which compliance is being assessed. This means that, to decide how far to reduce prices, the charge controlled firm has to make forecasts of weights, with the consequent need for it to make retrospective adjustment for errors in forecasting.
- 18.129 Another potential disadvantage with current year weights is that average revenue can be affected by a change in the product mix within the basket. For example, average revenue will fall if the quantity sold of a lower priced product within the basket increases relative to the quantity sold of a higher priced product, even if the prices of both products are unchanged. This is sometimes referred to as the ‘apples and pears problem’.¹³³⁸ In some markets (e.g. gas or electricity markets) in which average revenue controls have been used, output can be expressed in a convenient common unit, which avoids this problem, but this is much less likely to be true in telecoms markets.
- 18.130 By contrast, a prior year weighted control relies only on revenue information which is already known when setting prices to comply with the control. This makes BT’s task of complying with the charge control less complex and makes it more transparent for stakeholders.
- 18.131 However, a feature of prior year weighting is that it does not allow for relative price or volume changes during the year in question (though these will of course be included in the weighting for the following year). This means that prior year revenue weights can have a disadvantage when revenues from different products within a basket are expected to change markedly relative to each other over the period of the charge control.¹³³⁹
- 18.132 Due to the factors explained above and, in particular, information being available to determine prior year weights, but not being available for current year weights we proposed to use the prior year weighting approach given the greater certainty provided.

Consultation responses

- 18.133 Level 3, CWW, TalkTalk, Sky and BT all expressed concerns with our proposal to use prior year revenue weights to assess compliance with the basket controls.
- 18.134 Level 3 was concerned that prior year weights may give a less accurate picture than would be the case were more recent figures used. It believed that more recent

¹³³⁸ So called because if apples and pears are sold at different prices, compliance with a control on the average revenue from fruit will be affected by changes in the relative quantities of apples and pears sold.

¹³³⁹ This is particularly relevant in the case of the migration from legacy Ethernet to new Ethernet services, which was discussed in detail in Section 6 of the LLCC Consultation. There we explained how we proposed to deal with this issue.

figures would exist so it would be possible for Ofcom to obtain and use these to ensure a forecast that could be plausibly verified.¹³⁴⁰

18.135 CWW was concerned that because of the different rates of growth of different products and the use of prior year revenue weighting, over the previous leased lines charge control, BT had recovered more than it would have done if the current year revenues were used in the TI market.¹³⁴¹ CWW argued that this had been achieved by focusing price rises on services with a rising share of revenues and price decreases on services which account for a falling share of revenues. CWW argued that its analysis suggests that the cumulative effect of the inflated increases equates to an unwarranted cost over-recovery of nearly £70m over the three year course of the price control.

18.136 CWW considered that we should change our approach on this issue and suggested a number of options, including:

- using current year weights;
- using weights based on the prior six months; and
- a tightening of sub-caps to further limit the scope for large gaps between price rises for some services and price falls for others.

18.137 TalkTalk argued that we failed to mention the key weakness of prior year weighting and that many of the advantages that we attributed to prior year weighting are illusory.¹³⁴²

18.138 TalkTalk argued that the key weakness of prior year weighting, which it said had not been identified by Ofcom, is the ability it gives BT to ‘game’ the charge control by focusing price decreases on products which are declining in volume. In terms of Ofcom’s analysis of the benefits of prior year weighting, TalkTalk argued that:

- Ofcom’s claim that current year weighting suffers from the ‘apples and pears’ problem since “*average revenue can be affected by a change in the product mix within the basket*”,¹³⁴³ can equally be applied to prior year weighting;
- Ofcom’s claim that prior year weighting is more transparent for stakeholders is plainly false since stakeholders do not see or know what weightings are used (whether they are prior year or current year); and
- prior year weighting does not provide more certainty about the weights for BT because the prior year weights will not be known until after the end of the prior year yet the price changes at the start of a year will need to typically be announced 90 days before the start of the year and will probably rely on weighting data four to five months before the start of the year.

18.139 TalkTalk considered that BT’s RFS should include a compliance statement that shows the average price change and weightings for the elements in the basket (the

¹³⁴⁰ See Level 3 non-confidential response to the LLCC Consultation, page 20.

¹³⁴¹ See CWW response to the LLCC Consultation, paragraphs 14.1-14.16, pages 62-65.

¹³⁴² See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.71-5.73, pages 49-50.

¹³⁴³ The LLCC Consultation, paragraph 4.113

average price change should be shown using the previous year weights and the current years weights).

18.140 Sky argued that Ofcom should use a current year weighting mechanism for the Ethernet basket. Sky argued that in the case of the Ethernet basket, there is a predictable and large scale migration from legacy services to new ones. Arguing that BT's incentive to apply larger price reductions to services in decline will be tempered by its incentive to migrate customers more quickly to newer growing services, Sky expressed the view that Ofcom should use current year weighting in this instance as prior year weights would give BT too much scope to earn excessive returns.

18.141 BT was supportive of the use of prior year weights for the TI basket control¹³⁴⁴ but considered that their use was not appropriate for the Ethernet basket control.¹³⁴⁵ BT agreed with Ofcom's analysis in the LLCC Consultation that the use of prior year weighting for the control will tend to make it hard for Openreach to achieve the RPI-X in such a way as to reduce prices of new technology services such as EAD compared to legacy services based on WES, in order to stimulate migration from old to new, without Openreach giving away significantly more revenue than 'RPI-X' throughout the control period.¹³⁴⁶

18.142 However, BT disagreed with Ofcom's conclusion that this effect is not significant enough to change the approach (i.e. depart from prior year revenue weighting) as there is an existing price differential between legacy and new services to support migration, and this could be maintained throughout the control period.¹³⁴⁷ BT considered that Ofcom did not correctly analyse the current differential and that a more significant differential is required to encourage customers to migrate. Therefore, in BT's view, Ofcom under-estimated the size of the problem caused by the use of prior year weights.¹³⁴⁸

18.143 BT said that in order to encourage migration to new services, such as from WES to EAD, it will need to make sure that there is a sufficient price differential between the services (between 24%-32%) to encourage customers to migrate.¹³⁴⁹ BT has estimated that in order to reach the desired price differential for legacy and new Ethernet services (and comply with the control) it would have to incur a substantial financial penalty of many tens of millions¹³⁵⁰ over the lifetime of the control.

18.144 BT proposed an alternative approach to compliance, consisting of:

- changing the definition of the prior year to be 12 months immediately before the control period starts and changing the start date of the control to 1 April 2013; and

¹³⁴⁴ See BT non-confidential response to the LLCC Consultation, paragraph 1, page 12.

¹³⁴⁵ See BT non-confidential response to the LLCC Consultation, paragraphs 15-20, pages 20-21.

¹³⁴⁶ The LLCC Consultation, paragraph 6.107

¹³⁴⁷ The LLCC Consultation, paragraph 6.109.

¹³⁴⁸ See BT non-confidential response to the LLCC Consultation, paragraph 17, page 20.

¹³⁴⁹ See BT non-confidential response to the LLCC Consultation, annex 1, page 52.

¹³⁵⁰ Openreach response to S135 Notice of 14 February 2013, [8].

- using prior year weights with an adjustment using the LLCC model forecasts of the current year volumes.¹³⁵¹

Our response and conclusions

18.145 We have considered stakeholder responses on prior year weights. We note that the main advantage of prior year weights is that, when deciding on price changes, the charge controlled firm has knowledge of the weights which will be used to assess compliance. This avoids the need for it to make retrospective adjustment for errors in forecasting. However, we acknowledge that prior year weights can have disadvantages when the mix of products in a basket is expected to change materially from one year to the next. In that case, prior year weights mean that products which have a larger weight in the prior year compared with the current year are given disproportionate importance in assessing compliance with the control. This is the case for products that are declining faster or growing less fast relative to other products in a basket.

18.146 We noted that this was a particular concern for Ethernet services, given the different growth rates for legacy and new services. In particular, legacy Ethernet services are overrepresented by a prior year weights control, whereas new services are underrepresented relative to in-year weights. This may give BT an incentive to make price cuts on legacy services to comply with the control as they are over-weighted in assessing compliance. This may conflict with efficient migration signals.

18.147 Within the TI basket, all services are forecast to decline so that the relative proportion of products differs less from year to year. The use of prior year weights has less of an impact on TI services. Nevertheless, we note that BT would still have an incentive to concentrate price reductions on services which decline at a faster rate, as they would tend to be over-weighted in the basket.

18.148 In response to TalkTalk (paragraph 18.138) we acknowledge that the “apples and pears” problem can apply to both current and prior year weights and so is not a distinguishing factor between them. We also acknowledge that the question on transparency depends on the information available to stakeholders under either methodology. These issues are therefore not distinguishing factors between prior and current year weights.

18.149 We have considered a number of options that could be used to amend the prior year weights approach in an attempt to address the issues identified, in particular:

- using current year weights;
- reducing the time lag for prior year weights by changing the definition of the prior year to the 12 months immediately before the start of the charge control (so 12 months before 1 April as the start date for the charge control will be 1 April 2013);
- reducing the time lag by changing the definition of the weighting period to be the last six months before the start of the charge control;
- changing the definition of prior year revenue to be calculated as ‘snapshot’ actual volumes at the most recent point in time multiplied by average price; and

¹³⁵¹ See BT non-confidential response to the LLCC Consultation, annex 1, page 51-52.

- calculating the revenue weighting by using forecast volumes from our model multiplied by average price.

18.150 We considered benefits and drawbacks of each of the above options. In our view it is important that BT should know what price changes it would need to make to comply with the control prior to the beginning of each charge control year. If BT were unaware of the weights of different products when it is setting prices, then it may need to revise prices during the year in order to comply with the control, causing disruption to customers.

18.151 This makes each of the first three options problematic, as BT would have to rely heavily on forecasts for some or all of the change in volumes. If the forecasts turn out to be incorrect, BT may need to change the prices during the year to compensate. This is a particular issue for Openreach as the Ethernet control includes the RPI-RPI sub-cap and Openreach would not be able to increase prices if they were cut too much in the beginning of the year. This creates a perverse incentive to skew price cuts to the latter part of the year and means that BT may not comply with the control. This will also result in less price certainty for other communication providers in the year.

18.152 As set out in this Statement, BT needs to give 28 days notice of a price cut but 90 days notice of a price increase. Given the differing controls on the baskets (in particular a positive X on TI and an RPI-RPI sub-cap on each charge for Ethernet services), this corresponds to a notice period of 28 days for Openreach and 90 days for BT Wholesale. Allowing two months for BT to calculate and approve the required price changes, Openreach would require the data to set the prices for the first year of the charge control by the first day of January 2013 and BT Wholesale by the first of November 2012 at the latest.

18.153 We have considered the merits of calculating prior year rental volumes based on the most recently available snapshot of that time. We consider that the use of a 'snapshot' has advantages for rental volumes. By using a snapshot of rental volumes at the most recently available date prior to setting prices, the time lag is reduced. This makes it more likely that the rental volumes are representative of current year volumes than if a longer lag is used. As BT would know the basket weights prior to setting prices, this avoids the uncertainty associated with current year weights.

18.154 In the light of the above concerns, we consider that the 'snapshot' option is the optimal solution for TI. This would mean that revenue weights would be calculated based on actual rentals at 30 September in the year before the start of the charge control year multiplied by the average price during that period (so 30 September 2012 for the control year starting 1 April 2013).¹³⁵² For non-rental products the relevant volumes would be the cumulative volumes for the year ended 30 September (so 30 September 2012 for the control year starting 1 April 2013).

18.155 This approach combines taking the latest available volumes and giving stakeholders certainty of prices during the control year. This approach uses more recent data than the prior year weights in LLCC 2009 when the relevant volumes would have been those from the previous year's RFS (i.e. the year ending March 2012). The approach takes the weights six months forward, reducing the lag.

¹³⁵² We are using 30 September volumes as the collection of volume data is a complex process and this is the time when BT already collects volume data for the purposes of producing financial statements.

18.156 For Ethernet, we forecast that reducing the time lag would help but not alleviate the issue with prior year weights, particularly for the first year of the control. This is because the legacy WES and BES products are overrepresented using lagged weights. This creates a disincentive for BT to make price cuts which encourage migration from declining legacy products to fast growing new products. This is an inherent feature of the way that the compliance formula is designed.

18.157 In order to facilitate migration and enable BT to achieve the desired differential between legacy and new service prices, we consider that the optimal approach to compliance for the Ethernet basket is as follows:

- i) For the first year of the control (i.e. starting 1 April 2013) the revenue weights will be calculated as forecast volumes per the LLCC model multiplied by average prices over the year to March 2014.
- ii) For subsequent years, the approach will be the same as for TI with snapshot volumes for rentals and cumulative volumes for non-rental products for the reasons described above. However, because the current charge control will only allow BT to cut Ethernet product prices, the applicable notification period is 28 days. Therefore compliance will be based on volumes at 31 December in the case of rentals or the 12 months up to 31 December in the case of non-rental products in the year prior to the start of the control (i.e. 31 December 2013 for the control year starting 1 April 2014).¹³⁵³

Discounts

The LLCC Consultation proposals

Volume discounts

18.158 As set out in the June BCMR Consultation, we were concerned that if BT were to offer volume discounts for its wholesale products, the main beneficiary of those discounts would be downstream providers with the highest market shares.¹³⁵⁴ In many markets this is likely to be BT itself, allowing it to undercut competitors in downstream markets.¹³⁵⁵

18.159 We did not propose to allow volume discounts to count towards meeting charge control caps. We considered that, if volume discounts were allowed to contribute towards compliance with the proposed charge controls, BT would have an undue incentive to apply volume discounts, which could be detrimental to sustainable competition.

Geographic discounts

18.160 In the June BCMR Consultation, we conducted a detailed geographic analysis of each of the retail and wholesale product markets. Our analytical framework for this analysis focused on the presence of common pricing constraints and geographic

¹³⁵³ We note this approach to the first year of the control results in the non-rental volumes for the second year of the control being calculated by reference to a period that pre-dates the period by which we calculate the volumes for the first year of the control. We have considered this matter but have concluded that any distortion that this may give rise to is not sufficient to offset the benefits of adopting this approach.

¹³⁵⁴ By volume discounts we referred to unit prices which vary with the number of circuits (of given bandwidth) purchased.

¹³⁵⁵ See paragraphs 10.88, 11.146 and 12.104 of the June BCMR Consultation.

variations in competitive conditions. On the basis of this analysis we noted that, for the geographic markets where we have proposed SMP, the underlying costs and competitive conditions would not be completely homogenous throughout the UK (even outside the WECLA).

18.161 This suggests that some freedom to charge in a way that reflects more accurately the costs incurred and to respond to the local characteristics of competition that exist in these markets would be efficient. Moreover, given the level of cost differences that may exist and the extent of competition in some areas, BT's ability to compete could be limited if it were required to maintain nationally uniform prices. Hence, geographically differentiated prices may reflect BT responding legitimately to cost differences in the face of competition.

18.162 However, we were concerned that if geographic discounts were allowed to count towards the charge control, then BT would face an incentive to comply with the charge control by concentrating discounts in areas where it faced more competition. Such an incentive could mean that prices may rise in less competitive areas. This could undermine the effectiveness of the price control in protecting customers.

18.163 Therefore we proposed to continue not to allow such discounts to contribute towards meeting charge control obligations. We considered that in this way, if BT wished to offer price reductions for a subset of customers on a geographic basis to reflect lower costs or to respond to emerging competition then it would be free to do so. However, any such discounts would need to be self-financing, for example, by the increase in customer volumes such discounts may generate.

Term discounts

18.164 Term discounts mean that customers who sign up for longer contracts face lower annual rental charges than customers who have a shorter contract term. For example, we noted that BT offered lower annual rental charges for EAD 1Gbit/s circuits to customers who committed to a five-year term.

18.165 We noted that firms offer discounts for long-term contracts for a number of reasons. Longer-term contracts may be most suitable for some customers' needs and can have some efficiency benefits, such as savings in transaction costs. Longer term contracts also offer a company greater security of revenues. In its response to the CFI, BT indicated that discounts provide:

*"customers with greater choice of pricing and contract flexibility and better reflecting the market norm".*¹³⁵⁶

18.166 We also noted that we should not automatically view term discounts as harmful. However, longer-term contracts may raise barriers to entry or expansion by increasing switching costs, thus tending to entrench SMP. This concern would be higher the greater the length of the contract. This may create a disincentive for CPs to switch away from BT, for example, by expanding their own network or switching to an alternative infrastructure provider during the minimum contract term.

18.167 If term discounts were allowed to count towards the charge control caps, we were concerned that BT may seek to make price reductions conditional upon customers taking up longer-term contracts. If term discounts gave rise to efficiency savings, then

¹³⁵⁶ Page 10, BT response to the BCMR CFI: <http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-inputs/responses/BT.pdf>

we considered that they should be self-financing. Therefore, we proposed to allow BT to offer term discounts, but not to count term discounts in assessing compliance under charge control caps.

- 18.168 We considered that this approach gave BT some flexibility in pricing, but also ensured that CPs who were unwilling to commit to a longer contractual term were adequately protected. We noted that during the LLCC 2009 period, BT offered some such discounts despite them not counting towards charge control compliance. We considered that this was consistent with the proposed approach striking an appropriate balance between giving BT pricing flexibility and customer protection.

Treatment of discounts in starting prices

- 18.169 In the discussion above we concluded that discounts should not count towards compliance with the charge control cap. However, as BT had been offering geographic and term discounts during the current charge control period, we needed to consider whether to take such pre-existing discounts into account in the starting revenues.
- 18.170 Under the charge control, we set a value of X so as to bring revenues into line with costs (including a return on capital) by the final year of the charge control. We considered that if we were to ignore discounts prevailing in the starting revenues, then the charge control may require BT to reduce its prices to below its cost of capital. This would be inconsistent with our principle of cost recovery.
- 18.171 We considered that we may need to take into account discounts in the starting prices when calculating the value of X. We considered that a potential solution would be to calculate the value of X using BT's actual revenues in the base year. This had the merit that, assuming no change in discount policy, BT would recover its cost of capital. We noted that this approach would reduce the value of X.
- 18.172 We identified that a potential drawback with the proposed approach would be that if BT were to reverse or remove its existing discounts, then it may be able to reduce prices by less than required under the charge control. BT could then earn more than its cost of capital by the end of the charge control period. This risk could arise if reducing the level of the discount would have little impact on volumes. We assessed this risk for both geographic and volume discounts and considered that the risk was limited.
- 18.173 We therefore proposed to take into account geographic and term discounts in the base year when calculating the value of X, but such discounts would not count towards charge control compliance.¹³⁵⁷

Consultation responses

- 18.174 Level 3 commented that it was "cautious about supporting Ofcom's proposal to allow BT pricing freedom on a geographic basis". In light of the need for pricing certainty for CPs, it suggested that Ofcom should require BT to enter a reasonable period of industry collaboration, and provide a minimum of 90 working days following the announcement of each and every change.¹³⁵⁸

¹³⁵⁷ We noted that the onus remains on BT to show that its discount schemes are not unduly discriminatory.

¹³⁵⁸ See Level 3 non-confidential response to the LLCC Consultation, page 20.

Certain discounts will not contribute towards BT meeting its charge control obligations

18.175 We received six responses from stakeholders who responded on the treatment of discounts in the compliance of the charge control. CWW and Level 3 supported our proposal not to allow volume, term or geographic discounts to count towards meeting the charge control. Additionally, Colt, Sky and TalkTalk commented specifically on geographic discounts and supported our proposal not to count these when assessing charge control compliance.

18.176 BT disagreed with our proposal to not allow discounts to count towards meeting the charge control. We discuss below BT's comments on each type of discount and why it believes each should count toward compliance.

18.177 In addition, BT argued that special offers and migration offers should count towards meeting the annual revenue reductions.¹³⁵⁹ BT claimed that:

- Migration offers on connection and rental prices for AI services will be likely to encourage customers to move from legacy to new products. While Ofcom has recognised the connection aspect in the calculation of the migration credit, the necessary EAD/EBD rental discounts have not been taken into account.
- With the proposed RPI-RPI sub cap, BT will be unable to increase prices. BT argues that it is more likely to use offers going forward to test potential price reductions before making them permanent. If such an offer led to a permanent price reduction, it would be appropriate for the revenue reduction attributable to the offer to count towards basket compliance.

Volume discounts

18.178 We received no specific stakeholder response to volume discounts.

Geographic discounts

18.179 BT disagreed with our proposal not to recognise geographic discounts for charge control compliance. BT claimed that by not recognising such discounts, it is less incentivised to offer them. BT suggested that an alternative approach would be to allow 50% of any new geographic discounts to count towards the charge control. In this way, BT argued, customers would be partially protected from the rebalancing of prices on a geographic basis, and at the same time BT would still have incentives to reflect underlying costs in its prices.¹³⁶⁰

Term discounts

18.180 In addition, BT argued that term discounts should count towards basket compliance.¹³⁶¹ BT explained that, during the last charge control period, BT offered additional AI term discounts in response to customer demand. It argued that given that this pricing approach is expected by the market, not to count these prices towards basket compliance would overly penalise BT in trying to meet genuine

¹³⁵⁹ See BT non-confidential response to the LLCC Consultation, paragraphs 9-11, page 13

¹³⁶⁰ See BT non-confidential response to the LLCC Consultation, paragraph 8, page 6 and paragraphs 5 to 8, pages 12-13.

¹³⁶¹ See BT non-confidential response to the LLCC Consultation, paragraphs 12-15, pages 13-14

customer requirements. The effect would, in BT's view, be to 'funnel' all reductions into a standard product, when this is not what customers want BT to provide.

18.181 BT argued that these products do not tie customers in for longer than they intend, as they are primarily taken only when the customer has long term certainty of bandwidth requirements (for example for the purpose of building backhaul). In BT's view, this is demonstrated by the fact that for some products only the five year term is taken by customers, with no demand for the one year term option. The current position for demonstrating compliance is that where there is a long term product, all volumes should be allocated to the one year term so that revenues are presented as gross revenues (without the "discount" for the five year term). Therefore a price reduction could be made to the one year term, and BT would comply with the control. BT argued that if all customers were to take the five year term, reducing the price of the one year option would not flow through as a benefit to any customers. In this situation, the exclusion of products with a long minimum term seemed to BT to be a "technicality" that does not benefit the market.

Treatment of discounts in starting prices

18.182 UKCTA¹³⁶², CWW¹³⁶³, TalkTalk¹³⁶⁴, Sky¹³⁶⁵, Colt¹³⁶⁶ and EE and MBNL¹³⁶⁷ each raised objections to our proposal to take into account existing geographic discounts in the base year revenues for the purpose of calculating X. Conversely, BT agreed with our proposal to take into account existing geographic discounts in the base year revenues.¹³⁶⁸

18.183 UKCTA and Colt argued that Ofcom had not addressed whether the existing geographic discounts are justified by cost savings that may be achieved by BT. It argued that Ofcom's approach risks unduly encouraging BT to target discounts to geographic areas where competition is stronger even if there is no overall cost-justification.

18.184 CWW, Sky and TalkTalk argued that including geographic discounts in the calculation of base year revenues gives BT the opportunity to 'game' the charge control by reducing/removing discounts after the control is set, allowing it to earn excessive profits over the charge control period. However, CWW also noted that its concern of the potential risks for future controls is dependent on the level of materiality on the reduction in the value of X.¹³⁶⁹ Sky considered it, "unreasonable to assume that the current suite of geographic discounts will remain in place unaltered through to 2015/16" and therefore should not be included in the assessment of starting charges.¹³⁷⁰

¹³⁶² See UKCTA response to the LLCC Consultation, pages 18-20.

¹³⁶³ See CWW response to the LLCC Consultation, page 67.

¹³⁶⁴ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.64 to 5.70, pages 48-49.

¹³⁶⁵ See Sky non-confidential response to the LLCC Consultation, paragraphs 52 to 58, pages 12-13.

¹³⁶⁶ See COLT non-confidential response to the LLCC Consultation, section 3.2, pages 8-9.

¹³⁶⁷ See EE and MBNL non-confidential response to the LLCC Consultation, page 26.

¹³⁶⁸ See BT non-confidential response to the LLCC Consultation, paragraph 1, page 12.

¹³⁶⁹ CWW note that if the impact is materially below a 1% impact on X (i.e. 0.5% or below), they consider our approach reasonably.

¹³⁷⁰ Sky non-confidential response to the LLCC Consultation, paragraph 57, page 13.

- 18.185 UKCTA claimed that our concern in the LLCC Consultation that BT may earn less than its rate of return is overstated as, “[D]epending on the initial level of prices relative to costs, the glide path approach adopted by Ofcom may provide a significant degree of headroom to BT’s returns across the charge control period”.
- 18.186 UKCTA, Sky and TalkTalk argued that BT may have a distorted incentive to introduce further discounts in this charge control period in the expectation that they would be taken into account by Ofcom at the start of the next charge control period. BT would then, in effect, be able to recover some of the costs associated with targeted geographic discounts during future charge controls.
- 18.187 EE and MBNL was dissatisfied with the analysis underlying Ofcom’s proposed treatment of discounts in relation to the calculation of starting prices. EE and MBNL claimed that although our proposal was predicated on the assumptions that prices should reach the cost orientated level at the end of the charge control period (rather than on average over the period), and that a glide path necessarily must consist of equal cuts to that end point, neither of these assumptions were justified in the Consultation. EE and MBNL argued that there appears to be no *a priori* reason why the treatment of such discounts in setting the starting charges should not lead to a kinked and slightly more aggressive glide path.

Our response and conclusions

Volume discounts

- 18.188 Having considered the points raised, we have concluded that it would not be appropriate to allow volume discounts to count towards meeting charge control caps. If volume discounts were allowed to contribute towards compliance with the proposed charge controls, BT would have an undue incentive to apply volume discounts, which could be detrimental to sustainable competition.

Geographic discounts

- 18.189 Having considered the points raised, we have concluded that it would not be appropriate to allow geographic discounts to count towards meeting charge control caps. As set out above, we were and remain concerned that, if geographic discounts were allowed to count towards the charge control, then BT would face an incentive to comply with the charge control by concentrating discounts in areas where it faced more competition. Such an incentive could mean that prices may rise in less competitive areas. This could undermine the effectiveness of the price control in protecting customers.
- 18.190 We consider that the incentive to comply with the charge control by concentrating discounts in less competitive areas is present at any level of discount allowed to count towards the control. This includes allowing 50% of discounts to count towards the charge control, as proposed by BT.
- 18.191 We expect this incentive to increase in the proportion of the discount allowed to count towards the control. Therefore, we have decided not to allow any geographic discounts to count towards compliance with the control.

Term discounts

- 18.192 Having considered the points raised, we concluded that, if term discounts were allowed to count towards the charge control caps, BT may seek to make price

reductions conditional upon customers taking up longer-term contracts. We note that BT offers only very limited term discounts, suggesting that long-term contracts are not demanded by the market. We note BT's claim that there are some products for which only the five year term product is purchased. We have examined this claim and find that such discounts amounted to a very small percentage of Ethernet revenues in 2011/12. Therefore, we have decided to continue not to allow BT to offer term discounts, but not to count term discounts in assessing compliance under charge control caps.¹³⁷¹

Migration offers and time limited discounts

18.193 We consider that migration offers are price cuts targeted at a group of customers (only those using legacy Ethernet services) and agree with BT that such offers are likely to encourage those customers to move new Ethernet services.

18.194 In terms of time-limited discounts, we take the view that that they are simply temporary price cuts that benefit customers. We agree with BT that such offers can be used to test the impact of potential permanent price reductions.

18.195 We have assessed the practicability of taking into account both migration offers and time-limited discounts. In relation to migration offers, we note that any offer targeted specifically at customers moving from legacy services, is difficult to incorporate into our compliance formula. This is because historical or forecast volumes for such an offer are not available. If we were to use the actual volumes taking an offer, then as the success of the offer is known ex-post, this raises the issue of uncertainty that we identified with current year weights, and may mean that it is difficult for BT to know in advance which reductions would be needed to comply with the control. It may also mean that extensive use of carry forward provisions may occur in the event of under/over compliance.

18.196 These practical difficulties do not arise with time limited special offers. Time-limited discounts can be incorporated into the compliance formula, using the annual volumes, adjusted for the number of days the offer is available for.

18.197 Having considered all the above factors, we have concluded that migration offers will not count towards compliance with the charge control. However, we consider that the impact of this is mitigated by allowing time-limited special offers to count towards compliance. This will allow BT some flexibility to make time-limited offers to encourage migration from legacy services.

Treatment of discounts in starting prices

18.198 We have updated our base year to 2011/12. In that base year, BT no longer offered any geographically limited discounts. There is therefore no longer a need for us to decide in this control on how to treat such discounts in starting prices.

In relation to term discounts, such discounts are offered only to a very limited extent in the Ethernet market. Such discounts amounted to a very small percentage of Ethernet revenues in 2011/12. As this is an immaterial amount, the treatment of discounts in starting prices would not impact the value of this charge control, nor would it impact on BT's ability to recover its costs. We have therefore decided not to include discounts in starting prices in this charge control.

¹³⁷¹ We noted that the onus remains on BT to show that its discount schemes are not unduly discriminatory.

Section 19

Controls on TI services

Introduction

19.1 In this Section, we set out our conclusions on the charge controls for the basket of TI services, comprising primarily TI terminating segments and 'regional' trunk services. In particular, we discuss:

- the scope and design of the charge control basket;
- our decision to impose sub-basket constraints and not to impose an additional cost orientation obligation;
- the adoption of the 'anchor pricing' approach for modelling the charge control on TI services;
- the cost adjustments to BT's base year costs, including the impact of any updates since the LLCC Consultation document;
- our approach to forecasting costs over the period of the charge control; and
- the value of X for the charge control basket.

19.2 We discuss our decisions to include a fair and reasonable pricing obligation, but not to impose an additional cost orientation obligation in relation to TI and other services in Section 9.

19.3 This Section follows the proposed framework for charge control design set out in Section 18, similarly with our proposals for the charge control for Ethernet services in Section 20.

Summary of key decisions

We will impose a single TI basket charge controlled at RPI+2.50%

19.4 We will charge control TI services within a single basket (TI basket), capped at RPI+2.50%. We will also implement a number of sub-cap and sub-basket controls where we consider that the overall basket cap would not offer sufficient protection to customers.¹³⁷²

19.5 Figure 19.1 below summarises the structure of the TI basket with further details about the specific services falling within the basket, together with the sub-caps and sub-baskets.

¹³⁷² Sub-baskets impose a constraint on the weighted average charge for a group of services and sub-caps impose a constraint on each charge.

Figure 19.1 The TI basket controls¹³⁷³

Services within scope	Basket cap	Sub-cap and sub-basket constraints
<u>Connection and rental charges for:</u> Wholesale low bandwidth TISBO (up to and including 8Mbit/s) Wholesale medium bandwidth TISBO (above 8Mbit/s up to and including 34/45Mbit/s) outside the WECLA Wholesale high bandwidth TISBO (above 34/45Mbit/s up to and including 140/155Mbit/s) outside the WECLA Regional trunk (all bandwidths) RBS, Netstream 16 Longline and SiteConnect Interconnection services TI equipment and infrastructure TI ancillary services (excluding Excess Construction Charges)	RPI+2.50%	Point of handover services (sub-basket set at RPI-0%) RBS, Netstream 16 Longline and SiteConnect (sub-basket set at RPI+2.50%) Ancillary services, equipment and infrastructure (sub-cap set at RPI+2.50% on each charge) Sub-cap on all charges (RPI+10% on each charge)

We have adopted the anchor pricing approach to modelling TI services

- 19.6 Our analysis suggests that there is no MEA with reliable cost data for TI services. In other words, we have not identified any alternative technologies that are more efficient than those currently in use, which are also capable of delivering the same service, to the same level of quality and to the same group of customers as TI services, for which reliable cost data is available.
- 19.7 We have adopted the anchor pricing approach. Anchor pricing ensures that, during technological change, prices should not rise above the level implied by the hypothetical continuation of the existing technology. We have implemented anchor pricing by modelling the costs and asset values based on the existing technology. We believe that this approach maintains appropriate signals for investment and migration.

We have made adjustments to BT's base year costs

- 19.8 We have made adjustments to the cost data provided by BT to ensure that these are representative of the relevant level of costs for the purposes of a forward-looking charge control, whilst remaining consistent with the principle of cost recovery. Those adjustments are:
- adjustments to reflect the composition of the basket for which we are explicitly forecasting costs (i.e. excluding those services that do not form part of the basket and including those that have been separately reported but that we have included in the same basket). This also includes amendments to base year data in BT's reported figures to provide a relevant and reliable accounting view of costs and revenues; and
 - adjustments to provide a suitable basis for forecasting costs for the purposes of setting the charge control. This includes removing one-off or irregular levels of

¹³⁷³ These exclude the Hull area.

costs and revenues, as well as adjustments to reflect how we expect BT to recover certain costs in the future.

We forecast costs associated with the main TI services

- 19.9 For the purposes of setting the value of X for the TI basket, we have forecast the costs associated with PPCs, RBS, Netstream 16 Longline and SiteConnect. For PPC rentals, our costs and revenues include both standard maintenance as well as enhanced maintenance, as set out in BT Wholesale's carrier price list.¹³⁷⁴ These services made up over 90% of the total TI market as reported in BT's RFS in 2011/12.
- 19.10 Our cost forecasts are based on how different types of costs might vary with respect to the underlying volume changes, subject to assumptions such as efficiency, asset price changes and the WACC.
- 19.11 We have determined what the revenues would be at the end of the charge control by multiplying service volumes by their respective prices. In effect, this is what the revenues would be in the absence of any price changes from current levels. We have then calculated the value of X so as to bring our forecast prices into line with forecast costs in the final year of the charge control.

We have made a reallocation of certain costs from the TI basket to the Ethernet basket

- 19.12 Within our charge control modelling, we have reallocated £46m of costs from the TI basket to the Ethernet basket. This is because we consider that TI services would attract a declining allocation of common costs as TI service volumes decline and Ethernet volumes rise. As explained in Annex 12, this change in allocation would not otherwise be captured by an approach to modelling the costs of separate baskets and so we need to make a specific adjustment.

Basket design

A single basket for TI services

The LLCC Consultation proposals

- 19.13 In the LLCC Consultation we proposed a single basket, the TI basket, which comprised the following groups of services :
- wholesale low bandwidth TISBO (up to and including 8Mbit/s) – connection and rental (standard maintenance and enhanced maintenance);
 - wholesale medium bandwidth TISBO (above 8Mbit/s up to and including 34/45 Mbit/s) outside the WECLA – connection and rental (standard maintenance and enhanced maintenance);
 - wholesale high bandwidth TISBO (above 34/45Mbit/s up to and including 140/155 Mbit/s) outside the WECLA – connection and rental (standard maintenance and enhanced maintenance);

¹³⁷⁴ PPC charges are available at:

https://www.btwholesale.com/pages/downloads/service_and_support/pricing_information/carrier_price_list/browsable_carrier_price_list/section_b3/B8.03.rtf

- regional trunk (all bandwidths) – rental (standard maintenance and enhanced maintenance);
- RBS backhaul, Netstream 16 Longline and SiteConnect;
- interconnection services;
- TI Equipment and Infrastructure; and
- TI ancillary services excluding ECCs.

19.14 In addition, we proposed a number of sub-baskets and sub-caps:

- a sub-basket on RBS backhaul, Netstream 16 Longline and SiteConnect;
- a sub-basket on interconnection services (i.e. Points of Handover);
- a sub-cap on ancillary services, equipment and infrastructure; and
- a sub-cap on all other charges (i.e. those services not included in the other sub-baskets and sub-caps specified above).

19.15 We explained in the LLCC Consultation that we based these proposals on the following two considerations:

- **efficient pricing** – where the services being considered share substantial common costs, a single basket can be more conducive to efficient pricing and cost recovery; and
- **competition** – where the services being considered face different competitive conditions or BT does not use the same wholesale inputs as its rivals, placing them in the same charge control basket may give BT an incentive to set prices in a way that undermines competition.

19.16 In Section 4 of the LLCC Consultation, we also discussed the importance of efficient migration when designing charge control baskets and how including services within the same basket could allow for appropriate incentives to migrate from one service to another. As explained in the June BCMR Consultation¹³⁷⁵, we did not anticipate significant migration between different TI services. However, over the course of the charge control period, we expected that many customers of TI services would migrate to Ethernet services. We noted that the values of X for the TI and Ethernet baskets, respectively, would be consistent with such migration.

19.17 We considered that placing the services mentioned above together in the TI basket would be conducive to efficient pricing and cost recovery and that our proposed sub-baskets and sub-caps would be appropriate to deal with the risks associated with there being different competitive conditions among certain services.

19.18 We present below the analysis we conducted for the LLCC Consultation.

¹³⁷⁵ See paragraphs 3.31 to 3.74 of the June BCMR Consultation.

Bandwidth breaks

- 19.19 We had proposed, in the June BCMR Consultation, to identify separate markets at different bandwidths for TISBO services. However, having a particular market definition does not necessarily mean that charge control baskets must be defined along the same lines. We may set SMP conditions where it appears to us, based on our market analysis, that there is a relevant risk arising from price distortion, and where doing so is appropriate to promote efficiency and sustainable competition, and to confer benefits on end users. Where it appears to us, from our market analysis, that the competitive conditions in different markets are sufficiently similar such that we can identify a risk of adverse effects arising from a price distortion that is common to those markets, we may consider it appropriate to combine products in different markets. In this case, we considered that the risks are sufficiently similar that designing a common basket cap would be appropriate.
- 19.20 Our analysis, set out in the June BCMR Consultation, suggested that, whilst the competitive conditions are not completely homogeneous across the defined bandwidth breaks, BT has SMP in each relevant market for TISBO services outside the Hull and the WECLA areas.¹³⁷⁶ In particular, we summarised in Figure 19.2 below the assessment of BT's market share and other indicators discussed in the June BCMR Consultation.

Figure 19.2 BT market share in TI services, as at the June BCMR Consultation¹³⁷⁷

Product market	Geographic scope	BT market share	Other indicators of market power
Low bandwidth TISBO (up to and including 8Mbit/s)	UK excluding Hull	86%	<ul style="list-style-type: none"> • BT's control of infrastructure not easily duplicated • Existence of barriers to entry and expansion • BT's economies of scale and scope • Lack of countervailing buyer power • Lack of prospects of competition
Medium bandwidth TISBO (above 8Mbit/s up to 45Mbit/s)	UK excluding Hull & WECLA	74%	
High bandwidth TISBO (above 45Mbit/s up to and including 155Mbit/s)	UK excluding Hull & WECLA	49%	

- 19.21 As can be seen from that analysis, BT's market share appeared to be persistently high in each of these wholesale markets and the competitive conditions were such that we did not believe that there was the prospect for them to become competitive over the forward-looking period covered by our review. Whilst BT's market share for high bandwidth TI wholesale terminating segments was not as high as it was for the lower bandwidth markets, all three markets were declining and there were high barriers to entry or expansion for competitors¹³⁷⁸. The parallels in terms of declining markets and the high barriers to entry supported our view that similar risks of adverse effects arising from price distortions arise in each market, and our proposal that it would be appropriate to design a combined basket that included services at different bandwidths.
- 19.22 We wanted to ensure, however, that a combined basket was appropriate in light of BT's own consumption of services. Competitive concerns could, in particular, be raised if the wholesale services purchased by BT differed from other CPs. In such a circumstance, BT may face an incentive to concentrate price reductions on those

¹³⁷⁶ See paragraphs 7.62 to 7.179 of the June BCMR Consultation.

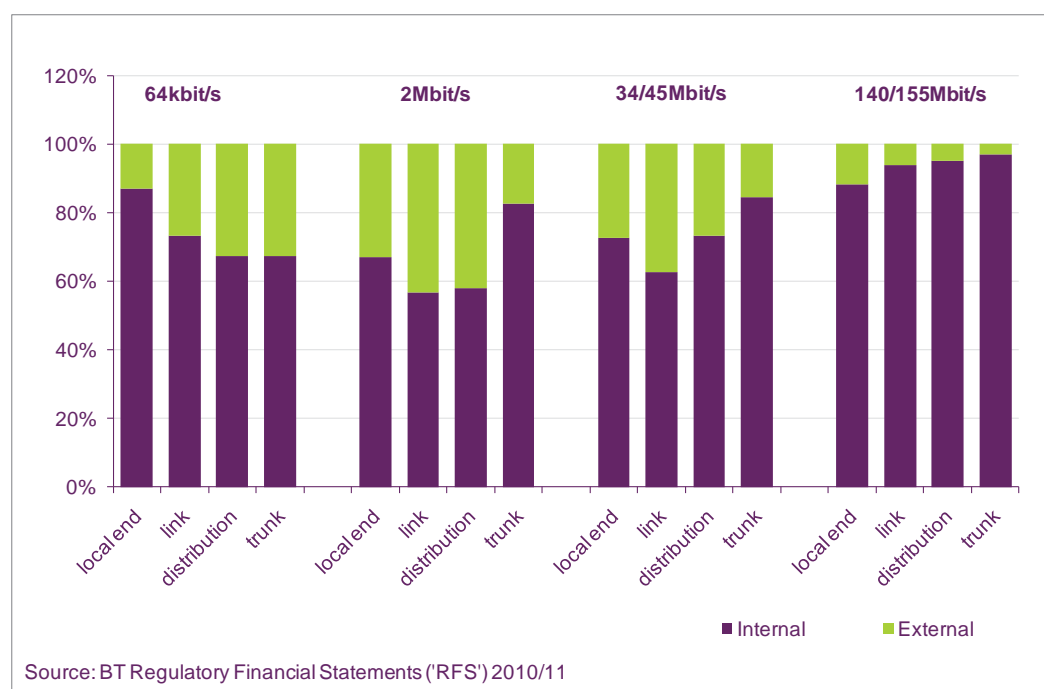
¹³⁷⁷ See Tables 48, 51 and 56 in Section 7 of the June BCMR Consultation.

¹³⁷⁸ Also, high bandwidth TI services make up a small proportion of TI services in the basket, so lower prices on high bandwidth services would not materially alter the constraint on the other services.

inputs it purchases itself, while increasing prices for inputs which are purchased disproportionately by external customers.

19.23 In order to verify that a combined basket was appropriate, we examined the extent of any difference between the PPCs purchased internally by BT and those sold to external customers. Figure 19.3 below shows the extent to which BT and its external customers used PPCs as wholesale inputs in 2010/11. All bandwidths were used both internally and by external customers and the majority of volumes were internal at each bandwidth. Across the bandwidths up to 34/45Mbit/s, the proportion consumed internally was largely consistent, between 60% and 85%. The 140/155Mbit/s circuits were largely purchased internally, but this accounted for less than 0.5% of the total. Any rebalancing in favour of 140/155Mbit/s circuits would not materially affect the price level of the rest of the TI basket. In addition, as the potential for new 140/155Mbit/s circuits is limited, we did not consider that there would be a material impact on competition. We therefore did not believe that the differences we identified in internal and external consumption of TI services at different bandwidths raised any competitive concerns concerning the use of a combined basket.

Figure 19.3 BT's PPC volumes in 2010/11



19.24 Having assessed the factors described above we did not consider that there was a high degree of competitive concern about placing TI wholesale markets at different bandwidths in a single charge control basket. In addition, the June BCMR Consultation identified a risk of BT engaging in excessive pricing in each of the TI markets referred to in Figure 19.2 above.¹³⁷⁹ Consequently, it was considered that a relatively broad basket could be beneficial by allowing BT to recover costs in an efficient way, as explained further below.

19.25 TI services across different bandwidths share substantial common costs. By placing the services in a single charge control basket, we considered that BT would have the incentive to set prices and recover common costs efficiently. In contrast, if we were

¹³⁷⁹ See paragraph 10.104 of the June BCMR Consultation.

instead to create separate baskets for each bandwidth, we would have to decide on the appropriate allocation of common costs to be recovered within each basket. Given the complexity of these allocations and the need for BT to have a certain degree of flexibility to allow it to respond to changes in demand, we considered that it would be more appropriate that for BT to have some limited flexibility in these costs should be recovered. BT is likely to be better placed than us to determine how to recover its common costs.

- 19.26 We also noted that our proposed sub-caps would limit the extent to which BT could rebalance its charges in favour of certain services over others.

PPC trunk and terminating segments

- 19.27 In the LLCC Consultation, we explained that our provisional view was that the competitive conditions in the relevant trunk and terminating segments markets were similar and we did not consider that they posed an impediment to placing trunk and terminating segments together in the TI basket.¹³⁸⁰ For instance, the analysis in the June BCMR Consultation suggested that BT's market share in regional TI trunk was 89% and that this market was characterised by similar competition concerns as the terminating segments, such as BT's economies of scale and scope and the existence of barriers to entry and expansion.¹³⁸¹
- 19.28 In the June BCMR Consultation, we proposed to deregulate national trunk routes, which we found to be effectively competitive.¹³⁸² The shorter distance routes, in relation to which we proposed in the June BCMR Consultation that BT still had SMP, faced similar competitive conditions to terminating segments. This meant that the main concerns about placing trunk and terminating segments in a single basket were now less apparent than they were for the LLCC 2009. Therefore, we proposed not to impose a separate sub-cap on terminating segments.
- 19.29 We considered that a combined basket would be more conducive to efficient recovery of common costs, as it would allow BT to choose prices to better reflect demand elasticities; it would also enable BT to respond to changes in demand and recover common costs efficiently. As we believed that competitive conditions were similar, we proposed to keep regional trunk segments and terminating segments in the overall TI basket.

Consultation responses

- 19.30 Several stakeholders commented on the structure of the proposed basket design for TI services.
- 19.31 BT agreed with the use of broad baskets and, where appropriate, the use of sub-caps.¹³⁸³
- 19.32 CWW claimed that our proposed basket design was too wide given that the baskets were broader than those used in the 2009 control, when cost orientation was also imposed.¹³⁸⁴

¹³⁸⁰ The relevant trunk market is the proposed wholesale market for regional trunk segments in the UK.

¹³⁸¹ See Table 81 at page 397 of the June BCMR Consultation.

¹³⁸² See paragraphs 7.434 to 7.486 of the June BCMR Consultation.

¹³⁸³ See BT non-confidential response to the LLCC Consultation, page 12.

- 19.33 Level 3 said that in the absence of cost orientation and accounting obligations the structure of the sub baskets should be more granular in order to deliver appropriate safeguards to CPs.¹³⁸⁵
- 19.34 Telefónica UK was, in general, supportive of our charge control proposals, in particular in relation to RBS backhaul.¹³⁸⁶
- 19.35 Stakeholder responses specifically relating to our proposal to remove cost orientation are summarised and considered in Section 9.

Bandwidth breaks across PPCs

- 19.36 The AlixPartners report commissioned by UKCTA argued that the use of broad baskets increases two types of risk to competition that the proposed basket did not, in its view, address:
- the incentive to target price increases on those services where rivals are less likely to enter; and
 - the incentive to target price reductions on services used disproportionately by rivals, whether in relation to bandwidth breaks or the connection/rental structure of charges.
- 19.37 UKCTA expressed the view that Ofcom should carry out a more detailed cost-benefit analysis in order to examine the risks that price rebalancing could impose in terms of each of the two competitive concerns identified above.¹³⁸⁷ It did not agree that the relative degree to which services within the baskets are used by BT and its rivals are broadly comparable. It argued that, within the TI basket, the proportion of external sales varies significantly as between the components of each bandwidth, and specifically that the proportion of external sales is currently much higher for low as opposed to high-bandwidth inputs.¹³⁸⁸
- 19.38 UKCTA suggested the following options to tackle these concerns:
- narrowing the basket by separating any services which have a greater potential for horizontal competition or are used disproportionately by external operators from the main basket and including these in a separate basket. UKCTA recognised that this would require Ofcom to take a view on the appropriate proportion of common costs to be allocated to each basket, however, it argued that this would reduce uncertainty over prices over the charge control;
 - increasing the number of services to which sub-caps apply such as services for which BT would otherwise face a strategic incentive to increase prices (i.e. those which are not subject to horizontal competitive pressures and those which are used disproportionately by external operators). This would ensure that the design of the sub-baskets and caps is more clearly linked to potential competition

¹³⁸⁴ See CWW response to the LLCC Consultation, paragraph 15.13, page 68.

¹³⁸⁵ See Level 3 non-confidential response to the LLCC Consultation, page 20.

¹³⁸⁶ See Telefónica UK response to the LLCC Consultation, page 32, 33.

¹³⁸⁷ See The AlixPartners report, UKCTA response to the LLCC Consultation, page 27.

¹³⁸⁸ See The AlixPartners report, UKCTA response to the LLCC Consultation, page 22-27.

distortions while limiting the regulatory burden on Ofcom to derive specific cost allocation proposals for common costs;

- tightening of sub-basket price limits that would constrain the pricing to those services for which a sub-basket or sub-cap applies. This approach could be implemented alongside the increase of services to which sub-caps apply. UKCTA admitted that the precise limits are subject to some regulatory discretion but it thought that Ofcom should be more rigorous in estimating the degree to which price changes adopted by BT can disadvantage rival CPs and apply tighter sub-caps where the risks to competitive distortions are greatest; or/and
- retaining cost-orientation obligations for all services within the charge control as this would reduce the risk of price rebalancing to the detriment of competition.¹³⁸⁹

PPC trunk and terminating segments

- 19.39 In the context of cost orientation, CWW commented that a greater proportion of trunk segments were purchased internally than for terminating segments and local ends, but did not state whether it considered that this was sufficient to justify a separate sub-basket.¹³⁹⁰
- 19.40 The AlixPartners report for UKCTA raised a concern that while inclusion of both regional trunk and adjacent TISBO services within a broad basket could potentially prevent excessive pricing at the aggregate basket level, it could still allow BT to raise prices for regional trunk while reducing prices for potentially more competitive TISBO services.¹³⁹¹

Our response and conclusions

- 19.41 We have considered carefully the arguments raised about the TI basket design in the response to the LLCC Consultation. Below, we respond to each of the main issues raised by stakeholders in turn.
- 19.42 For the present charge control, we consider it appropriate to have a wide basket for TI services, with sub-constraints imposed where appropriate to address the risk of BT pricing these services excessively. We consider that the risk of excessive pricing can be effectively addressed by the sub-baskets and sub-caps. In our view, having an additional cost orientation obligation would be unnecessary and disproportionate.¹³⁹²
- 19.43 As set out in Section 18, we acknowledge that there are both advantages and disadvantages to broad baskets. Given that many of the TI services share substantial common costs, a single basket can be favourable to efficient pricing. This allows BT to determine the optimal way to recover fixed and common costs, taking into account the different demand conditions (e.g. demand elasticities), different trends in costs and where relevant, appropriate migration incentives.
- 19.44 Nonetheless, we are aware that, if different services are subject to different competitive conditions, then a single basket may allow BT to comply with the control by charging higher prices on less competitive services, and lower prices where it

¹³⁸⁹ See The AlixPartners report, UKCTA response to the LLCC Consultation, page 28-29.

¹³⁹⁰ See CWW response to the LLCC Consultation, paragraph 4.15, page 68-69

¹³⁹¹ See The AlixPartners report, UKCTA response to the LLCC Consultation, page 25.

¹³⁹² See our response in Section 9.

faces more competition. Alternatively, if some products are mainly purchased by external CPs, BT may concentrate price falls on products which it purchases, while increasing prices on those purchased by its rivals, thereby placing other CPs at a competitive disadvantage. In our LLCC Consultation, we assessed these potential risks and have sought to mitigate them through targeted sub-caps and sub-baskets.

- 19.45 We note that some stakeholders disputed the potential benefits of pricing flexibility. For example, they disputed whether the costs were truly common or whether BT had sufficient information on pricing elasticities to set efficient prices, or even whether information on pricing elasticities was relevant for wholesale prices. We have evaluated these concerns.
- 19.46 First, we note that it may be true that not all costs are common to all services. However, even if some costs are not common, sufficient cost categories such as land and buildings, and operational costs e.g. management, power, transport, are shared between all TI products. We therefore consider that there is benefit in allowing BT some pricing flexibility to recover common costs.
- 19.47 Second, wholesale demand is derived from retail demand. If the retail price elasticity is high, this will also tend, all other things being equal, to a higher wholesale elasticity. We accept that BT may not be able accurately to estimate the pricing elasticity of each product. However, we consider it likely that it would be able to estimate which tariff structures expand its output by more than others as a result of experience. We also consider that Ofcom is unlikely to be able to make a better estimate of the appropriate pricing structure.
- 19.48 We note that UKCTA suggested that we should undertake a cost-benefit analysis of which products have greater potential for competition and which products are used disproportionately by external operators. We undertook such an analysis for the LLCC Consultation. Our analysis did not identify significant competitive concerns about placing TI wholesale markets at different bandwidths in a single charge control basket. We also considered that there were no significant competition concerns from placing terminating and trunk segments in a single basket. However, we identified two groups of products (RBS Backhaul and interconnection products) where BT could have a strategic incentive to increase prices and imposed controls to deal with these incentives.
- 19.49 We have reassessed our analysis since the LLCC Consultation, and updated it using 2011/12 data. The relative proportions of products purchased internally have not changed materially between 2010/11 and 2011/12. In particular, as with Figure 19.3, the majority of each type of PPC rental circuit continues to be purchased internally. This means that BT cannot single out certain PPC circuits to disadvantage CPs.
- 19.50 We acknowledge that there are some differences in the proportion of internal sales across different bandwidths. For example, a higher proportion of high bandwidth circuits are purchased internally than at lower bandwidth circuits. For example, 59% of 2Mbit/s local ends were purchased internally in 2011/12 compared to 69% of 34/45Mbit/s local ends and 93% of 140/155Mbit/s local ends.¹³⁹³ As we note below, the weight of 140/155Mbit/s circuits in the basket is very low. This means that even if BT were to target price reductions on these circuits, this would not materially relax the price constraint on other products. As regards the difference between 2Mbit/s and 34/45Mbit/s circuits, we consider that this is not sufficient to allow BT to materially target external CPs through varying the prices.

¹³⁹³ Ofcom analysis of data submitted on 4 October 2012 in response to S135 Notice.

19.51 We have revised our estimate of BT's market share as shown in the figure below.

Figure 19.4 BT's Market Share in the TI Markets

	LLCC Consultation	Revised estimate	Difference
TI up to 8 Mbit/s	86%	88%	+2%
TI 34/45 Mbit/s outside WECLA	74%	77%	+3%
TI 140/155 Mbit/s outside WECLA	49%	51%	+2%

Source: Ofcom analysis

- 19.52 Figure 19.4 shows that since the LLCC Consultation, we have revised our estimate of BT's market share in TI markets. For low, medium and high bandwidth TI markets, the revision is small, and so does not alter our conclusion for these markets. Figure 19.4 shows that BT's market share is lower in the high bandwidth TI markets compared to the medium and low bandwidth TI markets, suggesting that this market is relatively more competitive. We have therefore needed to consider whether BT would have an incentive to reduce relative prices in this market, while increasing prices by more than average in the medium and low bandwidth TI market.
- 19.53 We have reassessed this concern and consider that it is not sufficiently material to justify separate baskets. The high bandwidth TI circuits have a very small weight in the TI basket compared with low bandwidth TI circuits. This means that even if BT were to concentrate price reductions on the high bandwidth circuits, the control on medium and low bandwidth TI circuits would not be relaxed to any material extent.
- 19.54 In relation to UKCTA's concern that the inclusion of both regional trunk and adjacent TISBO services within a broad basket could allow BT to raise prices for regional trunk while reducing prices for potentially more competitive terminating segments, we consider that BT is unlikely to have such an incentive. Since the LLCC Consultation, we have revised our estimates of BT's market share in TI regional trunk markets. We now estimate that BT has an 88% market share in regional trunk.¹³⁹⁴ We note that this is one percentage point lower than estimated for the LLCC Consultation and the same as our new market share estimates for the TI low terminating market. We consider that these market share estimates, coupled with the analysis in Section 7 of BT's economies of scale and scope and the existence of barriers to entry in the regional trunk market, indicate that regional trunk faces similar competitive conditions to terminating segments.
- 19.55 As regards CWW's point that a greater proportion of trunk segments has been purchased internally than for terminating segments, we consider that the high proportion of regional trunk BT supplies to internal customers (as indicated by Figure 19.3 above) is likely to provide it with a further incentive not to focus price increases on regional trunk (i.e. as oppose to terminating segments).
- 19.56 Our view is therefore that within the TI basket BT is unlikely to have an incentive to raise prices for regional trunk by reducing prices for terminating segments and hence there is no need for separate baskets for regional trunk and terminating segments.

¹³⁹⁴ See Section 7.

We have decided to proceed with a wide TI basket which includes low, medium and high bandwidth TI services and both terminating and regional trunk segments.¹³⁹⁵

Sub-baskets and sub-caps

The LLCC Consultation proposals

19.57 We proposed a number of sub-baskets and sub-caps where we believed that a further safeguards would be necessary to effectively control the prices of certain services, namely:

- a sub-basket on RBS backhaul, Netstream 16 Longline and SiteConnect;
- a sub-basket on interconnection services (i.e. Points of Handover);
- a sub-cap on ancillary services, equipment and infrastructure; and
- a sub-cap on all other charges (i.e. those services not included in the other sub-baskets and sub-caps specified above).

Radio Base Station backhaul services

19.58 We proposed in the June BCMR Consultation to find that RBS backhaul services formed part of the market for TI wholesale terminating segments up to 8Mbit/s, in which market BT had SMP.¹³⁹⁶ In 2010/11, PPCs made up 64%¹³⁹⁷ of total TI market revenues in 2010/11 and RBS made up a further 19%.¹³⁹⁸ RBS backhaul services are provided using the same underlying components as PPC circuits. Therefore, CPs are likely to face similar conditions when competing to provide these types of services.

19.59 However, one difference between the two sets of services is that, whilst PPCs are provided both externally and internally, RBS backhaul services are sold to external customers, i.e. mobile operators. These mobile operators also provide some competition for BT's downstream voice service. In these circumstances, there may be an incentive for BT to concentrate price reductions on PPCs, rather than RBS backhaul services. Therefore, we considered that it would be appropriate to have an explicit safeguard within the charge control to counteract this incentive.

19.60 As noted above, RBS backhaul services are provided using the same components as PPCs. Under these circumstances, we believed that it would be appropriate to allow BT to recover common costs in the most efficient way, unless there were competitive reasons why this would be undesirable. We believed that imposing a sub-basket constraint on RBS backhaul services within the TI basket would provide a safeguard against potential competition concerns, whilst still allowing BT relative flexibility to set prices and recover common costs efficiently.

¹³⁹⁵ Note that high bandwidth services are included outside the WECLA area only.

¹³⁹⁶ See paragraphs 7.62 to 7.179 of the June BCMR Consultation.

¹³⁹⁷ Total TI market revenues include SDSL. See BT's RFS for 2010/11.

<http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2011/CurrentCostFinancialStatements2011.pdf>.

¹³⁹⁸ BT Wholesale response to Ofcom information request of 21 May 2012.

- 19.61 We proposed to include RBS backhaul services within the TI basket, but to subject them to a sub-basket cap that was consistent with the overall basket cap.¹³⁹⁹ This would retain the advantages of including RBS backhaul in a broad basket, thereby allowing for efficient cost recovery. However, we also considered that the sub-basket would protect RBS backhaul customers from any potential incentives BT may have to discriminate against mobile operators.

Netstream 16 Longline and SiteConnect

- 19.62 Like RBS backhaul services, Netstream 16 Longline and SiteConnect services are sold to external customers only, namely mobile operators.¹⁴⁰⁰ The reasoning set out above for RBS backhaul services therefore also applies to these services. Therefore we also proposed to include these services in the RBS backhaul sub-basket.

Interconnection services

- 19.63 Each PPC purchased by a CP requires a connection between the CP's network and BT's network. This interconnection is provided through a Point of Handover (POH) that CPs must purchase from BT. POHs are only purchased by CPs (and not BT itself) and are essential for infrastructure based competition among providers of leased lines.
- 19.64 Given that POH services are purely sold externally by BT and are essential for infrastructure competition, there would be a competitive risk of placing them in a broad basket without any further constraints. Since POH services made up less than 1% of the overall revenues in the TI market,¹⁴⁰¹ we believed that a sub-basket constraint would offer adequate protection for customers. We therefore proposed in the LLCC Consultation to include PPC POH services in the main TI basket under a sub-basket of RPI-0%.
- 19.65 In our statement entitled 'LLCC PPC Points of Handover pricing review' published on 21 September 2011 (the POH Statement)¹⁴⁰², we explained why CPs should only face the LRIC caused by their demand for POH and we accordingly developed a bottom-up LRIC model for the charges covered in the POH Statement.¹⁴⁰³ We considered that these charges remain at an efficient level, since they were based on the estimated LRIC for the relevant services in September 2011 and we did not consider that costs would have changed materially since then.
- 19.66 In addition, we considered the level of other PPC POH charges that were not covered in the POH Statement.¹⁴⁰⁴ Our assessment of these charges was described in Annex 6 of the LLCC Consultation.

¹³⁹⁹ This was based on the mid-point of our consultation range.

¹⁴⁰⁰ Note that BT also sells some other Netstream services as retail services to other business customers. These Netstream products are not covered by the present charge control.

¹⁴⁰¹ £8m out of £898m. See BT's RFS for 2010/11.

¹⁴⁰² LLCC PPC Points of Handover pricing review, 21 September 2011
<http://stakeholders.ofcom.org.uk/consultations/revision-points-handover-pricing/final-statement/>

¹⁴⁰³ There were eight charges, known as Type II rental charges and Type I additional charges, and these made up over 50% of the total TI POH revenue for 2010/11. See Annex 6 of the LLCC Consultation.

¹⁴⁰⁴ These remaining charges relate to Type I connection and rental charges.

- 19.67 For PPC POH connection charges, we considered that, as the revenues associated with these charges were very low (only £0.24 million in 2010/11), it would be disproportionate to undertake a detailed review of these costs.
- 19.68 We examined the rental charges which were not covered by the POH Statement. There were a total of 108 different types of rental charges which collectively accounted for total revenues of under £4m in 2010/11 RFS. We took a sample of nine of these charges, which accounted for over half of the revenues, and used the model developed for the POH Statement to calculate LRIC estimates for them. We found that the overall level of the charges was consistent with our LRIC estimates.
- 19.69 As set out above, we proposed that RBS backhaul services should be subject to a sub-basket within the TI basket. Similarly to PPCs, each RBS backhaul service is connected between a mobile operator's network and BT's network through a POH. BT's current regulatory reporting does not provide cost and revenue data for RBS backhaul POH. However, given the similarities in the services, we were able to compare the prices of RBS backhaul POH with the corresponding PPC POH.¹⁴⁰⁵ Our analysis showed that the RBS backhaul POH charges were 4.4% lower than the equivalent PPC POH. We therefore considered that the level of these charges was consistent with our LRIC estimates derived for PPC POH and that it would be appropriate to place these services together with PPC POH services in the main TI basket.
- 19.70 We proposed to have a constraint on the overall POH sub-basket, rather than having a cap on each charge. Our modelling suggested that the weighted average level of POH charges was consistent with LRIC. However, within this average, some charges were above our LRIC estimates and others were below. We therefore proposed to use a sub-basket, which would allow BT some scope for rebalancing to bring all charges into line with LRIC. We explained that we did not believe that BT had any strategic incentive to re-balance the charges across different POHs because, given that all are purchased by CPs, there was no clear reason to favour one type of POH product over another.
- 19.71 We proposed that a sub-basket cap of RPI-0% was appropriate, despite this being tighter than the overall TI basket cap. We noted that POH services may be seen as particularly important for competition as they are essential for infrastructure competition. Consequently, we considered it appropriate to err on the side of lower rather than higher charges. A cap of RPI-0% would also ensure that POH charges overall would be no higher than their current level in real terms throughout the charge control period.
- 19.72 We also considered that POHs may be less subject to economies of scale than TI circuits as a whole. Therefore the unit costs of providing these services may not increase in the same way as other TI services as volumes fall. This is because a POH provides a CP with the capacity to aggregate large volumes of services over the interconnection. The CP faces the same charge regardless of the utilisation rate of the POH. Therefore, it is the CP, rather than BT, that is subject to economies of scale.
- 19.73 We also noted that, since POH revenues are small in relation to the overall TI basket, if there was any shortfall on POH services, it could be recovered from other services without having a significant impact on the level of those charges.

¹⁴⁰⁵ There are 79 rentals and 71 connection RBS backhaul POH charges that have corresponding charges for the PPC POH.

Ancillary services and Equipment and Infrastructure

- 19.74 Ancillary services are charges that BT makes for providing other services used in the provision of core TI services. They have traditionally been comprised of services such as ECCs, protected path variants and other charges.¹⁴⁰⁶
- 19.75 In the LLCC Consultation, we proposed to remove ECCs from the list of ancillary services and instead to impose a charge control on them in a separate basket. As ECCs previously accounted for the majority of ancillary services revenues, we explained that it could be disproportionate to still have a separate basket for the remaining ancillary services.
- 19.76 Similarly, we considered that it could be disproportionate to set a separate charge control basket for equipment and infrastructure charges. Our analysis of the RFS and information that BT provided to demonstrate compliance with the LLCC 2009 indicated that these accounted for less than 5% of the combined revenue for all TI services.
- 19.77 Given the number of charges included under ancillary services, equipment and infrastructure charges, and the small size of each individual service (both in terms of costs and revenues), we did not think that it was proportionate to carry out an assessment of these charges. Furthermore, these services are purchased in differently to other leased lines services, which makes forecasting of service volumes complex and subject to additional assumptions. Placing them within the wider TI basket would allow any under- or over-recovery of costs through these charges to be offset against revenues from the main TI services. However, there would still be risks associated with including these services within the wider TI basket. In particular, if the trend in unit costs for ancillary services and equipment and infrastructure were to be different to the unit cost trends for TI services more generally:
- BT could be unable to recover the costs of the services; or
 - this could result in prices rising faster than efficient costs.
- 19.78 In considering the impact of these risks, we took into account the materiality of the impact of our proposals. As a share of total costs, the ancillary services are small and, in our view, the risks referred to above were unlikely to result in disproportionate impacts on BT or on particular groups of customers. As a result, our initial view was that ancillary services and equipment and infrastructure charges associated with TI services should be included in the TI basket.
- 19.79 We were concerned that, due to the low weight that would be associated with these services, including them within the main TI basket without any further safeguard may not result in an effective control of their prices.
- 19.80 We believed that a sub-cap on each charge, rather than a sub-basket covering the overall group of products would be necessary in this case because of the diverse and individualised nature of the various ancillary services, equipment and infrastructure sold by BT. This diversity means that the prior year weighting used in the charge control formula may not give an adequate control as the products and services

¹⁴⁰⁶ For example, those covered in B8.06 of BT Wholesale's price list.

https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/carrier_price_list/cpl_sectionb8partialprivatecircuits.htm

purchased may differ from one year to the next. This proposal also had the advantage that it would be easy to monitor and for BT to demonstrate compliance.

- 19.81 We proposed to impose a sub-cap on each charge at the same level as the overall basket cap, to ensure that customers using these services would not be disproportionately affected by price rises. Given our consultation range, this sub-cap was provisionally set at RPI+3.25%, based on the mid-point of our range of RPI-0% to RPI+6.5%.

A sub-cap on each charge for all other services

- 19.82 In addition to the constraints set out above, we proposed in the LLCC Consultation to set a sub-cap on the prices that BT may charge for other services falling within the TI basket. Such a sub-cap would limit BT's ability to increase the prices of particular services in any given year. We have used such sub-caps on each charge in a number of previous charge controls, including the LLCC 2009. Our overall TI basket is broad and includes a large number of individual charges. As explained above, this broad basket would give BT flexibility to set prices in an efficient way to recover common costs. Nevertheless, we considered that this flexibility should be limited.
- 19.83 The choice of a level for the sub-cap is a regulatory judgement and, in exercising that judgement, we have regard in particular to the importance of balancing the benefits of flexibility for BT with the risks to customers or potentially disruptive effects to competition of sharp increases in prices for some services.
- 19.84 We proposed to set this sub-cap at RPI+10% and apply it to all services in the TI basket that were not otherwise controlled under the other sub-caps and sub-baskets that we were proposing.¹⁴⁰⁷ We considered that this level for the sub-cap would be proportionate in providing BT with a certain degree of flexibility to balance charges and recover costs efficiently, whilst also promoting sustainable competition by preventing BT from undue rebalancing of charges, and conferring the greatest possible benefits on end-users by restricting BT's ability to increase any given charge too quickly.
- 19.85 We also explained that the proposed level of the sub-cap at RPI+10% was based on the mid-point of our indicative range for the value of X and that if we set X at a level towards the top or bottom of the range in this Statement, we would consider adjusting the level of the sub-cap to provide a similar level of flexibility for BT.

Consultation responses

RBS backhaul, Netstream 16 Longline and SiteConnect services

- 19.86 Both Vodafone and Telefónica UK supported the proposal to apply the charge control to RBS backhaul and to have a specific price-cap on RBS services.^{1408, 1409} Telefónica

¹⁴⁰⁷ This would mean that the cap would apply to all services in the TI basket, except for interconnection services, ancillary services, equipment and infrastructure, RBS backhaul services, Netstream 16 Longline and SiteConnect.

¹⁴⁰⁸ See Telefónica UK non-confidential response to the LLCC Consultation paragraphs 62 (pp. 24) and 65-68 (pp. 26).

¹⁴⁰⁹ See Vodafone non-confidential response to the LLCC Consultation, page 1.

UK, however, argued that there is likely to be a residual of some RBS circuits where migration to Ethernet is not possible.¹⁴¹⁰

- 19.87 EE agreed with the use of a sub-basket for these services, but expressed reservations about the level of the cap on the basket. EE said that, in the short term, customers may be locked into continued purchase of particular TI products. EE was “concerned that the application of RPI+3.25% to a basket of such services [comprising RBS, Netstream 16 Longline and Siteconnect] could lead to an inappropriate increase in some of its costs”. EE did “not think that BT should be able to increase the prices of such individual products by more than the level which Ofcom has deemed reasonable for TI services as a whole”. Therefore, EE proposed that we set an RPI-X sub-cap on each individual charge for the RBS, Netstream and Siteconnect products, rather than on this basket as a whole.¹⁴¹¹

Interconnection services

- 19.88 We received two responses, from CWW and Telefónica UK, to our proposal for a sub-basket for the interconnection services. Both responses agreed with the proposal for a sub-basket but suggested additional controls.
- 19.89 CWW agreed with our proposal on the POH “with the exception further sub-caps should be put in place that either constrain the price of Type I and Type II handovers separately, or provide a constraint on individual charges within the sub-basket”. CWW claimed that the failure to place any further sub-caps on charges within the POH sub-basket will imply that appropriate balance may not be maintained. CWW proposed separate sub-baskets placed on Type I and Type II handover charges, or sub-caps, of maybe RPI+5% should be placed on each individual charge within the sub-basket.¹⁴¹²
- 19.90 Telefónica UK was concerned that we had not decided to create a separate sub basket for RBS interconnection and a separate sub basket for PPC interconnection.¹⁴¹³

Ancillary services and equipment and infrastructure

- 19.91 We received no response from stakeholders on our proposal for a cap on each ancillary service and equipment and infrastructure charge.

A cap on each charge for all other services

- 19.92 We received no response from stakeholders on our proposals for a cap on each charge for all other services.

Our response and conclusions

RBS backhaul, Netstream 16 Longline and SiteConnect services

- 19.93 We remain concerned that BT may have a strategic incentive to increase the prices of RBS Backhaul, Netstream 16 Longline Siteconnect products. These are all

¹⁴¹⁰ See Telefónica UK non-confidential response to the LLCC Consultation, page 34.

¹⁴¹¹ See EE non-confidential letter dated 4 September 2012.

¹⁴¹² See CWW response to the LLCC Consultation, paragraphs 15.34-15.35, pp. 72-73.

¹⁴¹³ See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 103 (pp. 34-35).

ultimately purchased by mobile operators who may offer some competition for BT's services. We will therefore impose a sub-basket for these services, with a value equal to the overall basket cap of RPI+2.50%.

19.94 We have considered carefully EE's argument that the proposed sub-basket cap for RBS, Netstream 16 Longline and Siteconnect should instead apply to each and every charge. We do not consider that imposing such an obligation would be appropriate. Below we present our reasons:

- first, RBS backhaul, Netstream 16 Longline and SiteConnect products are considered to be in the same market. We, thus, expect the three products considered to face similar competitive conditions; and
- second, these products are ultimately all for external consumption by mobile operators. We consider that within this group of products, BT does not have incentives to discriminate in favour of a particular product or subset of products in order to gain a competitive advantage.

19.95 However, we note that within the RBS sub-basket it is possible that some products which account for a small weight in the basket may not be adequately controlled. This is because even a large increase in the price of such products would not account for a material amount on the overall basket.

19.96 In order to mitigate this risk, we have decided that the sub-cap on each and every charge of RPI+10% should also apply within the basket. This will protect customers of such services, whilst at the same time allowing BT some flexibility in recovering its costs.

Interconnection services

19.97 Interconnection products are essential for competition in TI services. These products are only purchased by BT, so we remain concerned that BT has the incentive to increase the price of interconnection products. As explained in Annex 13, we consider that the average price of these services is in line with LRIC. We therefore will control these services in a sub-basket with a price control of RPI-0%.

19.98 We have considered carefully the arguments raised by CWW about imposing separate sub-baskets on Type I and Type II handover charges, or sub-caps of RPI+5% on each individual charge within the handover charges. However, we do not consider that imposing such an obligation in addition to the RPI-0% sub-basket would be appropriate. We note that these products are purchased by CPs only. We have not identified any strategic incentives on BT to discriminate in favour or against a particular product or subset of products.

19.99 Within the POH sub-basket, individual charges may account for a small weight in the basket. As these products have a small weight, even a large increase in the price of these products may have little impact on the overall basket cap. We will guard against this flexibility by extending the safe-guard cap of RPI+10% on each and every charge to apply to this sub-basket. This will protect customers of these services, whilst giving BT some flexibility in pricing.

19.100 We have considered the arguments raised about separate sub-baskets for RBS and PPC interconnections.

19.101 As all interconnection services are purchased by competitors to BT, we do not see the incentive for BT to discriminate in favour or against any category of interconnection products. We also note that within the interconnection sub-basket, the price of each individual product will also be subject to a cap on each and every charge of RPI+10%. We consider that this will help protect against undue price changes on individual interconnection products.

Ancillary services and equipment and infrastructure

19.102 We will include ancillary services, equipment and infrastructure in the main basket, subject to a sub-cap of the same value as the overall basket cap. This is in order to protect these services which have a small weight in the overall basket.

A cap on each charge for all services

19.103 We have decided that a sub-cap of RPI+10% should apply on each charge in the TI basket as opposed to only those charges that are not covered by other sub-baskets. We have forecast DSAC for the duration of the charge control, using the data in the RFS, and our forecasting model. Given the other sub-caps and sub-baskets which we have proposed, a control of RPI+10% is sufficient to ensure that the prices of all services for which DSAC data is available, are below forecast DSAC throughout the charge control. This gives reassurance that the control is sufficient to ensure that prices will not be excessive.

19.104 The imposition of a cap on each charge will strike a balance between allowing BT some flexibility in pricing, whilst at the same time not allowing any individual charge to stray too far out of line. This also acts as a protection against undue price rises on charges which may individually account for a small proportion of the basket.

The anchor pricing approach for TI services

The LLCC Consultation proposals

19.105 In the LLCC Consultation we proposed to adopt the anchor pricing approach when modelling TI services. As explained in Section 4 of that Consultation, the anchor pricing approach means that costs and asset values are based on the existing technology that is used to deliver services. This is opposed to the MEA approach, whereby the services would be modelled on the basis of a newer, more efficient technology.

19.106 We considered the case for adopting either the MEA or anchor pricing approach for TI terminating segments and, separately, for the delivery of TI services over BT's core network. In both instances we proposed to adopt the anchor pricing approach.

19.107 For TI terminating segments, we explained that we could not identify an MEA, since there were no alternative technologies that fulfilled the conditions of being able to provide the same service as the existing technology to at least the same level of quality and to the same groups of customers.

19.108 We considered three alternative technologies as potential MEAs: broadband, VPNs and Ethernet.

19.109 We explained that some customers who use TI terminating segments may find that broadband would be able to match the capacity of TI leased lines services (at least in terms of download speeds). However, there are significant differences between the

service characteristics of broadband and TI services. For instance, broadband does not offer dedicated point-to-point connectivity between two customer end points or guaranteed transmission speeds and may suffer delays and bandwidth decreases during busy times (although less so for business-grade broadband products). Broadband also lacks the security, repair times and synchronisation of leased lines.¹⁴¹⁴ We therefore did not believe that broadband would fulfil the requirements of the MEA to be the most efficient way of delivering the same service, to the same level of quality, as the current technology.

19.110 We also considered that VPNs, both those accessed by broadband and those accessed by leased lines services, did not fulfil the criteria for being an MEA. VPNs accessed via broadband do not provide the reliability, performance or security as leased lines services, so they do not provide the same service to the same level of quality. In contrast, VPNs accessed via leased lines do offer equivalent service features but they make heavy use of leased lines as an input and involve the additional provision of a network management function. For this reason, these VPNs are best characterised as a downstream service rather than as a substitute to leased lines and therefore could not be considered as an MEA.

19.111 Nor did we consider Ethernet as an appropriate MEA, since it was not yet able to replicate certain service characteristics of TI services that are important to customers.¹⁴¹⁵ For instance, Ethernet cannot currently achieve the same standards in terms of synchronisation, resilience, latency and jitter, so it could not be said to provide the same service to the same level of quality to the same base of customers.

19.112 Given that we could not identify an appropriate MEA for TI terminating segments, we proposed to adopt an anchor pricing approach.

19.113 For the delivery of TI services over the core of BT's network, we explained that, whilst we could identify a potential MEA (21CN SDH technology), there was not sufficiently reliable cost data for us to adopt the MEA approach at this time.

19.114 The delivery of leased lines services over BT's core network has traditionally been based on SDH technology.¹⁴¹⁶ We explained that the development of 21CN technology (including next generation of SDH technology) in the core was progressing and that BT had migrated some internal services to be delivered over the 21CN core.¹⁴¹⁷ BT had also carried out performance tests on this trial network to ensure that other CPs could receive a consistent customer experience as new 21CN SDH technology was introduced into their services. Current data available from testing indicated that it was capable of delivering the same service to customers, at the same level of quality as the 20CN technology. Therefore, it appeared likely that 21CN SDH technology would eventually be used to deliver TI leased lines services over the core of BT's network.

19.115 However, we considered that the MEA approach may not be practical in this case, due to the difficulty in obtaining robust estimates of what the MEA costs for the 21CN network would be, for the reasons set out below:

¹⁴¹⁴ See paragraphs 3.87 to 3.172 of the June BCMR Consultation.

¹⁴¹⁵ See paragraphs 4.21 to 4.51 of the June BCMR Consultation.

¹⁴¹⁶ See Section 2 of the June BCMR Consultation on relevant technical background.

¹⁴¹⁷ For instance, BT Wholesale informed us that some of the SDH 155 bearers used to convey the ATM service are now provided over the 21CN Core rather than legacy SDH platforms. See https://www.btwholesale.com/shared/document/21CN_Consult21/c21_MG_015_DSP_Jan12_Issue17.pdf

- Current proportion of circuits routed over 21CN - knowledge of this proportion would be required in order to estimate what an efficient level of network costs would be if all circuits were routed over 21CN. BT Wholesale informed us that the TI services that had been migrated across to the 21CN core had been made on an ad hoc basis. Most migration had occurred as a result of faults in legacy equipment being replaced in part or in full by 21CN components. This suggested that data on 21CN costs may not provide a reliable basis on which to estimate costs for the core part of the SDH network.
- Proportion of 21CN core costs attributable to individual circuits - 21CN core is expected to be used for other services, including other regulated services, as well as non-regulated services. We would therefore need to be able to assess how these costs have been allocated to TI services. We would also need to consider whether individual circuits varied in the extent to which they used the core network and what this meant in terms of estimating costs of a TI circuit.
- Forecast of circuits to be routed over 21CN – in order to implement the MEA approach to setting charges, we may have had to assume what an efficient migration path for routing TI services would be. This is because we acknowledge that it is not possible to have costless transition between technologies, particularly at each and every point in time.

19.116 Given the limitations around attempting to adopt the MEA approach, as explained above, we proposed to adopt the anchor pricing approach. We considered that the anchor pricing approach would provide BT with the incentive to invest and adopt new technology and migrate TI services where it is efficient to do so, since this routing decision is made by BT, rather than its customers. Therefore, BT would be able to benefit from efficient investment, which would also be in its customers' long term interests.

Consultation responses

19.117 CWW agreed with Ofcom that the established anchor pricing approach was appropriate for TI services.¹⁴¹⁸

19.118 Similarly, EE and MBNL said that an anchor pricing approach seems, in principle, to be reasonable.¹⁴¹⁹

19.119 Level 3 expressed concerns with our proposal to adopt the MEA approach for Ethernet Services but seemingly not for TI trunk services. Level 3 said that the "MEA approach to TI services would help keep TI trunk pricing down".¹⁴²⁰

19.120 BT did not disagree with anchor pricing in principle, but expressed some concerns over how anchor pricing for TI services has been implemented.¹⁴²¹ These are dealt with in paragraphs below on base year adjustments.

¹⁴¹⁸ See CWW response to the LLCC Consultation, paragraph 15.8.

¹⁴¹⁹ See EE and MBNL non-confidential response to the LLCC Consultation, page 20.

¹⁴²⁰ See Level 3 non-confidential response to the LLCC Consultation, page 5.

¹⁴²¹ See BT non-confidential response to the LLCC Consultation, page 15.

Our response and conclusions

19.121 We have carefully considered the responses to the Consultation on the anchor pricing approach for TI services. We note that all stakeholders were in favour, apart from Level 3 who was concerned that we had not adopted the MEA approach for the pricing of the core.

19.122 We have reassessed the evidence relating to TI services in the core. We consider that the practical difficulties to estimating the MEA costs for such services are still applicable. However, we have noted that the costs of the existing technology are known, and represent an upper bound to the costs of any candidate MEA.¹⁴²²

19.123 We have therefore adopted the anchor pricing approach across all TI services and based the costs on the existing TI technology.

Adjustments to base year costs and revenues

19.124 In the LLCC Consultation we proposed to make a number of adjustments to the base year costs and revenues provided in BT's RFS when modelling the charge control for the TI basket. These adjustments were categorised into two types:

- adjustments to reflect the composition of the basket; and
- adjustments to reflect forward-looking efficient costs for the purposes of forecasting costs to 2015/16.

19.125 The overall effect of our proposed adjustments increased the TI basket return on capital employed (ROCE) from 14.2%, as reported in the 2010/11 RFS, to around 27%.

Adjustments to reflect the composition of the basket

The LLCC consultation proposals

Non-modelled services

19.126 For the purposes of modelling the costs and revenues for the TI basket, we focused on the main set of TI services for which there is a clear disaggregation of costs and revenues available from BT. Together these services accounted for approximately 90% of the total TI market and a greater a proportion of the TI basket itself. These services comprised of:

- PPCs;
- RBS backhaul;
- Netstream 16 Longline; and
- SiteConnect.

19.127 We did not model ancillary services and equipment and infrastructure charges because we did not have detailed volume forecasts and/or cost volume relationships

¹⁴²² Note that an MEA can never be more expensive than the existing technology as by definition it is the most efficient way to deliver the services in question.

for these services. For POH, we analysed these charges on the basis of the bottom-up model developed for the POH Statement, as set out in Annex 6 of the LLCC Consultation. For these reasons, we proposed to exclude them from our base year costs.

- 19.128 For ancillary services, BT Wholesale identified additional costs associated with protected paths and separation and diversity options that were reported against PPC services.¹⁴²³ We removed these costs from the cost base as we do not model ancillary services costs and revenues.

Services out of scope of the TI basket

- 19.129 We proposed to exclude the costs and revenues associated with services outside the TI basket from our analysis of BT's base year costs. We therefore excluded the costs and revenues of SDSL services from the cost base.¹⁴²⁴ We also removed the costs and revenues associated with ECCs, which we proposed to control separately.

Removal of assets built under 'excess construction'

- 19.130 BT includes the cost of providing 'excess construction' services within the base data for TI services. These services were outside the scope of the TI basket and therefore we needed to remove associated costs and revenues from BT's accounts.

- 19.131 BT estimates the costs of ECCs in its RFS. BT also capitalises and depreciates all ECC costs. However, these costs do not need to be recovered as part of ongoing revenues to ensure cost recovery because customers have to pay BT upfront when they incur ECCs. We therefore proposed to remove capital employed associated with ECC costs from Mean Capital Employed (MCE) of other services to avoid double recovery.¹⁴²⁵

- 19.132 Based on information provided by BT, we estimated that the valuation of assets created under excess construction is £39m.¹⁴²⁶ We proposed to eliminate this from base year costs. We noted that the removal of MCE from the cost base would have the following two effects on the cost stack of the TI basket:

- a reduction in the allowed return on capital because we calculate the allowed return on capital as the Weighted Average Cost of Capital (WACC) multiplied by the MCE;¹⁴²⁷ and
- a holding loss or gain. A holding loss would arise if the average asset price change associated with the MCE is expected to be negative.

Geographic cost adjustments

- 19.133 We proposed in the June BCMR Consultation that no operator had SMP in medium and high bandwidth TI services in the WECLA.¹⁴²⁸ We therefore proposed in the

¹⁴²³ BT Wholesale response to S135 Notice of 21 May 2012.

¹⁴²⁴ This is a legacy product which BT does not intend to support beyond spring 2014.

¹⁴²⁵ See Table A5.17 in Annex 5 of the LLCC Consultation for an explanation of accounting terms used.

¹⁴²⁶ BT Wholesale response to S135 Notice of 21 May 2012.

¹⁴²⁷ See Annex 5 of the LLCC Consultation for a description of the cost forecasting approach used.

¹⁴²⁸ See Table 46, Section 7 of the June BCMR Consultation.

LLCC Consultation to exclude the costs and revenues associated with these services in the WECLA from our modelling. We explained that, if costs differed between the charge controlled and non-charge controlled areas, then in order to accurately model the costs in the charge controlled area, we should use geographically disaggregated costs.

19.134 BT Wholesale analysed the costs for TI services that vary by geography and provided us with its calculations of the extent of the difference between the WECLA and the rest of the UK.¹⁴²⁹

19.135 First, BT Wholesale categorised the costs attributed to medium and high bandwidth TI services in the WECLA into the following categories:

- access related costs, which include duct and fibre which are considered to vary in relation to distance from the local exchange;¹⁴³⁰
- equipment related costs, which include power and maintenance and are considered to vary in relation to the equipment at the local exchange;¹⁴³¹ and
- other costs, which are mainly admin costs that are not considered to vary by geography.¹⁴³²

19.136 Secondly, BT Wholesale calculated the extent to which access and equipment related costs would differ between the WECLA and the UK national average.

- BT Wholesale considered that per unit access costs would be lower in the WECLA than the national average as local end lengths were shorter in the WECLA. BT Wholesale calculated the difference in local end lengths and considered that access related costs would vary by this differential.
- BT Wholesale considered that unit equipment related costs would be lower in the WECLA as the utilisation of equipment was higher. BT Wholesale calculated the volume of equipment at the WECLA exchanges and the number of local ends and main links connected to this equipment. This found that equipment in the WECLA had a higher utilisation than the national average resulting in lower unit costs. This unit cost differential was applied to equipment related costs.

19.137 Thirdly, the unit cost differentials for access and equipment related costs, were applied to the overall share of these cost categories in the circuit.¹⁴³³

19.138 We assessed BT Wholesale's methodology for estimating geographic costs. We considered that it was reasonable that, to the extent that local end distances were shorter and that equipment had a higher utilisation in the WECLA, there may be lower costs than in the rest of the UK. We also conducted a detailed review of the spreadsheets and calculations that BT Wholesale has used to derive the above

¹⁴²⁹ BT Wholesale response to S135 Notice of 21 May 2012.

¹⁴³⁰ Access costs include copper, fibre and duct.

¹⁴³¹ Equipment related costs include land, network equipment, buildings, motor transport, provision and installation, and maintenance.

¹⁴³² These include finance and billing, customer service and other overhead type activities.

¹⁴³³ BT Wholesale considered that there were no access related costs for links, so the unit cost differential for links relates to equipment related costs only.

estimates. Our detailed review did not highlight any apparent calculation errors or inconsistencies in BT's estimates.

- 19.139 We proposed to adjust the nationally averaged cost data based on this geographic analysis when modelling medium and high bandwidth TI services, as we believed that this would provide a more accurate picture of the costs in the charge controlled area than nationally averaged data. Our analysis suggested that the costs for medium and high bandwidth circuits were 10% to 20% higher in the charge controlled area than in the non-charge controlled area.

BT volume update

- 19.140 BT updated its 2010/11 volume data for main links and local ends based on revised data from BT's costing system.¹⁴³⁴ BT identified errors in the estimates used in the RFS, mainly concerning internal volumes, following a detailed review of the system as part of the work on geographic costing that we requested. We reviewed the data provided by BT and we considered that the new data was likely to be more accurate and therefore more suitable for use within the charge control model. This reduced the TI revenues by £25m in the base year.

Consultation responses

Non-modelled services

- 19.141 We received only one response on our proposed adjustments to non-modelled services. BT commented on the POH adjustment.
- 19.142 BT argued that our POH adjustment was inconsistent with the policy approach adopted when the POH charges were implemented. BT argued that to be consistent with the pricing of POH services, the incremental cost rather than Fully Allocated Costs should be removed, thereby ensuring that the fixed common cost remain within the basket to be recovered from other TI services.¹⁴³⁵

Services out of scope of the TI basket

- 19.143 We received no stakeholder response on our proposal to exclude the costs and revenues (SDSL services) associated with services outside the TI basket from our analysis of BT's base year costs.

Removal of assets built under "excess construction"

- 19.144 We set out the responses we received on our proposed MCE adjustment in section 22.

Geographic cost adjustments

- 19.145 We received no stakeholder response on our proposal to exclude the costs and revenues associated with TI services in the WECLA from our modelling.

¹⁴³⁴ For circuits above 2Mbit/s BT's Core Transmission Costing System ('CTCS') is the central system for determining how circuits are provisioned within the network.

¹⁴³⁵ POH charges were priced on a LRIC basis, meaning that these services make no contribution to the recovery of common costs. See BT non-confidential response to the LLCC Consultation, paragraphs 13-15, page 17.

BT volume update

19.146 We received no stakeholder response on our adjustment to use the new data.

Our response and conclusions

Non-modelled services

19.147 We decided that, for the purposes of modelling the costs and revenues for the TI basket, it is appropriate to focus on the main set of TI services for which there is a clear disaggregation of costs and revenues available from BT. Together these services account for approximately 95% of the total TI market and a greater proportion of the TI basket itself. These services include:

- PPCs;
- RBS backhaul;
- Netstream 16 Longline; and
- SiteConnect.

19.148 We do not model ancillary services or equipment and infrastructure charges for the following reasons:

- there were no detailed volume forecasts and/or cost volume relationships for these services readily available from BT; and
- our analysis of the RFS and information that BT provided to demonstrate compliance with the LLCC 2009 indicates that these account for around 5% of the combined revenue for all TI services.

19.149 For ancillary services, BT Wholesale identified additional costs associated with protected paths and separation and diversity options that were reported against PPC services.¹⁴³⁶ We removed these costs from the cost base as we do not model costs and revenues for ancillary services.

19.150 For POH, we considered BT's response. In the LLCC Consultation, we removed the fully allocated costs of POH from the model. Given our decision that POH should recover only LRIC, we agree with the principle that we should remove only the LRIC costs from our model. In Annex 13 we have assessed the structure of POH charges, and provided our assessment that on average, the charges are at LRIC. We have therefore removed only POH costs equivalent to POH revenues from the basket. The difference between POH LRIC costs and FAC remains in the TI basket as an 'administration cost'. We consider that the adjustment to remove POH from our base year costs is now consistent with our policy approach for setting POH charges.

Removal of assets built under 'excess construction'

19.151 BT includes the cost of providing 'excess construction' services within the base data for TI services. These services are out of scope of the TI basket and therefore we do not take into account associated costs and revenues from BT's accounts. BT estimates the costs of ECCs in its RFS.

¹⁴³⁶ BT Wholesale response to s135 Notice of 21 May 2012.

19.152 As explained in Section 22, BT adjusted its 2011/12 cost allocation to remove an estimate of MCE and depreciation associated with ECCs from other services, across TI and Ethernet. BT determined the MCE number by estimating ECC capital expenditure and depreciation for the last 10 years. The resulting adjustment is then split across services in proportion to service volumes. The total adjustment is [~~£~~] of MCE and £3m of depreciation for TI.¹⁴³⁷ This is higher than the £39m of MCE for TI services which we had estimated in the LLCC Consultation.

19.153 We consider that the adjustments made by BT are sufficient to adjust base year costs to remove MCE from the Ethernet and TI services and replace the adjustment for ECC MCE that we did for the consultation. We do not consider a further adjustment is necessary.

Geographic cost adjustments

19.154 In the June BCMR analysis, we consulted on the finding that no operator had SMP in medium and high bandwidth TI services in the WECLA.¹⁴³⁸ Subsequent to the June BCMR Consultation we have modified the WECLA area to include additional postal sectors and also done a further detailed analysis of the data underpinning the network reach analysis which resulted in some small changes. This is discussed in detail in Section 5.

19.155 In line with these findings, we have decided it appropriate to exclude the costs and revenues associated with these services in the WECLA from our modelling. As explained in the LLCC Consultation, BT Wholesale analysed the costs for TI services that vary by geography and provided us with its calculations of the extent of the difference between the WECLA and the rest of the UK.¹⁴³⁹

19.156 We assessed BT Wholesale's methodology and calculations for estimating geographic costs and we consider it to be reasonable. We therefore adjust the nationally averaged cost data based on this geographic analysis when modelling medium and high bandwidth TI services. Given the scope of the geographic markets, our analysis suggest that the unit costs for medium and high bandwidth circuits were 10% to 20% higher in the charge controlled area than in the non-charge controlled area.

BT volume update

19.157 Given that we updated the base year to 2011/12 and the volume error only related to 2010/11, we no longer need to make the adjustment to base year data.

Adjustments to reflect forward-looking efficient costs

The LLCC consultation proposals

Recalculating holding gains/losses

19.158 In its RFS, BT calculates holding gains/losses in relation to:

¹⁴³⁷ BT Wholesale response to s135 Notice of 14 February 2013 [~~£~~].

¹⁴³⁸ See Table 46, Section 7 of the June BCMR Consultation.

¹⁴³⁹ BT Wholesale response to S135 Notice of 21 May 2012.

- cost movements in the underlying assets experienced in the year ('cost' holding gain/loss) - a real holding gain (loss) is the additional value (loss) that accrues to the holder of an asset as a result of an increase (decrease) in its price relative to the prices of goods and services in the general economy; and
- other holding gains/losses in the year ('other' holding gain/loss) - this is by far the biggest category of costs. These are non-recurring items that typically arise as a result of BT changing its valuation methodologies or sampling differences.

19.159 For example, in 2010/11 a number of assets moved from an absolute valuation (CCA) basis to an HCA basis. The difference between the CCA and HCA asset values was included as 'other CCA adjustments'.

19.160 In 2010/11 there were also other one-off adjustments attributable to the factors set out below.

- Changes to the sample of Local Exchanges used in the CCA valuations to value Duct. The changes to the sample led to differences when the sample was extrapolated to the whole network.
- Using new standard job times led to asset valuation differences when these were used in the CCA valuation. This affected the copper and fibre valuations.
- 21CN assets changed from HCA to a CCA valuation. Asset price changes relating to prior years were included within 'other CCA adjustments'.¹⁴⁴⁰

19.161 Holding gains/losses were included in the cost stack as a part of CCA depreciation so that we had a forward-looking projection that was consistent with the asset price changes we assumed in the model.

19.162 In the LLCC Consultation we proposed two adjustments to the total holding gains/losses when including these in our analysis:

- we excluded other holding gains/losses - this was to ensure that our own asset valuation was consistent with the holding gains/losses we proposed to allow; and
- we only took into consideration the effect of cost inflation - we proposed to only take into account the cost element of the holding gains/losses. To do this, we recalculated the effect of cost inflation based on the historical five year average in the trend of real asset price changes as a proxy for future asset price changes.

Regulatory Asset Value of access duct

19.163 In the 2005 Review, we decided the basis that we would adopt in valuing BT's access assets.¹⁴⁴¹ The decision was that we revert to the Historical Cost Accounting (HCA) value for the duct assets that BT had in place in 1997, but indexed at RPI going forward, whilst adopting CCA replacement value for assets that had been built since 1997. This followed an earlier decision in 1997 to change the valuation methodology for BT's entire asset base from HCA to CCA.

¹⁴⁴⁰ BT Wholesale's response to Ofcom's information request issued on 21 May 2012.

¹⁴⁴¹ <http://stakeholders.ofcom.org.uk/binaries/consultations/copper/statement/statement.pdf>

- 19.164 The reason for this decision in 2005 was that, as a result of the 1997 revaluation, there was a risk that BT would earn an excessive return on pre 1 August 1997 (pre-1997) assets due to the change in accounting approach taken for these assets during their lifetime.
- 19.165 The revaluation of duct assets resulting from the 2005 Review is not reflected in the RFS. The value in the RFS represents BT's estimate of the cost of replacing the duct that has been constructed in the last 40 years - a CCA valuation.
- 19.166 We reviewed whether the regulatory asset value (RAV) valuation was still appropriate in the WLR LLU CC, published in March 2012, and we proposed to find that it was.¹⁴⁴² We also considered if the post-1997 CCA value of duct was appropriate. We proposed to find that CCA was the appropriate method of valuation, but proposed a different method for determining the post-1997 duct CCA valuation, that is, by indexing actual capital expenditure by RPI.
- 19.167 We also looked into RAV in more detail as part of the duct revaluation question in the WLR LLU CC. We proposed to find that it was clear that the value of duct was the main remaining part of RAV.
- 19.168 Duct is used by a variety of services, provided both over copper and fibre, and it is impossible to determine what specific services use pre-1997 duct. Therefore, it is not necessarily the case that services that were added after 1997 would not use pre-97 duct. Therefore we could only assume that services that utilise a duct component would use some proportion of pre-1997 and post-1997 duct.
- 19.169 We refer to the 'RAV adjustment' as the adjustment to BT's total CCA duct value in line with the WLR LLU CC, namely indexed HCA for pre-1997 assets and indexed capital expenditure for post-1997 assets.
- 19.170 In the LLCC Consultation we proposed to apply the RAV adjustment to the TI basket of services because:
- if we did not take into account the RAV adjustment for the value of pre-1997 access duct and cable consumed by TI terminating segments, this would lead to an over-recovery of BT's investment in these assets; and
 - for consistent economic regulation, assets should be valued on a similar basis for all the services that consume those assets. Using different valuation approaches would risk distorting relative prices and decisions based on those prices. We have said in the LLCC Consultation¹⁴⁴³ that we will apply a RAV adjustment uniformly across all charge controls to all services that consume access copper and duct.
- 19.171 To prevent any under or over-recovery resulting from the change in the accounting treatment of the pre-1997 copper access assets (duct and copper cable), we proposed to apply the RAV adjustment to TI services within scope of the charge control. We used BT's RAV model as submitted to Ofcom and BT's indication of the proportion of the duct and copper that is related to TI services in order to determine the appropriate value of the RAV adjustment.

¹⁴⁴² <http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf>

¹⁴⁴³ The LLCC Consultation paragraph 5.121

19.172 We proposed to allocate the adjustment across all TI services within the scope of the TI basket. In the LLCC 2009 the adjustment was applied only to local ends on the basis that the local ends consume most of pre-1997 copper.

19.173 Data provided by BT indicated that TI services utilise approximately 10% of the total duct assets within the RAV.¹⁴⁴⁴ We applied this percentage to the difference between BT's absolute valuation and RAV valuation. This approach resulted in a RAV adjustment for MCE of £179m and depreciation of £14m.

Removal of 21CN costs

19.174 TI basket services included an element of the cost BT is investing in its 21CN network. In line with our proposal on the anchor pricing approach, we considered that the costs to be recovered from customers should not increase as a result of the 21CN investment, particularly as the decision to migrate customers to 21CN is BT's and not the customers'. As such, we proposed to exclude these costs from our cost base.

Payment terms

19.175 Part of the relevant capital employed includes the cost to BT of financing the payment terms it offers. BT reflects this cost as notional debtors. BT's value for notional debtors reflects 33 days of revenues across all services, which differs from the terms actually offered on individual services.

19.176 We proposed to adjust notional debtors to reflect BT's actual payment terms for each service.

Consultation responses

Recalculating holding gains/losses

19.177 We received no stakeholder response on our proposal to recalculate holding gains/losses.

RAV of access duct

19.178 We received responses from three stakeholders on our proposed RAV adjustment of access duct. In general, respondents agreed with our proposals. One stakeholder did not agree with our proposal.

19.179 CWW and TalkTalk agreed with our proposed RAV adjustment. TalkTalk, however, asked for further clarification on why the proposal was different to the policy adopted in the LLCC 2009 and argued that we should also apply such a RAV adjustment to the ongoing Ethernet disputes.¹⁴⁴⁵

19.180 CWW believed that "it was incorrect not to make the adjustment in relation to duct used for fibre in the last control because in reality the fibre used by products in these markets does make use of pre-1997 duct". CWW also agreed that post-1997 assets should be subject to the adjustment since Ofcom used it in the WLR LLU CC.¹⁴⁴⁶

¹⁴⁴⁴ BT Wholesale's response to information dated 6 October 2011. [X].

¹⁴⁴⁵ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.17-5.19.

¹⁴⁴⁶ See CWW response to the LLCC Consultation, paragraphs 15.15-15.16.

19.181 BT did not agree with our proposal to apply the RAV adjustment claiming that “the extension of the RAV adjustment to fibre-based leased lines is unjustified”.¹⁴⁴⁷ It said applying the RAV adjustment to non-copper-based services is a fundamental change of policy from the last LLCC in 2009. BT noted that this significantly increases the proposed X for AI and reduces it for TI services. In BT’s view, Ofcom should maintain the approach from the previous LLCC. It also argued that the RAV adjustment should not apply to duct carrying core services as it has, in BT’s view, only ever been an adjustment to the costs of the access network.¹⁴⁴⁸

Removal of 21CN costs

19.182 We received one response on our proposal that the costs to be recovered from customers should not increase as a result of the 21CN investment. The response was against our proposal.

19.183 BT said that where the “old technology” assets are approaching the end of their depreciation lives but remain in use, the book value of both depreciation and mean capital employed will be below a sustainable level. This is especially relevant where the volume of fully depreciated assets is significant as without adjustment, no costs at all would be included for this equipment. BT claimed that it is investing in 21CN assets to replace part of the network used by TI services. BT argued that either BT’s total costs should be included (both 21CN and existing technology) or the costs of using the existing technology need to be uplifted to be consistent with a Hypothetical Ongoing Network (as adopted in the 2009 Network Charge Control and 2009 Leased Lines Charge Control).¹⁴⁴⁹

Payment terms

19.184 We received two responses on our proposal to adjust notional debtors to reflect BT’s actual payment terms for each service. One response raised concerns and one response was against our proposal.

19.185 It was not clear to TalkTalk whether trade creditors had been included in our calculation of costs, but it noted that it seemed that trade debtors had been included. TalkTalk saw no reason to exclude this item and argued that, since trade creditors exceeded trade debtors, this suggested that they would have a material impact.¹⁴⁵⁰

19.186 BT disagreed in principle with the payment terms adjustment made to the base year costs as it wrongly assumed that all payments to BT were received in accordance with standard contract terms. BT claimed that this was not the case in practice. BT argued that, even to the extent that some adjustment should be made, Ofcom had made an error in its calculation, and the adjustment was excessive in comparison to the revenue. BT stated, “this is because Ofcom has misinterpreted balance sheet data supplied by BT and has inadvertently removed all current assets in making the payment terms adjustment”.¹⁴⁵¹

19.187 BT said that “based on adjusted revenues of £753m, BT’s RFS incorporate notional debtors based on the 33 days assumption, giving a figure of around £68m

¹⁴⁴⁷ See BT non-confidential response to the LLCC Consultation, paragraph 7, page 5.

¹⁴⁴⁸ See BT non-confidential response to the LLCC Consultation, paragraph 8.a, page 6.

¹⁴⁴⁹ See BT non-confidential response to the LLCC Consultation, page 15.

¹⁴⁵⁰ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.62.

¹⁴⁵¹ See BT non-confidential response to the LLCC Consultation, paragraph 11.b, page 8.

(£753m*33/365). Using Ofcom's alternative figure of 16 days (assuming all revenue is rental), notional debtors will reduce by around £35m (£68m – £753m*16/365). Instead, Ofcom has adjusted notional debtors by £148m, significantly more than the maximum figure of £35m that would be expected based on the methodology described by Ofcom". BT also said that "the figure for this adjustment to the TI basket is also inconsistent with the AI adjustment, where a revenue of £535m required and adjustment of £21m".¹⁴⁵²

Our response and conclusions

Recalculating holding gains/losses

19.188 We have not received any responses on our proposed approach and have concluded that the methodology proposed is appropriate. Namely, we are making two adjustments to the total holding gains/losses:

- we excluded other holding gains/losses - this was to ensure that our own asset valuation was consistent with the holding gains/losses we proposed to allow; and
- we only took into consideration the effect of cost inflation - To do this, we re-calculated the effect of cost inflation based on the historical five year average in the trend of real asset price changes as a proxy for future asset price changes.

Regulatory Asset Value of access duct (RAV)

19.189 We have reviewed our approach to the RAV adjustment following the consultation. We conclude that it is appropriate to adjust the value of BT's duct to avoid BT earning an excessive return on pre-1997 duct.

19.190 We consider that it is justified to apply the RAV adjustment to both copper and fibre, given that both use pre 1997 access duct. Our reasons for extending the RAV to fibre based services were given in the LLCC consultation (paragraphs 6.133 -6.136). We said that we consider that some of the arguments from LLCC 2009 (where we did not apply the RAV to fibre) no longer hold. Notably, fibre uses some of the pre 1997 as well as post 1997 duct. We therefore consider that it is appropriate to apply the RAV adjustment to the proportion of access duct allocated to both copper and fibre services.

19.191 For clarity we divide our approach to the RAV adjustment into two parts:

- first, the adjustment to pre 1997 assets (as per the 2005 Copper Statement); and
- second, the adjustment to post 1997 assets (as per the LLU/WLR March 2012 Statement).

19.192 The adjustment to pre 1997 access duct assets is made in accordance with the 2005 Copper Statement. In the LLCC Consultation, we applied the RAV adjustment to around 10% of duct.¹⁴⁵³

19.193 In the response to the consultation, BT provided a different set of data that broke down the percentage of duct allocated to TI further into amount of duct used by

¹⁴⁵² See BT confidential response to the LLCC Consultation, paragraphs 10-12, page 16-17.

¹⁴⁵³ LLCC Consultation paragraph 5.124.

local ends, main links and trunk. Our intention has been to apply the RAV adjustment only to access duct, consistent with the 2005 Statement. The RAV adjustment should therefore only be applied to the percentage of pre 1997 duct that relates to local ends. According to the latest BT data the relevant percentage in relation to both copper and fibre local ends is 1.8%.¹⁴⁵⁴

19.194 We have adjusted post-1997 duct value from the absolute valuation to the amended CCA value based on indexed capital expenditure consistent with the WLR LLU CC. This adjustment applies to all duct allocated to TI, which was previously 10% and is around 8% in 2011/12.¹⁴⁵⁵

19.195 The effect is a reduction in the RAV adjustment. The RAV adjustment for TI at the consultation stage consisted of £179m of MCE and £14m depreciation adjustment in 2010/11. The RAV adjustment calculated for 2011/12 reduces MCE by £27m and depreciation by £2m.

Removal of 21CN costs

19.196 We considered BT's response that said that if we remove 21CN costs from our modelling, we should allow replacement costs to support the TI network, e.g. by adjusting the NRC/GRC ratio to extend the asset life for the existing network. We note that although TI services are in decline, there is no closure date for the SDH network. With the exception of sub 2Mbit/s services, TI products continue to be available for new supply, and we forecast small numbers of new TI connections to continue throughout the charge control period.

19.197 The TI network is heavily depreciated. In order to maintain TI services for the remaining customer base, BT will need to make some investment to keep the network operational. In some cases, some of these investments are in the 21CN network, where some TI core traffic will be routed.

19.198 BT allocates 21CN costs to TI on a future benefit basis and it is this amount of costs and MCE that we previously removed from the base year data. We consider that BT needs to make some investment to maintain TI services and some of this investment will be 21CN. We therefore asked BT to estimate 21CN costs that are currently being used to carry TI network traffic. BT estimated that [~~X~~] of 21CN costs allocated to TI markets is used to carry TI network traffic. Therefore, we are still making an adjustment to take out 21CN costs allocated on a future benefit basis, but the adjustment is now [~~X~~] % of the original adjustment.

19.199 As the TI network is heavily depreciated, we also considered uplifting the Net Replacement Cost/Gross Replacement Cost ratio to reflect a hypothetical ongoing network. However, we concluded that the uplift would overstate the cost of running the network. [~~X~~].¹⁴⁵⁶ We consider that it is sufficient to allow the amount of 21CN costs that BT currently uses to repair the TI network.

19.200 Therefore, we will continue to remove 21CN costs and MCE from TI services modelling. However, we allow the relatively small percentage of these costs that are used for delivering TI services.

¹⁴⁵⁴ BT's response to S135 response dated 19 October 2012.

¹⁴⁵⁵ From BT's RAV model.

¹⁴⁵⁶ BT presentation dated 19 October 2011.

Payment terms

- 19.201 We recognise the point that BT raised in their response that the actual payment terms may be different from contractual payment terms. BT's accounts include a notional number for debtors that we are adjusting to a number that reflects the cost of BT financing the payment terms that it offers. We would expect the actual debtor numbers to be close to the payment terms offered.
- 19.202 Since the consultation, BT provided us with further data on reported debtors and creditors and clarified the previous data supplied. Previously we removed all internal and external debtors and added a recalculated value for debtors based on revenue. In fact, it appears that all notional debtors are recorded in the 'internal debtors' category in BT's systems. External debtors include a number of other items, such as short term investments and cash. Similar items are also included in trade creditors.
- 19.203 We therefore now make an amended adjustment. We still take out notional debtors (which are recorded as internal debtors) and recalculate actual debtors based on the payment terms and revenues. We no longer remove external debtors as they do not correspond to notional debtors. This makes the adjustment significantly smaller than in the consultation (£30m compared to £148m in the consultation)
- 19.204 We separately make an adjustment for cash, short-term investments and short-term borrowings, as reported in the external debtors and creditors categories. This is a small adjustment as many of the items cancel out.

Impact of adjustments to the TI basket in 2011/12

- 19.205 The overall effect of our proposed adjustments has increased the TI basket return on capital employed (ROCE) from 21.0%, as reported in the 2011/12 RFS, to 23.1%. The detailed impact of adjustments in 2011/12 based on the updated base year and calculated as explained above is summarised in the figure below.

Figure 19.5 Impact of adjustments on the TI basket¹⁴⁵⁷

Adjustment	Revenues (£m)	Operating costs (£m)	Capital costs ¹⁴⁵⁸ (£m)	Mean capital employed (£m)	ROCE (%)
RFS 2011/12	738	278	201	1231	21.0%
All TISBO and TI trunk markets					
Ancillary services					
Points of handover ¹⁴⁵⁹	-6	-4	-3	-11	
Resilience circuits, separation & diversity, ECCs and third party infrastructure costs	-32	-3	-35	-59	
Additional protected paths costs	-	-1	-1	-4	
Additional separation & diversity costs	-	-2	-1	-5	
Exclusion of ECC assets ¹⁴⁶⁰	-5	n.a.	n.a.	n.a.	
TISBO and TI trunk core services	695	269	162	1,152	23.0%
SDSL	-8	-1	-1	-4	
TISBO and TI trunk core services excluding SDSL	687	268	160	1,147	22.5%
Geographic disaggregation					
Exclude services delivered within the WECLA	-25	-5	-4	-43	
TISBO and TI trunk core services outside the WECLA	662	263	156	1,104	21.9%
Ofcom cost adjustments					
Current cost normalisation	-	-	13	-	
Exclusion of 21CN costs	-	-0	-14	-42	
Payment terms	-	-	-	-30	
Regulatory asset value (RAV) adjustment to duct assets	-	-	-2	-25	
Total TI basket in 2011/12	662	263	153	1,007	23.1%

Source: Ofcom modelling.

Starting charge adjustments

The LLCC Consultation proposals

19.206 Prior to starting a new charge control, we consider whether prices are significantly out of line with costs and, if so, whether a one-off adjustment is appropriate. To inform this assessment, we typically compare the charges to cost orientation

¹⁴⁵⁷ Please note that numbers have been rounded. Furthermore there are differences between the size of adjustments presented in the table and the size of the adjustment discussed in the section due to the geographic disaggregation and the scope of the basket that reduce the size of the initial adjustment.

¹⁴⁵⁸ Capital costs include depreciation and holding losses (gains).

¹⁴⁵⁹ The amount of POH costs excluded from the TI basket is equal to the amount of POH revenues, as POH charges are assumed to be set at the LRIC level.

¹⁴⁶⁰ The adjustment for ECC relates only to Revenues as BT submitted costs data that do not include ECC costs.

benchmarks (i.e. DRLIC and DSAC), as this would provide an indication of whether charges are likely to give rise to distortions in competition.

19.207 We calculated DLRIC floors and DSAC ceilings for our base year and extrapolated these costs measures forward on the basis that they would move in line with FAC. In the LLCC Consultation, our model predicted that, in 2012/13, none of BT's charges would exceed the DSAC ceiling. However, a number of charges were predicted to fall below the DLRIC floor.¹⁴⁶¹

19.208 If prices of individual services are out of line with costs they could give rise to distortions to competition. However, we did not identify any distortions to competition which could arise from these specific services. The main distortion which could arise from low pricing is that it would deter efficient entry. However, given the decline in the TI market, and the lack of ongoing availability of TI equipment, we considered that such entry would be unlikely in any case.

19.209 As noted in Annex 5 of the LLCC Consultation, we reviewed BT Wholesale's charging structure. Based on our assessment of the level of charges and the charging structure, we did not believe there was sufficient evidence to make one-off adjustments to the prices charged by BT Wholesale (also see Annex 5 of the LLCC Consultation).

Consultation responses

19.210 We received no stakeholder responses on our proposals of not making any starting charge adjustments to TI services.

Our response and conclusions

19.211 We have updated our analysis with the 2011/12 base year data, to see if any charges fall outside the DSAC and DLRIC cost orientation benchmarks. The model has shown eight charges to be below DLRIC in 2012/13: PPC 140/155Mbit/s connection, PPC 64Kb/s connection, RBS sub 2Mb/s connection, PPC 2Mbit/s connection, PPC 140/155Mbit/s distribution, PPC CELA 140/155Mbit/s trunk, PPC non-CELA 140/155Mbit/s trunk, and PPC 622Mbit/s trunk. Revenues are below £1m for PPC 64Kb/s connections, PPC 140/155Mb/s connections and RBS sub 2Mb/s connections in the 2011/12 RFS and we do not expect them to increase in the future.

19.212 We have considered the outputs of this analysis and what implications this had both for competition and the charge control. However, having considered this we did not identify any distortions to competition which could arise from these specific services. The main distortion which could arise from low pricing is that it would deter efficient entry. However, given the decline in the TI market we considered that the likelihood of such entry was low. We are not therefore making start charge adjustments to these services.

19.213 We note that all other reported charges for TI services are below DSAC in the first year of the control.

¹⁴⁶¹ For example: PPC 64kbit/s Trunk, PPC 64kbit/s Connection, PPC 64kbit/s Link, PPC 64kbit/s Distribution, PPC 2Mbit/s Connection, RBS Sub 2Mbit/s Connection, RBS 2Mbit/s Connection, PPC 34/45Mbit/s Connection, PPC 34/45Mbit/s Local end, PPC 140/155Mbit/s Distribution, PPC 622Mbit/s Trunk.

Forecasting costs to 2015/16

19.214 Following the calculation of base year costs, we forecast the evolution of costs and revenues to the end of the charge control period. In this section, we explain our key forecasting assumptions. Specifically, we describe our approach to:

- volume forecasts;
- efficiency assumptions;
- WACC;
- cost volume relationships;
- asset price changes; and
- reallocation of costs from the TI basket to the Ethernet basket.

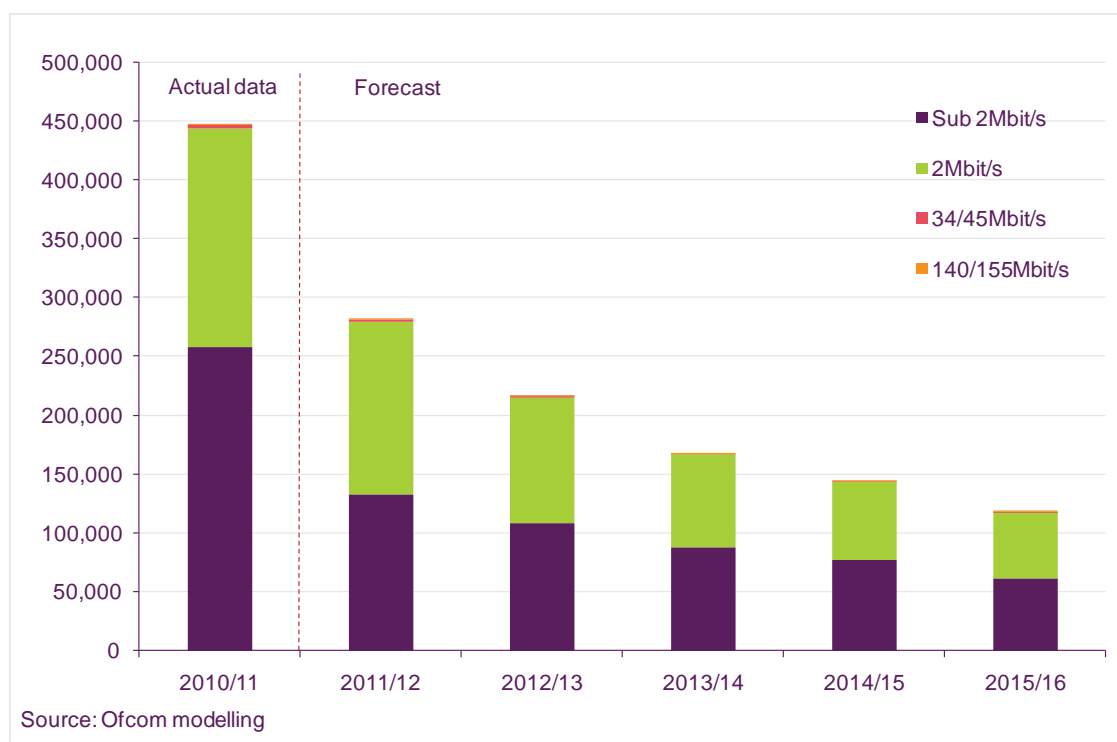
TI volume forecasts

The LLCC Consultation proposals

19.215 The LLCC Consultation proposals took into account multiple TI volume forecasts. We received volume forecasts for TI services from various sources, including BT Wholesale and other CPs.

19.216 We found that the trends shown in the forecasts appeared to be reasonable and broadly consistent across the different sources. We therefore proposed to take into account all of the volume forecasts received to arrive at our base case for our cost modelling, conducting sensitivity testing where appropriate.

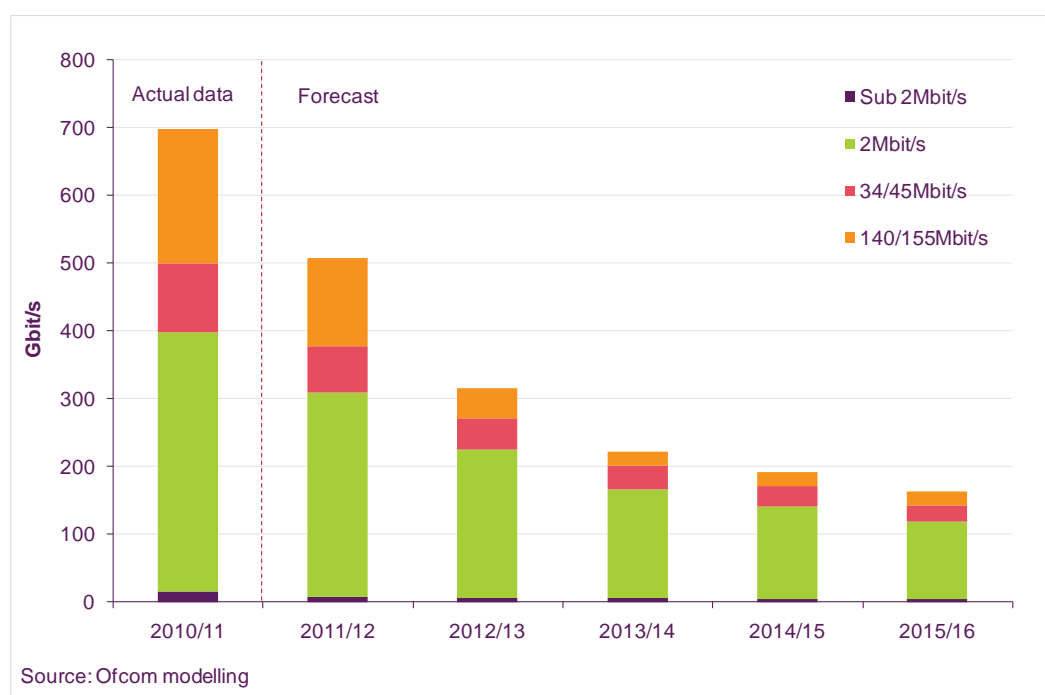
19.217 We forecast that, by the end of the charge control, the total number of TI circuits would decline by over 70% compared to 2010/11 volumes, equivalent to a decline of around 20% per annum, as shown below.

Figure 19.6 Ofcom forecast of TI services to 2015/16 (number of circuits)

19.218 Our modelling indicated that the main driver of the declining volumes in the TI market was the increasing demand for higher bandwidth services which, in general, can be delivered more efficiently using Ethernet services as well as potentially via high speed broadband services such as Next Generation Access (NGA), Ethernet and VPNs. As a consequence, we expected migration from TI to higher bandwidth services delivered using Ethernet and other technologies. The Ethernet forecasts supported this view of growth in high bandwidth services.

19.219 We considered it likely that a residual customer base would remain on TI services over the charge control period due to characteristics which could not be replicated using Ethernet services. However, we noted that the disincentive to migrate from TI services was likely to reduce when Openreach introduced its synchronous Ethernet service.

19.220 We also used our volume forecasts to derive a view of the capacity that BT would be delivering over TI services. By multiplying the circuit volumes by the relevant bandwidths, we forecast that the capacity delivered over the TI network would decline rapidly from 2010/11 to 2013/14, but more slowly thereafter. This is shown in Figure 19.7 below. In 2015/16, TI capacity was estimated to be less than 30% of capacity in 2010/11.

Figure 19.7 Ofcom's forecast of TI services capacity

Consultation responses

19.221 Aside from the new volume forecasts which we discuss below, we also received responses from CWW and Virgin on our proposal to take into account multiple TI volume forecasts in arriving at our base case. CWW and Virgin were both concerned that Ofcom's volume forecasts had overstated the decline in TI circuits.

19.222 CWW expected the 2Mbit/s services to decline by about 40%, rather than the 54% predicted in the LLCC Consultation. Whilst it acknowledged that its demand profile may not match BT's, it was surprised by the scale of the difference, given that CWW are BT's biggest external customer of PPC. CWW also argued that, by "the fact that sub-2Mbit/s services are being withdrawn in 2018 will mean some of the customers using them will in fact switch to 2Mbit/s" because their particular requirements will mean that they will not have any realistic alternatives.¹⁴⁶²

19.223 Virgin argued that Ofcom's forecast of a decline in TI circuits from c.450,000 circuits in 2010/11 to c.120,000 in 2015/16 (a CAGR of about -25%) was not supported by the volumes disclosed in BT's RFS for 2011/12. In particular, Virgin argued that the actual reduction in TI volumes was 10% between 2010/11 and 2011/12 compared to Ofcom's forecast of a 27% reduction over the same period. In light of the 2011/12 RFS data, Virgin urged Ofcom to take a more cautious approach to the assessment of volume trends in this control. Virgin argued that it is particularly important to ensure that forecasting remains realistic when the base year actuals (2010/11) require two additional years of forecasting before the start of the control period (2013/14) because any errors will be compounded.¹⁴⁶³

¹⁴⁶² See CWW response to the LLCC Consultation, paragraphs 15.10-15.11.

¹⁴⁶³ See Virgin non-confidential response to the LLCC Consultation, pages 29-31, 33-34.

19.224 Virgin also noted that in spite of cautions from stakeholders about the level of the forecast migration away from TI in the 2009 LLCC, the 2009 LLCC forecast overstated the reduction in the number of TI circuits.¹⁴⁶⁴

Our response and conclusions

19.225 Following the consultation, we have been able to compare our forecast for 2011/12, as reported in the LLCC Consultation, with the actual outturn. We have also received updated volume forecasts for TI services from BT Wholesale, other CPs and industry analysts. We have analysed all these sources when arriving at our decision on volume forecasts.

19.226 First, we compared our forecast for 2011/12 with the outturn. In the LLCC Consultation, we forecast a sharp decline in TI volumes in 2011/12. This forecast decline has largely been realised, although the actual decline was slightly less than predicted (a 24% decline as opposed to the 27.5% forecast).¹⁴⁶⁵ We note that this decline is larger than that stated by Virgin. We note that for 2011/12 [X] had forecast a faster rate of decline than the outturn and, in contrast, that [X] and an industry analyst had forecast a slower rate of decline.

19.227 Second, since the LLCC Consultation, both BT and CPs have provided new forecasts. We noted that BT forecast a faster decline than the rate we had forecast in the LLCC Consultation. [X].

19.228 By contrast, CPs and an industry analyst forecast a lower rate of decline for subsequent years than we had forecast in the LLCC Consultation.

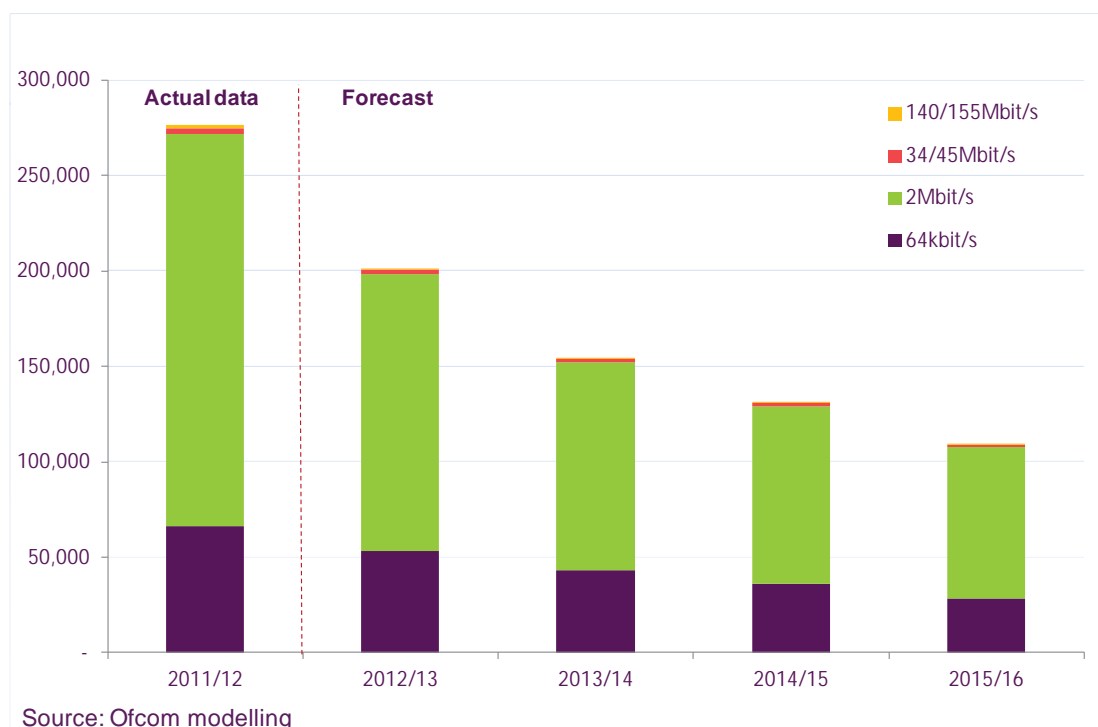
19.229 We have examined BT's explanations for its forecast of a faster decline in TI services. [X]. We therefore consider that we do not have clear evidence to support BT's expectation that the decline will be faster than in the LLCC Consultation.

19.230 Our analysis of 2011/12 data, shows that our forecast of a sharp fall in 2011/12 was in line with the outturn. This gives us confidence in our previous forecasts. We also note that although other CPs and an industry analyst forecast a slower rate of decline for the charge control period, they also underestimated the actual rate of decline in 2011/12. Furthermore, we note that BT overestimated the rate of decline in 2011/12 and yet its new forecasts assume an even faster rate of decline.

19.231 Given the relative accuracy of our 2011/12 forecasts and the differences in forecasts between stakeholders, we have decided to continue with our previous forecast rates of volume decline. We have therefore adapted the LLCC Consultation forecasts to the new base year and kept the same rate of change for each circuit type as was previously forecast in the consultation. As a result, there is a marginally higher volume of TI circuits in 2015/16 than in the LLCC Consultation. This is consistent with the lower actual decline observed in 2011/12. Figure 19.8 below shows our forecast of TI local end volumes from 2011/12 to 2015/16, split out by bandwidth.

¹⁴⁶⁴ Virgin's analysis indicates that the actual CAGR over the 2009 LLCC forecasting period was -13% compared to the Ofcom's forecast CAGR of -20%.

¹⁴⁶⁵ BT Wholesale data submitted in response to S135 notice on 4 October 2012

Figure 19.8 Ofcom forecast of TI services to 2015/16 (number of local ends)

19.232 For a detailed description of our analysis of volume forecasts for TI services, please see Annex 12.

Efficiency assumption

The LLCC Consultation proposals

19.233 Our proposed efficiency assumption was based on several sources of analysis that assessed what BT might realistically be able to achieve in terms of reducing its costs over the period of the charge control.

19.234 The efficiency rate used in the calculation of the value of X is the expected year-on-year savings in real unit operating costs that BT is expected to achieve in the normal course of its operations, abstracting from volume and input price changes. It is possible to apply this efficiency assumption to both new capital expenditure and operating costs.

19.235 In our modelling of TI services, we applied the assumption only to operating costs for three main reasons:

- in our model we have taken into account asset price changes, as these are negative in real terms, this is equivalent to a capex efficiency assumption;
- the forecast decline in volumes for TI services meant it was unlikely there would be significant new capital expenditure, meaning that any potential efficiencies in procurement and investment would be less relevant; and
- the other consequence of falling volumes would be the associated negative capital expenditure (capex), which essentially consists of asset disposals. An efficient operator would be expected to dispose of its unused assets in an

efficient manner. Given the type of assets employed in the TI market, it is unlikely that even an efficient operator could command a high price for its unused assets. We therefore set the forecast year-on-year efficiency gain for capex at zero and focused on operating costs.

19.236 We considered a range of indicators to estimate the efficiency improvement that could reasonably be expected from BT. These can be categorised into three broad headings:

- TI-specific historical trends;
- internal efficiency targets; and
- external benchmarking studies.

19.237 These indicators are summarised in Figure 19.9 below, including two sets of external benchmarking studies. Our analysis of this evidence was described in more detail in Annex 5 of the LLCC Consultation.

Figure 19.9 Evidence on TI efficiency assumption

	TI specific historical trend analysis	BTW internal efficiency targets	2012 Deloitte Study ¹⁴⁶⁶	Statistical analysis (NERA, Deloitte) ^{1467/1468}
Efficiency (%)	~1.5%	[3%]	2.25%	~2%
Comments	Ofcom analysis of BTW's historical TI cost data	Relates only to SG&A costs, which account for only a small proportion of total BT Wholesale costs	Benchmark against five other European operators	Benchmark against US LECs

19.238 To arrive at an appropriate range of efficiency savings we considered that most weight should be placed on the sources of evidence which are specific to the TI market, i.e. the historical trend analysis. Our historical trend analysis suggested that a range of 1% to 2% would be appropriate to use in the sensitivity analysis of our modelling.

19.239 We also considered BT's internal planning documents, but these are based primarily on selling, general & administrative (SG&A) costs only.¹⁴⁶⁹ We believed that this did not cover a sufficiently wide range of BT Wholesale's activities for it to be extrapolated and applied to BT Wholesale's provision of TI services. Therefore, we chose not to place significant weight on this source relative to the historical trend analysis.

19.240 The benchmarking studies conducted by Deloitte and NERA were not specific to the TI market. Therefore we also placed relatively less weight on these results compared to the TI-specific analysis of historical data.

¹⁴⁶⁶ Deloitte, 'Analysis of the Efficiency of BT's Regulated Operations', A report for BT, dated 16 February 2012.

¹⁴⁶⁷ NERA, 17 March 2008, The comparative efficiency of BT Openreach.
<http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/annexes/efficiency.pdf>

¹⁴⁶⁸ Deloitte, 29 March 2011, 'WBA consultation response'
<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/BT2.pdf>

¹⁴⁶⁹ BT Group response to S135 Notice of 1 July 2011.

19.241 Given the various sources of evidence and the respective weights we decided to place on each source, we suggested an appropriate efficiency range for BT Wholesale's provision of TI services was 0-3%. We noted that this range may be considered a relatively low target for efficiency improvements compared to those used in other charge controls on BT. However, TI services are mature and declining and we believed that there is no reason that would justify making a stronger efficiency assumption.

Consultation responses

19.242 Two stakeholders responded on our efficiency assessment for TI services. In general terms, both respondents agreed with our proposals regarding the interval for operating cost efficiencies, however, issues were raised.

19.243 Telefónica UK did not agree that 0% should be set as the low end of efficiency gains for the TI basket. It argued that despite the maturity of the market and migration to Ethernet, "in a competitive market there would remain incentives on BT to improve efficiency (...)". It said that the low end of the efficiency range should at least reflect the low end of the historical trend analysis at around 1% to 2%".¹⁴⁷⁰

19.244 BT said that the efficiency target reflects past efficiency improvements, and does not take into account the increasing difficulty to achieve further efficiency gains with old technology assets. It argued that we should make a downward adjustment to the efficiency target to reflect this "if assets are to be valued using an anchor pricing basis".¹⁴⁷¹

Our response and conclusions

19.245 In response to stakeholders' comments, we consider that our initial assessment does in effect take account of the concerns raised. This is discussed in more detail in Annex 12.

19.246 Telefónica UK suggested that the low end of the range should have reflected the low end of the historical trend. The range reported for the historical trend is fully captured within our consulted range of 0%-3%. Although its argument that an efficiency incentive should remain in a competitive market has merit, the purpose of our consultation range is to allow sufficient, but bounded, flexibility. We note that Telefónica UK did not suggest the level at which the efficiency target should be set.

19.247 As reflected in our final decision of a 1.5% per annum efficiency, we agree that there remains scope for BT Wholesale to continue to drive out operating inefficiencies. However, the final efficiency assumption reflects the declining market conditions as it is set at a level lower than in other charge controls, hence addressing BT's concerns about the difficulty in continued efficiency savings.

19.248 We have decided to apply an efficiency assumption of 1.5% on BT Wholesale's operating costs. We consider that this reflects that there is still some scope for BT Wholesale to reduce operating inefficiency, but less than in other services due to the declining nature of the service. This level of efficiency is also consistent with our analysis of past efficiency savings by BT Wholesale.

¹⁴⁷⁰ See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 149, page 44.

¹⁴⁷¹ See BT non-confidential response to the LLCC Consultation, page 43.

WACC

The LLCC Consultation proposals

19.249 In Section 4 of the LLCC Consultation we discussed our view that leased lines services should not be classified within BT's access network for the purposes of an assessment of risk levels. Since these services are mostly bought by SME and corporate customers of BT, future demand for these services, particularly in the case of the demand for new circuits, is likely to be more closely correlated with the economy-wide level of economic activity than other access services.

19.250 In the LLCC Consultation we explained how our proposals were consistent with other recent decisions relating to BT's cost of capital, particularly in the WBA CC and the WLR LLU CC.

19.251 We estimated the WACC for Openreach, BT Group and the Rest of BT, respectively, in detail in the WBA CC in July 2011.¹⁴⁷² In that Statement, we explained that we intended to use the WACC figures estimated in the WBA Statement for future relevant charge controls, provided that the estimates remain relevant. We noted that consistency is important, but that this needs to be balanced against the possible need for updating those cost of capital estimates.

19.252 In the subsequent WLR LLU CC Statement (which we published in March 2012) we considered whether our estimate of BT's cost of capital in the WBA CC remained appropriate.¹⁴⁷³ We reviewed the most recent evidence on the individual parameters to ensure that the estimates remained relevant, and we concluded that they were appropriate.

19.253 In the LLCC Consultation we also took the view that the cost of capital estimated in the WBA CC remained appropriate for the LLCC, without the need to update the estimates. This is because the updated analysis performed in the WLR LLU CC was carried out very recently. As noted above, we found that the cost of capital estimated in the WBA CC remained appropriate and we did not identify any reasons for a need to undertake additional analysis. In reaching this view, we also took account of the CC's recent Determination in respect of BT's appeal against our decisions in the WBA CC concerning the cost of capital.¹⁴⁷⁴

19.254 We therefore proposed to use a pre-tax real cost of capital estimate for the 'Rest of BT' of 6.5%.

19.255 However, we also stated that we intended to consider any movements in the cost of capital parameters prior to reaching a decision in order to ensure that the estimate of the WACC remained appropriate. We said that, if the relevant parameters had changed materially, we would consider whether a change to our cost of capital estimates would be appropriate.

¹⁴⁷² The cost of capital estimated in the WBA Statement was appealed by BT. This appeal has recently been concluded and the CAT upheld Ofcom's estimate for the purposes of that Statement. Full details are available at: <http://www.catribunal.org.uk/237-7278/1187-3-3-11-British-Telecommunications-plc-Wholesale-Broadband-Access-Charge-Control.html>

¹⁴⁷³ See paragraphs A8.15 to A8.47 of the WLR LLU CC Statement.

¹⁴⁷⁴ See <http://www.catribunal.org.uk/237-7278/1187-3-3-11-British-Telecommunications-plc-Wholesale-Broadband-Access-Charge-Control.html>

19.256 Further details on our proposed approach were included in Annex 7 of our Consultation document.

Consultation responses

19.257 We received three stakeholder responses on our proposal to use a pre-tax real cost of capital estimate for the 'Rest of BT' of 6.5%. All respondents raised issues on the approach to setting BT's cost of capital.

19.258 UKCTA said that we "should ensure that the approach to setting the cost of capital for access to bottleneck telecommunications assets, relative to other regulated sectors, reflected the degree of protection afforded to BT in relation to the impact of fast-changing technology on legacy asset values. In particular this should reflect the use of delay in moving from an anchor pricing method to an MEA method to ensure that BT has the opportunity to recover investments in the new services; the glide path (...); and the recovery of any holding losses experienced on legacy assets (...)"¹⁴⁷⁵

19.259 BT supported with our proposal to use the 'Rest of BT' WACC rather than the disaggregated WACC for the copper access business.¹⁴⁷⁶ However, it did not agree that we should continue to rely on the assessments made in July 2011 to estimate the value of the 'Rest of BT' WACC. BT argued that Ofcom should fully review all parameters based on the latest available information. We summarise BT's response in more detail in the Annex 14.

19.260 TalkTalk argued against using the 'Rest of BT' figure and we summarise its response in more detail in the Annex 14.¹⁴⁷⁷

Our response and conclusions

19.261 As set out in Annex 14, we have estimated the pre-tax real cost of capital for the Rest of BT to be used in these charge controls to be 7.0%.

Cost volume relationships

The LLCC Consultation proposals

19.262 The impact that forecast changes in volumes have on forecast costs in our model (before efficiency improvements are taken into account) is determined by AVEs and CVEs. We proposed to make certain adjustments to BT Wholesale's cost volume relationships.

19.263 In the LLCC Consultation we explained that we had a number of options to choose from when deciding on which values to use for the AVEs and CVEs, both for TI services and Ethernet services. We proposed adopting Option 4, for the reasons and with the adjustments set out below:

- **Option 1** involved using the AVEs and CVEs from the LLCC 2009;

¹⁴⁷⁵ See UKCTA response to the LLCC Consultation, page 24.

¹⁴⁷⁶ See BT non-confidential response to the LLCC Consultation, page 49.

¹⁴⁷⁷ See TalkTalk non-confidential response to the LLCC Consultation, page 46.

- **Option 2** involved basing the AVE and CVE estimates on an analysis of how actual costs have changed in the recent past as volumes of TI and Ethernet services have changed;
- **Option 3** involved using AVEs and CVEs received from BT in response to a formal information request. Both BT Wholesale and Openreach submitted data based on BT's 'LRIC model'. BT Wholesale also provided 'End of life' AVEs and CVEs; and
- **Option 4** involved assessment of BT submissions under Option 3 and making certain adjustments.

19.264 In relation to Option 1, we considered that it would not be appropriate to use the AVEs and CVEs from the LLCC 2009 because they were based on a top-down model of BT's costs that formed part of the 1997 Network Charge Controls.¹⁴⁷⁸ We considered that we could no longer rely on these estimates, since they were calculated over ten years ago and it was likely that the relationship between costs and volumes would have changed since then.

19.265 In relation to Option 2, we found that estimates of how actual costs have changed in the recent past as volumes of TI and Ethernet services were highly dependent on assumptions, such as the extent of efficiency gains made by BT and the allocation of costs across a varying mix of services. Given that the precise values of these assumptions were uncertain and because relatively small variations in the assumptions had a significant impact on how costs were estimated to change with volume, we considered it was not possible to calculate reliable estimates in this way.¹⁴⁷⁹ As such, we did not consider that it was possible to calculate reliable estimates using this method.

19.266 In relation to Option 3, this assumed that we use AVEs and CVEs received from BT.¹⁴⁸⁰ The LRIC produced 'indicative' CVE values derived from a LRIC to FAC analysis. In the data supplied by BT, these indicative CVEs were multiplied by the corresponding AVEs to arrive at a 'true' CVE. BT claimed that it had undertaken this adjustment as many of the pay and non-pay costs were dependent on the asset volume relationships.¹⁴⁸¹ In this sense, operating costs would have been realised according to the assets that were deployed, rather than being solely and directly caused by a change in service volumes. We considered this to be reasonable for many operating costs such as maintenance and power.¹⁴⁸²

19.267 However, we explained that we had a number of issues with adopting the AVE/CVE values submitted for the purposes of forecasting efficient forward-looking costs, which we discuss below. This resulted in our proposing to adopt Option 4, an adjusted version of Option 3.

¹⁴⁷⁸ http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/pricing/nccjul97.htm

¹⁴⁷⁹ For instance, for TI services, varying the efficiency assumption from 1% to 2% changes the implied weighted average CVE from 0.08 to 0.58.

¹⁴⁸⁰ Both BT Wholesale and Openreach submitted data based on BT's 'LRIC model'. BT Wholesale also provided 'End of life' AVEs and CVEs.

¹⁴⁸¹ Openreach response to S135 Notice of 4 April 2012. [3<]

¹⁴⁸² We noted that this was also consistent with the explanation provided by BT Wholesale on how it calculated geographically disaggregated costs for the WECLA and the rest of the UK. BT Wholesale submitted cost data that varies by the volume of equipment in a local exchange, rather than directly varying with service volumes.

LRIC versus DLRIC estimates

19.268 BT had initially submitted AVEs and CVEs based on DLRIC, rather than LRIC. The DLRIC measure includes an allocation of fixed and common costs which are not variable and therefore leads to an over-estimate of costs. We requested that BT submit these values based on LRIC, rather than DLRIC. The LRIC values were used in the LLCC Consultation.

The inclusion of fixed costs

19.269 The LRIC of a product or service may include some fixed costs incurred in its provision.¹⁴⁸³ If only modest volumes changes are predicted, then a LRIC to FAC ratio may overstate the true AVE and CVE. However, given that we forecast significant volume changes in the leased lines markets, we considered that a ratio of LRIC to FAC may not be an unreasonable approximation.

19.270 In relation to operating costs, the multiplication of AVEs by CVEs, alleviated some of our concerns over the inclusion of fixed costs because operating costs would only change when there are underlying changes in fixed assets. However, we did not think this was appropriate for all cost categories. In particular, we were concerned about the cost category 'General Management and Other'. This category accounted for [X] of total pay operating costs and [X] of total non-pay operating costs. It was also treated as nearly fully variable with volume changes. BT explained that this cost category included a large number of different costs, some of which were variable with output and others which were an allocation of management costs.

19.271 We considered that, as volumes increased, there would be some increase in management costs. We did not believe that the 'General Management and Other' category would be expected to vary to the same extent as other operating costs (e.g. maintenance).

19.272 Based on our analysis of the data available on the level of such shared costs within BT's data, and taking into account the limited impact of such an adjustment within the charge control, we proposed that it is appropriate to make an adjustment of 10% to reduce BT's CVEs in the categories of General Management and in respect of those overhead costs not linked to specific assets, including administration costs.

Weighting of component CVEs by means of an arithmetic average

19.273 BT calculated its LRIC to FAC ratios on a component by component basis. To arrive at its overall CVEs it calculated a simple average across all components, rather than a weighted average.

19.274 We had some concerns about the use of the simple average and believed that it may result in inputs to our charge control model that were not consistent with the way the CVEs were derived.

19.275 Since our model was based on largely the same set of components as the ones BT provided, we believed it was more appropriate to use the unweighted component values for each of the identified components, rather than using the simple average for all components. We believed this was appropriate as the volume changes across

¹⁴⁸³ In the long run, on which LRIC is based by definition, all costs are variable. However, LRIC will include some costs that are fixed in the short run.

these components were not homogeneous and that the CVE values were used in a way that was consistent with their derivation.

'End of life' AVEs and CVEs

19.276 BT Wholesale also calculated an 'end of life' view of AVEs and CVEs. These reflect the different relationships between costs and volumes when there are reductions in volumes, as opposed to when there are increases.

19.277 For instance, BT Wholesale argued that the need to continue supporting the PPC platform while volumes decline meant that some costs were "sticky downwards", so that a lower AVE/CVE was more appropriate compared to one estimated by its LRIC model, e.g. the AVEs on Transmission and Other Network Equipment and the CVEs on Finance & Billing and Accommodation). In contrast, it also believed that some assets could be re-used by other services as PPC volumes decline, so that a higher AVE/CVE might be applicable to reflect this (e.g. the AVEs on Cable and Duct and the CVEs on General Support and Provision & Installation)¹⁴⁸⁴.

19.278 Whilst we believed there might be some merit in the views put forward, we did not think that they were applicable in general. We expected the greater 'lumpiness' reflected in the 'end of life' values (as costs would be forecast to decline relatively more slowly as volumes fall) would be smoothed out over the longer term. We also thought that the binary nature of several of the 'end of life' values (such as the AVEs for Transmission and Other Intangibles) appeared to be an extreme approximation of the potential cost-volume relationships and do not appeared to have been subject to the same level of derivation as the 'LRIC model' values that BT has submitted.

19.279 BT Wholesale also suggested that the CVE on Accommodation for DPCN equipment should be zero, as the volume of DPCN equipment and its footprint within exchanges was unchanged in the past four years, despite falls in the volume of sub-2Mbit/s circuits¹⁴⁸⁵. However, the volumes of sub-2Mbit/s circuits had only declined slightly over this time period¹⁴⁸⁶. Given the relatively small change in volumes, we did not believe that a lack of change in accommodation costs provides strong evidence of costs being particularly sticky downwards.

19.280 For these reasons, we considered that it would not be appropriate to apply the 'end of life' values to our modelling of TI services.

19.281 We also noted that our proposed reallocation of costs from the TI basket to the Ethernet basket reflected the potential for the rising volume of Ethernet service to use assets that are no longer used by the falling volumes of TI services.

19.282 In relation to Option 4, we considered that the estimates contained in the submissions from BT Wholesale and Openreach had the advantage that they were based on up-to-date information that was consistent with BT's cost allocation system and the way FACs for each service were determined.

19.283 We therefore proposed to adopt Option 4 and make the following adjustments:

¹⁴⁸⁴ BT Wholesale response to S135 Notice of 21 May 2012.~~[X]~~

¹⁴⁸⁵ BT Wholesale response to S135 Notice of 21 May 2012.~~[X]~~

¹⁴⁸⁶ BT Wholesale response to S135 Notice of 21 May 2012.~~[X]~~

- apply the individual component-level AVEs and CVEs, rather than using an arithmetic average of each of these values;
- make a reduction of 10% to the submitted CVE for the category of ‘General Management and Other’ and for Admin CVEs.

Consultation responses

19.284 BT was the only stakeholder who commented on our proposal to make certain adjustments to BT’s cost volume relationships. BT’s concerns in relation to access fibre are addressed in Section 20. Below, we summarise BT’s other concerns.

19.285 BT did not believe it is logical to multiply each component’s CVE by AVEs. It did not agree with this approach because the submitted CVEs derived from the LRIC model already incorporate the AVE factor to estimate the correct operating costs and component volumes.¹⁴⁸⁷

19.286 BT felt that we misrepresented BT’s position stating that BT had proposed CVEs be multiplied by AVEs. BT claimed that it replicated what was done in previous charge controls by Ofcom and, on request from Ofcom, also explained how the CVEs were derived.¹⁴⁸⁸

19.287 In further submissions, BT provided details of some CVEs which it stated used the same CVRs as AVEs and BT claimed that if we then adjusted the CVEs by the AVEs, then the same CVR was used twice.¹⁴⁸⁹

19.288 BT did not agree with us on the 10% reduction of the CVE for “General Management and Other” cost category. BT claimed that we had failed to provide sufficient evidence supporting its choice and referred only to “analysis of the data available on the level of such shared costs within BT’s data”. BT also argued that we stated the adjustment’s limited impact. Therefore, BT proposed to remove this adjustment.¹⁴⁹⁰

19.289 BT did not comment on our proposal to apply the individual component-level AVEs and CVEs, rather than using an arithmetic average of each of these values.

Our response and conclusions

19.290 As part of the data BT provided for the purpose of updating the base year of the LLCC model, a new set of AVEs and CVEs were submitted based on BT’s ‘LRIC model’. Figure 19.10 below sets out the new set of AVEs (2011/12) alongside those used in the LLCC Consultation (2010/11).

¹⁴⁸⁷ See BT non-confidential response to the LLCC Consultation, page 45.

¹⁴⁸⁸ See BT non-confidential response to the LLCC Consultation, page 45.

¹⁴⁸⁹ BT Group Wholesale response to S135 Notice of 28 September 2012 [38].

¹⁴⁹⁰ See BT non-confidential response to the LLCC Consultation, page 45.

Figure 19.10: BT's AVE submissions for LLCC Consultation and LLCC Statement

Asset type	2010/11	2011/12
Cable	0.13	0.32
Duct	0.08	0.08
Local Exchange	0.63	0.51
Main Exchange	0.47	0.47
Transmission	0.83	0.83
Other Ntwk Eqpt	0.72	0.92
Motor Transport	0.76	0.65
Land & Bldgs	0.70	0.73
Computers & OM	0.83	0.72
Other	0.72	0.92
Other intangibles	0.72	0.92

Source: BT data submitted in response to s.135 request on 30 August 2011 and 23 October 2012

- 19.291 BT informed us that the new AVE estimates were calculated using a consistent methodology to the one used to estimate the AVEs provided for the LLCC Consultation, with the exception of Cable. BT explained that the Cable AVE is a weighted average of several Cost Volume Relationships (CVRs) and that among these a duct CVR (CV901) was erroneously included to calculate the 2010/11 AVE. BT corrected for this by using a cable CVR (CV002) instead to calculate the 2011/12 Cable AVE.¹⁴⁹¹ This has changed the cable AVE from 0.13 to 0.32.
- 19.292 We have reviewed the latest AVEs and CVEs submitted by BT. We note the error in the previous cable estimate. If this error is excluded, then the changes to the other AVEs are neutral overall on the charge control. We note that some AVEs have risen (e.g. other network equipment), whereas others (e.g. local exchange, motor transport and computers) have fallen. We therefore accept the new AVEs and have used them in the model.
- 19.293 The new AVEs mean that the CVEs also change. The main cost driver for operating costs is changes in the volumes of assets. When deriving its CVEs, BT weights the CVE by the AVEs corresponding to the assets which are operated. This means that accepting the new AVEs results in a change to the CVEs.
- 19.294 We have re-evaluated whether it is appropriate to use the CVEs for operating costs weighted by the AVE used for assets. We agree with BT that if the CVEs submitted already reflected how operating costs change with respect to their cost driver (assets), an adjustment should not be made.
- 19.295 In its response, BT said that it believes that the CVEs derived already include the impact of multiplication of a CVR by an AVE. BT explained that the operating cost CVRs within its LRIC model typically show how operating costs change with, as the volume driver, asset volumes. The LRIC model also contains CVRs for assets which show how asset costs change with component volumes (AVEs). In order to derive a

¹⁴⁹¹ BT response to S135 Notice of 14 February 2013. [8]

relationship between operating costs and component volumes (CVEs), the indicative CVEs were multiplied by AVEs.¹⁴⁹²

19.296 We have re-examined the CVE and AVE data we have received from BT to assess whether the CVEs submitted already reflect how operating costs change with respect to asset costs. On this basis, we take the view that the (unadjusted) CVEs submitted are inconsistent with the cost volume relationships of the assets they use. For instance, we note that in relation to fibre components, BT provided an AVE of [X] and a non-pay CVE of [X].¹⁴⁹³ Consider a stylised example of how the LLCC model applies AVEs and CVEs where:

- asset costs at time t_0 equal 100;
- operating costs at time t_0 also equal 100;
- the change in component volumes between times t_0 and t_1 is +50%;
- asset costs at t_1 are calculated as follows: (asset costs at t_0) x (1 + change in component volumes x AVE); and
- operating costs at t_1 are calculated as follows: (operating costs at t_0) x (1 + change in component volumes x CVE).

19.297 The use of an AVE of [X] would result in asset costs at t_1 being calculated as [X] while a CVE of [X] would result in operating costs at t_1 being calculated as [X]. This example demonstrates that if we were to use the unadjusted CVE, and apply it to component volumes, this would mean that operating costs would increase much faster than the costs of the assets they use.

19.298 This is inconsistent with BT's contention that the cost driver for operating costs is asset volumes. BT has explained that [X].¹⁴⁹⁴ We also note that BT made this adjustment in the CVEs it provided and that BT has always provided CVEs which include this adjustment.

19.299 As a result, in order to reflect how operating costs change with respect to their cost driver (assets), we continue to believe that it is appropriate to use CVEs for operating costs which have been weighted by the AVE used for assets. For the avoidance of doubt, we are not proposing to make any further adjustments to the CVEs provided by BT and did not make any additional adjustments in our modelling for the LLCC Consultation. We will therefore maintain the LLCC Consultation proposal by using CVEs which have been weighted by AVEs.

19.300 In the LLCC Consultation, we noted that some of the CVRs used by BT for general management costs appeared high and proposed an adjustment to mitigate this. These CVRs principally related to operating costs. We have re-evaluated this adjustment.

19.301 We consider that as the CVRs for operating costs are adjusted by the AVEs, the impact of the apparently high CVR for general management is mitigated. That is, the adjustment of the CVEs by the AVEs means that the effective CVR for general

¹⁴⁹² BT non-confidential response to the LLCC Consultation, paragraphs 23 and 24, page 45.

¹⁴⁹³ [X].

¹⁴⁹⁴ [X].

management is much lower than may first appear. We also note that the 10% reduction proposed in the LLCC Consultation had no impact on the X and would continue to have no impact on X in the current control. Given the lack of materiality, and the adjustment of CVEs by AVEs, we have not made a similar adjustment in the final control.

Asset price changes

The LLCC Consultation proposals

19.302 We proposed to use five-year historical average asset price changes. In the LLCC Consultation we noted that asset price changes have offsetting effects on the cost base.

- The first is a holding gain as a result of asset price increases. Such a gain reduces costs in the year that it occurs. The reverse is true for holding losses.
- The second effect is the impact on the real return. An asset price rise increases the value of the asset base, and therefore increases the required return in the cost base. Similarly, a fall in the asset price would reduce the value of the asset base and in turn reduce the cost base to be recovered through the charges in the charge control basket.

19.303 As a result, the impact of real price changes depends on which effect dominates and it is not known a priori whether it will increase or decrease the overall cost base.

19.304 In order to calculate holding gains or losses, we need to make assumptions about how underlying asset prices change over and above underlying inflation. In the model used for our consultation proposals, we took an average of asset price changes over the past five years, as supplied by BT, shown in Figure 19.11 below. We assumed that the real asset price changes apply over the period from 2012/13 to 2015/16.

Figure 19.11 Asset price changes assumed in our cost forecasts¹⁴⁹⁵

Asset	5 year average nominal price change between 2006/07 and 2010/11	Real price change (based on RPI)
Duct	3.6%	0.0%
Local Exchange	-0.1%	-3.6%
Main Exchange	0.0%	-3.4%
Transmission	-0.2%	-3.6%
Other Network Equipment	0.0%	-3.4%
Motor Transport	0.0%	-3.4%
Land & Buildings	0.1%	-3.3%
Computers & OM	0.0%	-3.4%
Other intangibles	0.0%	-3.4%
Other	-0.3%	-3.8%
Cable – Copper*	4.7%	1.7%
Cable – Fibre	1.9%	-1.6%

* For copper cable we use the five year average from 2005/06 to 2010/11 excluding 2009/10 due to one-off events in 2009/10

19.305 For copper cable, we used the five-year average from 2005/06 to 2010/11 excluding 2009/10 data. This is because in 2009/10 there was a very significant increase in the price of copper driven by the recovery of the world economy. We considered that the 2009/10 increase was a one-off and would distort the average if included.

19.306 ‘Other network equipment’, ‘Motor Transport’, ‘Computers & OM’ and ‘Other’ categories have zero holding gain or loss. This is because these assets are now valued at historical cost, and therefore, to be consistent with the accounting treatment of these assets, they do not have a holding gain/loss. This meant that their values would reduce in real terms over the duration of the charge control.¹⁴⁹⁶

19.307 To forecast the value of duct, we assumed that the nominal changes in the price of duct in the future will equal RPI. The five-year average would not be representative of future duct values, due to a large one-off holding gain on duct in 2009/10 and a holding loss in 2010/11 that occurred for reasons that did not involve changes to the underlying asset. We considered that the use of RPI to forecast the value of duct was consistent with Ofcom’s view of the RAV approach.

Consultation responses

19.308 We received no response from stakeholders on our proposal to use five-year historical average asset price change.

¹⁴⁹⁵ BT Group response to S135 Notice of 28 September 2012 [3X].

¹⁴⁹⁶ The ‘Other’ category also includes 21CN assets that were revalued for the first time in 2010/11. As we removed 21CN assets from modelling for TI as a result of anchor pricing approach, the historical asset price change applies. In any case, the revaluation effect is small and does not change the five year average.

Our response and conclusions

19.309 We have used five-year historical average asset price changes. We have updated the asset price changes used in the cost forecasts to reflect the new base year. This is shown in Figure 19.12 below.

Figure 19.12 Asset price changes assumed in our cost forecasts

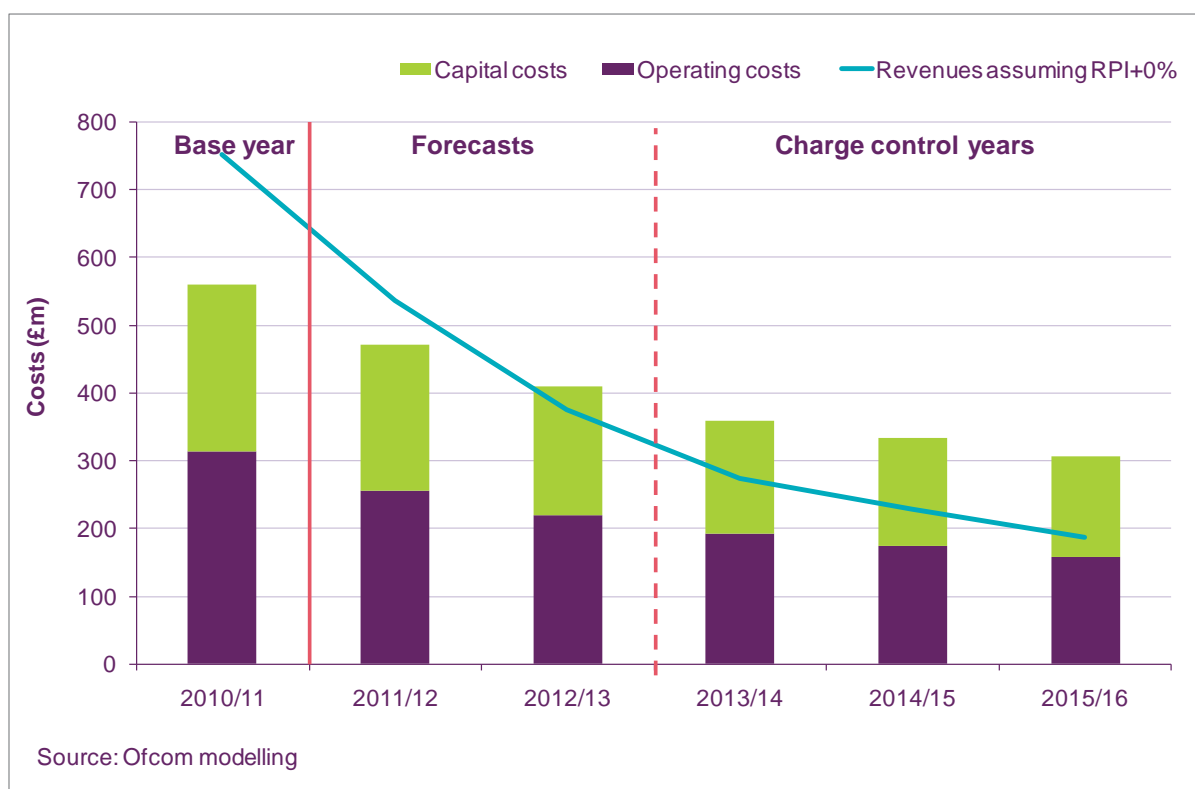
Asset	5 year average nominal price change between 2007/08 and 2011/12	Real price change
Duct	3.6%	0.0%
Local Exchange	-0.3%	-3.8%
Main Exchange	0.0%	-3.4%
Transmission	0.1%	-3.4%
Other Network Equipment	0.0%	-3.5%
Motor Transport	0.0%	-3.5%
Land & Buildings	0.0%	-3.5%
Computers & OM	0.0%	-3.5%
Other Intangibles	0.0%	-3.5%
Other	0.0%	-3.5%
Cable – Copper*	0.4%	-2.1%
Cable - Fibre	2.2%	-1.4%
* For copper cable we use the five year average from 2006/07 to 2011/12 excluding 2009/10 due to one off events in 2009/10		

Reallocation of costs from the TI basket to the Ethernet basket

The LLCC Consultation proposals

19.310 We proposed a reallocation of costs from the TI basket to the Ethernet basket. In the LLCC Consultation we explained that, as TI volumes declined, our model predicted that revenues would fall faster than fully allocated costs. This meant that if prices were held constant in real terms, then revenues by the end of the charge control period would fall significantly below costs.

19.311 Figure 19.13 below illustrates the costs and revenues of TI services based on our proposed modelling assumptions. The costs illustrated are from the charge control model, as used for the LLCC Consultation, and are before the effect of any reallocation adjustment and before charges are impacted by our proposed charge control.

Figure 19.13 TI basket cost stack and revenues before cost reallocation

19.312 Figure 19.13 shows the evolution of costs and revenues predicted by the LLCC model before any reallocation. This shows that, at constant prices, revenues were forecast to decrease sharply, as represented by the blue line. Costs were also predicted to fall, but by less than revenues. This would mean that by 2015/16, revenues based on constant prices would be insufficient to cover costs.

19.313 In the LLCC Consultation we explained that many of the costs required to deliver TI and Ethernet services are common. For example, assets (such as duct, land and buildings) as well as operational and administration costs are used to support leased lines across the two markets. Consequently, many of the same costs incurred in supporting the SDH networks in place at the beginning of the period would still be incurred in operating the 21CN/WDM infrastructure we expect to be in place by the end of the charge control period.

19.314 Cost components are defined in BT's system such that TI and Ethernet services do not share the same underlying cost components, even though these components use the same underlying assets. So, if TI volumes fall by 75%, the unit cost of the duct allocated to TI at the start of the period would increase significantly, to reflect the fact that fixed costs would then only be allocated over a quarter of the original volumes. Conversely, if Ethernet volumes rise by 50% the unit cost allocated to Ethernet would fall significantly. As the definition of cost components does not reflect common asset use, there was a need to explicitly reallocate some costs between the TI and Ethernet baskets.

19.315 We noted that capital and operating costs are available at different levels of detail:

- capital costs can be divided into costs for TI-specific assets and costs for common assets which are used to provide other services in addition to TI services; and

- operating costs are split into two broad categories: pay and non-pay. These include direct costs that relate specifically to the delivery of the services in question, such as general support and maintenance, as well as fixed and common costs such as finance, billing, general management, personnel and administration. We did not have the detailed breakdowns of costs into these cost types.

19.316 Our analysis showed that the largest share of capital costs associated with TI services related to assets that are not specific to TI services, such as cable, duct and land and buildings. These costs are allocated by BT to services in relation to their usage to provide those services.

19.317 In the LLCC 2009 control, we addressed this issue by reallocating 62% of TI non-marginal costs to the AI basket.¹⁴⁹⁷ In the LLCC Consultation we proposed to make a similar adjustment, with a modified approach to reallocating capital costs.

19.318 We calculated the amount of capital costs to be reallocated as set out below.

- Calculate what the total capital costs would be using the AVEs. This was determined by the volume forecasts in conjunction with the AVEs, asset price changes and WACC. Across the TI services, this would imply a threefold increase in unit capital costs compared to 2010/11 levels.
- Calculate what the total capital costs would be assuming constant 2010/11 unit capital costs for the identified assets (i.e. duct, cable, and land and buildings), taking into account the AVEs for the remaining asset types.
- The difference between (i) and (ii) is the amount of costs to reallocate.

Figure 19.14 Approach to reallocation of capital costs from TI to Ethernet basket

Description	Capital costs
Total costs in 2015/16	£149m
Capital costs associated with cable, duct and land & buildings in 2015/16	£75m
Capital costs in 2015/16 if real unit costs were held constant at 2010/11 levels	£29m
Reallocation to Ethernet basket	£46m

Source: Ofcom modelling

19.319 For operating costs, we did not have a detailed breakdown of the different cost types and we therefore could not use a similar approach to capital costs. Instead, we split operating costs into pay and non-pay and proposed a similar approach to that used in the LLCC 2009 in determining the amount of operating costs to reallocate.¹⁴⁹⁸

- We calculated total operating costs to be recovered based on the volume forecasts, CVEs and efficiency.
- Similarly to the LLCC 2009 approach, we calculated the proportion of these operating costs that were 'non-marginal', i.e. fixed with respect to volume changes. This was done by multiplying the operating cost forecasts for each

¹⁴⁹⁷ See paragraphs 4.254-4.263 of the LLCC 2009.

¹⁴⁹⁸ See paragraphs A7.179 to A7.193 of the LLCC 2009.

component with their respective CVEs. For example, if a component had a CVE of 0.6, this would imply that 40% of costs (i.e. $1-0.6$) were non-marginal.

- iii) Of the non-marginal costs, we allocated a proportion in line with the decline in TI services. This proportion was based on the forecast reduction of TI circuits in 2015/16 compared to 2010/11 levels, i.e. 74%. We assumed that these non-marginal, or fixed, costs would not vary with volume. In practice these costs would then be allocated on a top-down basis as the underlying volumes changed. Our adjustment assumed that the result of this would be that unit cost for these operating costs for TI services would stay constant in real terms. This was consistent with our approach to capital costs, where we also assumed that unit costs would stay constant until 2015/16. The total amount of non-marginal operating costs that we proposed to reallocate to the Ethernet basket was £55m.

19.320 The figure below summarises the calculations for operating costs, based on our forecasts of future volumes and costs within our model:

Figure 19.15 Approach to reallocation of operating costs from TI to Ethernet basket

Description	Operating costs
Total costs in 2015/16	£157m
Non-marginal operating costs in 2015/16	£74m
Reduction in TI circuits in 2015/16 from 2010/11 levels	74%
Costs in 2015/16 calculated as: Unit costs in 2010/11 * Service volumes in 2015/16	£19m
Reallocation to Ethernet basket	£55m

Source: Ofcom modelling

19.321 We therefore proposed a reallocation from the TI basket to the Ethernet basket of £101m (equal to £46m in capital costs and £55m in operating costs). This reduced the TI cost base in 2015/16 from £307m to £206m, and reduced the charge control for the TI basket from RPI+18.75% to RPI+3.25%. There was a neutral impact on BT's total revenues, since this impact was offset by a change in the charge control for the Ethernet basket from RPI-17.50% to RPI-12.00%.

19.322 We considered that these proposals were consistent with migration from TI to Ethernet services. Although the reallocation would reduce the differential between TI and Ethernet services, the differential would remain large. Over the course of the charge control, TI prices would increase in real terms, whereas those of Ethernet services would decrease. This was consistent with appropriate migration signals because the increase in charges for TI services reflected the increase in forward-looking costs.

Consultation responses

19.323 We received five responses on our proposal to make a reallocation of costs from the TI to the Ethernet basket. None of the four responses objected to the principle of the reallocation of costs but each raised concerns regarding the methodology we proposed to use to carry out the reallocation. The concerns raised fall into three broad categories:

- admin-related costs;

- calculation of common costs to be reallocated; and
- services outside the scope of the LLCC.

19.324 Below, we summarise the responses relating to each of these issues in turn.

Admin-related costs

19.325 We received one response, from CWW, in relation to the reallocation of admin-related costs.

19.326 CWW argued that Ofcom's proposed reliance on AVEs/CVEs for forecasting admin-related costs is inconsistent with the proposals for other capital and operating costs, which focus on reallocating non-marginal costs and moderating the increase in unit costs.¹⁴⁹⁹

19.327 CWW said that Ofcom continued to rely on flawed AVEs and CVEs and have proposed to just apply them at the basket level rather than the service level.¹⁵⁰⁰ CWW said that "it is not clear how a move to the basket level can be expected to address the limitations identified by Ofcom in the AVE/CVE approach". CWW argued that Ofcom proposed a different solution for other capital and operating costs, for which we proposed to hold unit capital costs for TI services and reallocate a proportion of non-marginal operating costs. CWW stated that the admin-related costs were subject to the same AVE/CVE common cost allocation problem and said that it was not clear why Ofcom chose to apply a different remedy to the problems.¹⁵⁰¹

19.328 CWW suggested that Ofcom's "approach results in a more than doubling of unit admin-related cost".¹⁵⁰² CWW argued that these costs will be common across many services and, in the absence of any specific evidence of significant TI-specific fixed costs or significant rises in admin-related costs across all services, there is no reason to believe that allocated unit costs should rise in this way.¹⁵⁰³

Calculation of common costs to be reallocated

19.329 We received responses from CWW, TalkTalk, Sky and Exponential-e on our proposed methodology for calculating the common costs to reallocate from the TI to the Ethernet basket. In this section, we summarise the responses on this issue from each of the stakeholders in turn.

19.330 CWW said that Ofcom's analysis showed that TI unit costs were forecast to rise by 44% from 2010/11 to 2015/16 and argued that Ofcom did not explain how such a significant rise in unit costs was consistent with the cost drivers underlying TI services.¹⁵⁰⁴ CWW argued that the increase in TI unit costs indicated that Ofcom had inadequately addressed the failings in BT's forecasting approach and incompletely

¹⁴⁹⁹ See CWW response to the LLCC Consultation, paragraphs 12.11-12.12.

¹⁵⁰⁰ See CWW response to the LLCC Consultation, paragraph 12.10, referring to paragraph A5.242 of the LLCC Consultation document.

¹⁵⁰¹ See CWW response to the LLCC Consultation, paragraphs 12.11-12.12.

¹⁵⁰² See CWW response to the LLCC Consultation, paragraph 12.13.

¹⁵⁰³ See CWW response to the LLCC Consultation, paragraph 12.15.

¹⁵⁰⁴ See CWW response to the LLCC Consultation, paragraphs 12.7-12.8.

dealt with the over-allocation of common costs to the TI basket.¹⁵⁰⁵ CWW said that after stripping out the effect of increased admin-related costs, its analysis indicated that TI unit capital costs would be forecast to rise sharply (by 70% from 2010/11 to 2015/16).¹⁵⁰⁶

19.331 CWW said that the anomalous increase in unit costs it has identified appears to be attributable to Ofcom's changed approach to forecasting unit costs.¹⁵⁰⁷ CWW highlighted the approach Ofcom took for the LLCC 2009 when costs were reallocated from the TI to the AI basket, which avoided "the rapid increases in TI unit costs which would result from a constant amount of fixed costs being recovered from an ever-smaller volume of TI services".¹⁵⁰⁸ CWW said that, whilst Ofcom essentially retained this approach in respect of all operating costs and cable, duct, land and buildings capital costs, this approach was no longer applied for other operational assets.¹⁵⁰⁹

19.332 CWW pointed out that Ofcom's approach of reallocating capital costs on the basis of keeping unit costs fixed for the Cable, Duct and Land and Buildings cost categories implied dramatic unit cost increases for other operational asset capital costs (by 155% from 2010/11 to 2015/16).¹⁵¹⁰ CWW said that this new approach appeared to make no adjustments to BT's AVE/CVE based forecasts for these other operational assets, whilst Ofcom appeared to suggest that these assets were also, to some extent, common between TI and Ethernet services.¹⁵¹¹ CWW argued that Ofcom's proposed reallocation methodology is less effective than the approach established in the 2009 LLCC because:

- it assumes without any supporting evidence that other operational asset costs do not feature a large common cost component, and/or that this cost category is unaffected by the failings of BT's approach to forecasting common cost allocations; and
- it fails to avoid the rapid increase in unit costs which Ofcom clearly guarded against in setting the 2009 control.¹⁵¹²

19.333 CWW submitted that the proposed approach must be amended so that it is at least as effective at dealing with the problems in BT's forecasts of common cost allocations as the approach adopted in the LLCC 2009.¹⁵¹³ CWW suggested that one way of achieving this would be to extend the approach currently proposed for cable, duct, land and buildings to other operational assets. CWW estimated that this would lead to a TI unit capital cost of £442 per circuit in 2015/16, and total TI capital costs of £53m (excluding admin-related costs): £36m less than currently assumed.¹⁵¹⁴

¹⁵⁰⁵ See CWW response to the LLCC Consultation, paragraph 12.8.

¹⁵⁰⁶ See CWW response to the LLCC Consultation, paragraph 12.19.

¹⁵⁰⁷ See CWW response to the LLCC Consultation, paragraph 12.22.

¹⁵⁰⁸ See CWW response to the LLCC Consultation, paragraph 12.23, referring to the LLCC Statement 2009, paragraphs 4.259-4.261.

¹⁵⁰⁹ See CWW response to the LLCC Consultation, paragraph 12.25.

¹⁵¹⁰ See CWW response to the LLCC Consultation, paragraph 12.20.

¹⁵¹¹ See CWW response to the LLCC Consultation, paragraphs 12.25-12.27, referring to paragraph A5.246 of the LLCC Consultation.

¹⁵¹² See CWW response to the LLCC Consultation, paragraphs 12.30.

¹⁵¹³ See CWW response to the LLCC Consultation, paragraphs 12.30-12.31.

¹⁵¹⁴ See CWW response to the LLCC Consultation, paragraphs 12.31-12.32.

19.334 TalkTalk commissioned a report by Frontier Economics to review the methodology we proposed to reallocate certain costs from the TI basket to the Ethernet basket. TalkTalk based its response on the reallocation on the findings of the Frontier Economics report. Sky reiterated many of the points made in TalkTalk's response.

19.335 TalkTalk and Sky argued that a number of flaws in our approach meant that the reallocation should be lower than we proposed. They made the following specific points:

- Ofcom's assumption that TISBO unit capital costs were stable was unrealistic / unreasonable. TISBO unit costs should rise over time due to dis-economies of scale and utilisation of assets falling more slowly than demand.^{1515, 1516}
- Ofcom did not take account of the fact that AISBO services would make more efficient use of resources than TISBO services, so that there should not be a one-to-one transfer of resources from TISBO to AISBO and a rise in the TISBO unit cost.^{1517, 1518} Sky cited duct, fibre and accommodation as common resources which are likely to be used more efficiently by Ethernet services.¹⁵¹⁹

19.336 TalkTalk also argued that there were reasons based on economic efficiency for having a higher common cost recovery from TISBO services than from AISBO services. Specifically:

- This would encourage migration from the TISBO services, leading to productive efficiency gains. TalkTalk also noted that the remaining demand for TISBO services was likely to be relatively inelastic, since the remaining customers would be those who highly value the capabilities of TISBO products.
- Since entry into TISBO markets is unlikely, TalkTalk believed that Ofcom should focus on allowing the correct "build or buy" signals on Ethernet, which would imply that fewer common costs should be recovered from Ethernet services, since this would result in prices closer to marginal costs.
- Demand for innovative end user applications dependent on Ethernet services may be more elastic than demand for legacy TISBO services, so Ramsey pricing principles would mean that increasing the common costs recovered on Ethernet services would reduce overall demand.
- Potential benefits brought by vigorous competition based on deeper infrastructure competition may be foregone if there is an increase in the costs Ethernet services, which are used in conjunction with LLU to provide downstream services to end users.¹⁵²⁰

19.337 Exponential-e questioned whether the proposed reallocation of £101m was a fair allocation of BT duct costs into the appropriate cost baskets that Ofcom used.¹⁵²¹

¹⁵¹⁵ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11.

¹⁵¹⁶ See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

¹⁵¹⁷ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11.

¹⁵¹⁸ See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

¹⁵¹⁹ See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

¹⁵²⁰ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.13.

¹⁵²¹ See Exponential-e non-confidential response to the LLCC Consultation, paragraphs 7.1-7.2, page 12.

Exponential-e objected to the lack of detail provided by Ofcom about the “duct” cost category and said that it opposes the measure “until a suitable form of transparency can be offered”.¹⁵²²

Services outside the scope of the LLCC

19.338 We received responses from CWW, TalkTalk, Sky, EE/MBNL and Exponential-e on the issue of TI common costs being shared with services outside the scope of the present charge control.

19.339 CWW proposed that the excess common costs that it identified among the operational assets and the admin-related costs should either be removed from the TI and Ethernet cost base altogether or allocated to the Ethernet cost base to the degree that the allocation of these costs would properly switch from TI services to Ethernet services over time. CWW also considered that that this should be the case for the duct and fibre costs that Ofcom has already proposed to re-allocate. In support of this approach, CWW pointed to past and likely future product substitution. CWW argued that many low bandwidth circuits moved from TI to WBA or WLA LLU services and that in the future many customers will take up NGA, rather than Ethernet services. CWW pointed out that NGA is not charge controlled, so removing these common costs from the TI and Ethernet cost base would not deny BT the opportunity for full cost recovery.¹⁵²³

19.340 TalkTalk and Sky were also concerned that Ofcom’s proposed methodology did not adequately take into account services outside the scope of the LLCC. They made the following specific points:

- Ofcom’s proposed methodology makes the common cost reallocation only to Ethernet services and not to any other services that also make use of these common assets. Reductions in the costs recovered from TISBO services should be recovered across all the services that used the assets in question, not just AISBO services.¹⁵²⁴
- Not all of the decline in TISBO volumes will be attributable to substitution by Ethernet and nor will all the increase in Ethernet volumes relate to substitution from TISBO”.¹⁵²⁵ TalkTalk said that “Ofcom did not present evidence to support the assumption that all reductions in demand for TISBO services would be offset by substitution to AISBO services.”¹⁵²⁶

19.341 TalkTalk endorsed the recommendation made in the report it commissioned from Frontier Economics that an alternative methodology for calculating the appropriate reallocation should be used, which was based on the methodology used by Ofcom in setting WLR LLU charges and used a combination of usage factors (for instance based on BT’s FAC system underlying the RFS) and forecast demand.¹⁵²⁷ Sky suggested that “a more appropriate method for allocating common costs between TISBO and Ethernet would be one which properly reflects changes in the volumes of

¹⁵²² See Exponential-e non-confidential response to the LLCC Consultation, paragraphs 7.3, page 12.

¹⁵²³ See CWW response to the LLCC Consultation, paragraphs 12.33-12.36.

¹⁵²⁴ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11

¹⁵²⁵ See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

¹⁵²⁶ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11

¹⁵²⁷ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.16.

all services that use the common resource (not just TISBO service volumes) and which accounts for differences in usage factors between these services.”¹⁵²⁸

19.342 EE/MBNL said that the logic that TI services should attract a declining amount of certain fixed costs such as duct and fibre seemed sound but that it questions why all of these costs are necessarily automatically re-allocated to the Ethernet cost base.¹⁵²⁹ EE/MBNL argued that some of the £101 million should also be allocated to other BT products outside the market review (both regulated and unregulated) which also use the same common costs.¹⁵³⁰

19.343 Exponential-e said that the operational costs of providing network management needed close scrutiny such that only an appropriate proportion of those functions had their costs put into the Ethernet basket. Exponential-e also said that if the Openreach Network Operations Centre supported other significant products and networks such as NGA (FTTC/FTTP), Ofcom would need to ensure that only an appropriate proportion of costs are included in the Ethernet basket.¹⁵³¹

Our response and conclusions

19.344 We have considered carefully the arguments raised about cost reallocation in the response to the LLCC Consultation. We first consider the amount of common costs to reallocate, before deciding on where we reallocate.

Admin-related costs and WECLA

19.345 We have examined CWW’s concern as to whether admin costs were properly allocated. In the LLCC consultation, admin costs were not part of the common costs to be reallocated. In our view administration costs can also be considered as common between TI and Ethernet services. As TI services decline, admin resources can be expected to be redeployed to growing markets. We therefore include admin costs as part of the reallocation.

19.346 In the LLCC Consultation, the reallocation was only to the charge controlled market – that is, Ethernet services in the UK excluding Hull and the WECLA. Following our review of the reallocation methodology, we now consider that the reallocation should be across all of BT’s Ethernet services, and not just the charge controlled area. We have therefore adjusted the reallocation so that the share of common costs borne in the WECLA is in proportion to the share of circuits in the WECLA as compared to the rest of the UK (excluding Hull).

Calculation of common costs to be reallocated

19.347 In the LLCC Consultation, we adopted differing approaches for reallocating capital and common costs. In relation to capital costs, we identified those assets – namely cable, duct and land and buildings – which can be considered as common between TI and Ethernet services. As described above, we based our approach on holding the unit costs for these assets for TI services constant in real terms, reallocating the difference to Ethernet services. For operating costs, we followed the approach of the

¹⁵²⁸ See Sky non-confidential response to the LLCC Consultation, paragraphs 35, page 8.

¹⁵²⁹ See EE/MBNL non-confidential response to the LLCC Consultation, pages 26-27.

¹⁵³⁰ See EE/MBNL non-confidential response to the LLCC Consultation, page 27.

¹⁵³¹ See Exponential-e non-confidential response to the LLCC Consultation, paragraph 7.5.2.2, page 12.

LLCC 2009 and reallocated non-marginal costs in proportion to the decline in TI services.

19.348 We have reconsidered our approach in the light of consultation responses. In particular, we have examined the responses from TalkTalk, Sky and CWW and reconsidered whether it is appropriate to hold the unit costs for duct, capital and land and buildings for TI services constant in real terms. By holding the unit costs of these services constant, we are mandating that all the loss in economies of scale in the use of these assets due to the decline in TI services is recovered from other services.

19.349 We consider that there may be drawbacks to this approach. In the case where TI volumes are declining, all the loss of economies of scale in these assets will be borne by other services. We consider that it may be more reasonable for TI and other services to share these common costs, in proportion to the migration to other services. This is reflected in the methodology used for reallocating operating costs, where non-marginal costs are reallocated in proportion to the rate of migration. This approach means that TI services also share in the rise in unit costs in these assets.

19.350 We have therefore decided to use the same approach for the reallocation of capital and operating costs. We will now explain our decision on the services to which we reallocate those costs, before explaining the new reallocation formula.

Services outside the scope of the LLCC

19.351 We have considered whether it is appropriate to reallocate some of the common costs to services other than leased lines. We consider that such an approach would be justified if BT were able to recover the common costs from other markets. For example, if customers migrate from TI to other (not leased lines) BT services then BT may be able to recover the common costs, previously recovered from TI from the other services. If in the charge control we were to allocate all the common costs within the leased line market, then there is a risk that BT may double-recover those common costs.

19.352 We note that it is likely that some TI customers will migrate to services other than Ethernet. The BCMR market research identified that TI customers may migrate to ADSL and Next Generation Access (NGA) services, in addition to Ethernet services.¹⁵³² This market research asked a number of questions which give some insight into migration patterns:¹⁵³³

- 20% of respondents had replaced leased lines with ADSL, and 7% had replaced these with mobile broadband services.¹⁵³⁴
- 14% (of respondents whose companies with ten or more employees had leased lines access links) say they are likely to replace leased lines with ADSL and 29% that they are likely to replace them with Ethernet.¹⁵³⁵

¹⁵³² See Jigsaw Research, Business Connectivity Services Review, 11 October 2011. Available at: <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/annexes/business-review.pdf>

¹⁵³³ Note that each question was asked individually, so that the responses are not mutually exclusive.

¹⁵³⁴ See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 61, (section 8.5 "Replacing leased lines with ADSL or mobile broadband").

¹⁵³⁵ See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 62, (section 8.6 "Replacing leased lines with ADSL or Ethernet").

- 19% of respondents saw no difficulty in replacing leased lines with ADSL, whereas 44% had no concerns about replacing leased lines with Ethernet¹⁵³⁶;
- 53% of respondents said that they were likely to switch to superfast broadband. However, given the lack of availability of NGA at that time and the lack of information service features, the market research noted this “is probably more a reflection of a general interest in this service than a concrete desire to take it up in the short to medium term”.¹⁵³⁷

19.353 We have considered whether BT would be able to recover the common costs previously associated with TI services from ADSL and NGA. Although there may be migration from leased lines to these services, we consider it unlikely that BT will be able to recover many common costs from those services. This is because relatively few common costs are recovered from these services.

19.354 ADSL services are treated as an overlay of the voice service, which means that BT is allowed to recover only the incremental costs of ADSL provision, given that any ADSL customer must have a fixed line. Common costs are instead recovered from voice services through WLR. On ADSL regulation, SMPF (Shared Metallic Path Facility) does not recover common costs which are recovered from WLR.

19.355 This is set out in the WLR LLU CC:

“Currently the large majority of common costs in the access network are recovered through charges for MPF (Metallic Path Facility) and WLR. In contrast, common costs associated with duct and copper are not recovered from SMPF, which is an “overlay” product that can only be bought in combination with WLR - which already includes duct and copper costs”.¹⁵³⁸

19.356 This means that if a customer already has a voice line, and purchases an ADSL service, no additional common costs are recovered from the customer. This is similar for NGA services. By regulation, BT is allowed to recover the same amount of common costs from NGA as from ADSL. This means that if the customer already has a voice line, the broadband element will not contribute to common costs, and then there is no risk of double-recovery.¹⁵³⁹

19.357 As common costs are recovered from voice rather than broadband services, BT will not recover any additional common costs from a new ADSL customer if that customer already has a fixed line. This means that the only over-recovery of common costs could relate to customers who do not have a voice line.

19.358 If a TI customer without a voice line replaces its leased line with an ADSL service, then some common costs may be over recovered. However, we consider it unlikely that any such over-recovery is very material. First, the vast majority of firms do have a voice line, thus over recovery may only occur on a very small number of cases.

¹⁵³⁶ See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 63-64, (section 8.6 “Replacing leased lines with ADSL or Ethernet”).

¹⁵³⁷ See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 8, (section 2.5 “Switching”).

¹⁵³⁸ See Ofcom, “Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30”, 9 November 2012, pp. 33, paragraph 6.24.

¹⁵³⁹ See Ofcom, “Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30”, 9 November 2012, pp. 35, paragraph 6.32.

Second, even if some of these cases occur, we note that ADSL prices are lower than those of TI, and the absolute amount of common costs recovered from each customer is smaller than for leased lines.

19.359 Given current allocations of common costs, we consider it unlikely that the common costs associated with migrating leased lines services will be recovered from other services. These common cost allocations are partly a result of past regulatory decisions in other markets. We consider that it would not be proportionate to re-evaluate BT's common cost allocation across all services and reopening other charge controls in the scope of the present charge control. This would be a very large task and would require examining BT's attribution of common costs to all the services it provides, regardless of whether they are regulated or not. Given the difficulty in determining an appropriate allocation of common cost, it is not clear whether any definitive conclusion could be reached.

19.360 We therefore rule out allocating common costs outside the leased lines market. Although some TI customers are likely to switch to services other than Ethernet, we anticipate that BT would not recover a material amount of common costs from those customers. Therefore, if we were to allocate some of the common costs outside the leased lines market, then BT would be at risk of not recovering its costs. We therefore will only reallocate costs within the leased lines markets.

Our reallocation approach

19.361 We have reconsidered whether it is appropriate to allocate all of the common costs to Ethernet services. As our formula reallocates non-marginal costs in proportion to the decline in TI volumes, in the LLCC Consultation we implicitly assumed that the decline in TI customers is attributable to migration to Ethernet services. As set out above, it is likely that not all TI customers will migrate to Ethernet services. In fact, it is likely that some will migrate to ADSL and NGA services.

19.362 Given that not all migrating TI customers will migrate to Ethernet services, we have considered whether it is appropriate for all the reallocation to be to Ethernet. The formula used for reallocation bases the share of non-marginal costs on the percentage decline in TI services. If all of this reallocation is given to Ethernet services, this implicitly assumes that all these common costs should be recovered from Ethernet services.

19.363 We consider that this would be appropriate in the scenario where all migrating customers go to Ethernet services. In that case, it seems appropriate that the common costs previously recovered in the TI market are instead recovered in the Ethernet market. However, this approach seems more questionable for customers migrating outside the leased lines markets. As these customers are moving to other services, it does not seem appropriate that those common costs are recovered from Ethernet services.

19.364 We consider that it would be preferable to recover those common costs from the remaining TI customers. Such an approach recognises that as the legacy services decline, there is a loss of economies of scale such that unit costs rise. We consider it appropriate that this rise in unit costs is reflected in the pricing of TI services, subject to adjustment for the common costs likely to be recovered from the Ethernet basket.

19.365 We note that such an approach may also be consistent with economic efficiency. By reallocating less cost to Ethernet, and leaving more in TI, it will incentivise migration to the more efficient Ethernet services.

19.366 We have decided to calculate the percentage of TI service likely to move to Ethernet as follows. The BCMR market research has found that 29% of TI customers are likely to move from TI to Ethernet services.¹⁵⁴⁰ This corresponds to approximately half of the total decline in TI services forecast over the charge control.

19.367 We have adjusted the formula for reallocation as explained below.

- i) Calculate total costs to be recovered based on the volume forecasts, AVEs, CVEs and efficiency assumption.
- ii) Of the non-marginal costs, we allocate a proportion to Ethernet in line with the share of the decline in TI services which can be expected to migrate to Ethernet services. As noted above, this means that 29% of the non-marginal costs associated with TI services should be reallocated to Ethernet.
- iii) As with the LLCC 2009 approach, we calculated the proportion of operating and capital costs that were 'non-marginal', i.e. fixed with respect to volume changes. This was done by multiplying the operating cost forecasts for each component with their respective CVEs and AVEs. For example, if a component had a CVE of 0.6, this would imply that 40% of costs (i.e. $1-0.6$) were non-marginal. We then allocated 29% of those costs to the Ethernet basket, in line with the share of TI customers likely to migrate to Ethernet.

19.368 In summary, we have concluded that it is appropriate to reallocate 29% of the non-marginal costs from the TI to the Ethernet basket. This means that £46m of costs will be reallocated from the TI to the Ethernet basket.

Value of X

The LLCC Consultation proposals

19.369 In the LLCC Consultation, we explained that the value of X could be affected by the following things:

- changes in base year cost data or in our base year adjustments
- changes in the assumed level of operating efficiency;
- a change in the approach to calculating AVEs and CVEs;
- a change in the WACC;
- a change in the impact of geographic disaggregation; or
- changes in the volume forecasts;

19.370 Based on our assessment of these issues, we proposed a base case of RPI+3.25% for the TI basket, within the range of RPI+0% and RPI+6.50%.

¹⁵⁴⁰ See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 62, (section 8.6 "Replacing leased lines with ADSL or Ethernet").

Consultation responses

19.371 Three stakeholders commented and raised concerns on the proposed level of the control for TI services.

19.372 UKCTA claimed that, “under the current proposals, UKCTA members [...] will be significantly disadvantaged. If legacy services are retained, and in some scenarios there is no alternative, CPs costs will increase substantially due to the proposed charge control rises”. UKCTA gave the example where PPCs were used in order to provide voice services for which there was no migration path from TDM.¹⁵⁴¹

19.373 Level 3 said that many of its customers have an enduring reliance on 2Mbit/s PPC circuits. It was concerned with a significant prospective rise in prices for 2Mbit/s TI services and said that it preferred to see a tighter control than the one proposed.¹⁵⁴²

19.374 CWW was concerned with the proposed level of X for TI services. It said that the RPI+10% sub-cap and typical inflation allow an increase on some services by a further 40% over the duration of the control. CWW argued that it is important in the context where some users cannot find alternatives for those services within the next three years.¹⁵⁴³

Our response and conclusions

19.375 Given the modelling assumptions described above, we have calculated that the value of X for TI services is +2.50%. This is the amount by which we forecast that charges in the TI basket will on average need to increase in real terms every year in order to bring them into line with forecast costs, including a return on capital, by the end of the charge control.

19.376 The volume of TI services is forecast to decline substantially over the period of the proposed charge control as demand increases for higher bandwidth services. TI fixed costs are shared over fewer volumes as TI circuits decline and CPs migrate to new solutions. We consider that BT should be allowed to recover its costs, whilst also allowing for efficient pricing signals so that customers are incentivised to migrate to more efficient services.

19.377 An RPI+2.50% control will mean that the price of TI services will rise in real terms over the charge control period. We consider that the level of the control reflects the loss of economies of scale as the network declines and provides the appropriate balance between allowing for efficient pricing signals and protecting customers from excessive prices.

¹⁵⁴¹ See UKCTA response to the LLCC Consultation, page 20, “Service Migration” section.

¹⁵⁴² See Level 3 non-confidential response to the LLCC Consultation, page 5.

¹⁵⁴³ See CWW response to the LLCC Consultation, page 42.

The TI basket control meets the relevant tests under the Act

Powers under sections 87 and 88 of the Act

19.378 We are imposing a charge control on BT by means of an SMP condition under section 87(9) of the Act.¹⁵⁴⁴ The main aspects of the charge control are summarised in Figure 19.1 above.

19.379 The TI basket control applies to specific services in the four TI wholesale markets identified in Section 4. The specific services, and the markets to which the TI basket control applies, are set out in the SMP condition at Annex 7 of this Statement.

19.380 Section 88 of the Act states that Ofcom should not set an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse effects arising from price distortion and it also appears that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on the end-users of the public electronic communications services.

19.381 In setting charge controls, section 88 also requires that we must take account of the extent of the investment in the matters to which the condition relates of the person to whom the condition is to apply – i.e. BT.

There is a relevant risk of adverse effects arising from price distortion

19.382 As set out in Section 7, and explained further above in Section 11, we consider the relevant risk of adverse effects arising from price distortion is the risk that BT might fix and maintain its prices for the specific services that we are including in the TI basket control at an excessively high level.

Promoting efficiency

19.383 We consider that imposing the SMP condition is appropriate for the purpose of promoting efficiency, since:

- In the absence of competitive pressures, we believe that BT would have limited incentives to seek to reduce its costs of providing wholesale leased lines services (see Section 11).
- In setting the charge controls, we are using an RPI-X formulation, so that BT is encouraged to achieve greater productive efficiency in providing wholesale TI services (see Section 17). This would be achieved, since this form of charge control would allow BT to keep any super-normal profits that it earns within the defined period by reducing its costs beyond the efficiency gains we have assumed in setting the charge control. In the longer run, these cost savings could be passed on to customers.

¹⁵⁴⁴ SMP condition 5.1 at Annex 7 of this Statement.

- By bringing charges more into line with forecast costs, our charge control would increase allocative efficiency (see Section 18).
- The charge control has been set to allow BT to earn a reasonable rate of return (the cost of capital) if it is efficient. This is the approach that Ofcom has applied over charge control periods to encourage efficient investment (see Section 18).
- The broad basket that we have designed would allow BT to recover common costs in an efficient manner (see Section 18).

Promoting sustainable competition and conferring the greatest possible benefits on end-users

19.384 We also consider that the charge controls are appropriate to promote sustainable competition and to confer the greatest possible benefits on end-users of public electronic communications services.

19.385 The market analysis we have conducted as set out in Section 7, suggests that there is a sufficient risk that BT might fix and maintain its charges for the services within the scope of the TI basket at an excessively high level, which would be to the detriment of competition. Addressing the risk of excessive pricing via an RPI-X type of charge control would promote sustainable competition, which we consider is likely to be the most effective way of benefiting end-users of public electronic communications services. It will enable greater choice of services for end users in terms of choice, price, quality of service and value for money.

19.386 Although the charge control applies to baskets of services, we have implemented appropriate safeguards to ensure that BT does not use the pricing flexibility offered to it in an anti-competitive manner (see paragraphs 19.57-19.104).

Investment matters

19.387 In designing the TI basket control we have also taken into account the need to ensure BT has the correct incentives to invest and innovate. We have done this in the following three respects:

- first, in modelling BT's forecast costs, we have built in a reasonable return on investment (see paragraphs 19.248-19.260);
- second, we have used an RPI-X form of charge control, which encourages and rewards investment in new, more efficient technologies, since BT would be able to keep any efficiency gains that go above and beyond our efficiency assumptions over the course of the charge control (see Section 18); and
- third, we have adopted the anchor pricing approach for the TI basket control, which incentivises investment in innovative and more efficient technology (see paragraphs 19.105-19.116).

We have considered the tests under section 47 of the Act

19.388 Any SMP condition must also satisfy the tests set out in section 47 of the Act, namely that it must be:

- objectively justifiable in relation to the networks, services or facilities to which it relates;

- not such as to discriminate unduly against particular persons or a particular description of persons;
- proportionate as to what it is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

19.389 We consider these tests are satisfied.

The SMP condition is objectively justifiable

19.390 In Section 7 we set out our finding that BT has SMP in the markets covered by the TI basket control. In the absence of any charge control, this would allow BT to set charges unilaterally, leading to a risk of excessive pricing. This would have an adverse impact on both the ability of companies to compete in the downstream provision of leased lines services and on consumer choice and value for money. Our charge controls have been designed to address this risk while allowing BT the ability to recover its costs, including a reasonable return on investment.

19.391 As a result of the analysis set out above we consider the SMP condition is objectively justifiable.

19.392 We have set a value of X based on our assessment of forward-looking costs and on our forecasting assumptions as set out from paragraphs 19.158-19.204 and 19.213-19.308 respectively.

19.393 We have imposed sub-basket constraints on those services where we have identified a particular risk of excessive pricing as set out in paragraphs 19.57-19.104.

19.394 We have set out the basis on which we have decided to adopt the anchor pricing approach (see paragraphs 19.105-19.116)

19.395 We have conducted an analysis of which costs are common between the TI and Ethernet baskets as set out in paragraphs 19.309-19.367. Based on this analysis, we have reallocated £46m from the TI basket to the Ethernet basket.

The SMP condition does not discriminate unduly

19.396 The charge controls would not discriminate unduly against particular persons or a particular description of persons, since any CP (including BT itself) can access the services at the specified level of charges. We consider that the charge controls do not discriminate unduly against BT as the controls address BT's market position, including its incentive and ability to set excessive charges for services falling within the scope of the controls.

The SMP condition is proportionate

19.397 The charge controls are proportionate because they directly address the risk of excessive pricing identified by our market review and are focused on ensuring that there are reasonable prices for the services in question. The charge controls allow for BT to have the ability to make a reasonable return on investment and provide BT with the incentives to invest and develop its network.

19.398 For the reasons set out above, therefore, we consider the SMP condition is:

- appropriate to achieve the aim of addressing BT's ability and incentive to charge excessive prices for the services we have included in the TI basket control;
- necessary in that it does not, in our view, impose controls on the prices BT may charge for the services included in the TI basket control that go beyond what is required to achieve the aim of addressing BT's ability and incentive to charge excessive prices for these services; and
- such that it does not, in our view, produce adverse effects that are disproportionate to the aim pursued, which is to address BT's ability and incentive to charge excessive prices for the services we have included in the TI basket control.

The SMP condition is transparent

19.399 Finally, for reasons discussed above, we consider the SMP condition is transparent. Its aims and effect are clear and it has been drafted so as to secure maximum transparency. The text of the SMP condition has been published with this Statement. Its intended operation is also aided by our explanation in this Statement. We have also set out the likely impact of the TI basket control on charges for the duration of the control.

We have considered sections 3 and 4 of the Act

19.400 We also consider that the TI basket control furthers our duties under sections 3 and 4 of the Act.

19.401 Whilst our market analysis has shown the relevant wholesale TI markets are declining, we consider it appropriate and desirable to continue to further the interests of citizens in relation to communication matters and the interests of consumers in the downstream retail markets by promoting competition in the relevant wholesale TI markets. We consider that the TI basket control, which applies to specific services in the relevant wholesale TI markets, will achieve this and so also contribute to securing the availability throughout the United Kingdom of a wide range of electronic communications services.

19.402 We have also had regard in designing the TI basket control to the desirability of encouraging investment and innovation in the other wholesale markets in which we have found that we should impose a charge control and which therefore also form part of the set of decisions that we implement here. In addition, we have had regard to the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.

19.403 Finally, in performing our duty to further the interests of consumers, we have also had regard in designing the TI basket control, in particular, to the interests of those consumers in respect of choice, price, quality of service and value for money.

We have taken into account the EC Leased Lines Pricing Recommendation

19.404 The Leased Lines Pricing Recommendation relates to pricing aspects of wholesale leased lines part circuits and includes recommended EC Price Ceilings for leased line part circuits to "inform and guide a national regulatory authority ("NRA") as to how to apply the best current practices in leased lines provision when devising

regulatory remedies for leased line markets that are not effectively competitive in their territory".¹⁵⁴⁵

19.405 We have taken utmost account of the Leased Lines Pricing Recommendation when imposing our charge controls. The EC Price Ceilings are based on prices for leased lines part circuits from Member States in June 2004. Since then, however, both prices and costs have changed. Demand for TI leased lines has fallen significantly and this trend is forecast to continue. We expect customers to migrate from TI circuits to Ethernet and other technologies (see paragraphs 19.214-19.230), which is associated with a significant increase in the unit cost of TI services.

19.406 Given the above, we consider that the RFS data (as adjusted by Ofcom) is more relevant in setting prices for the next charge control period and that, given the changes in market conditions, the use of the EC Price Ceilings could result in prices below the efficient cost of provision. By using up-to-date cost accounting data from BT's RFS, the LLCC Model and our efficiency assessment, we consider that we have ensured that prices overall will be at an efficient level by the end of the charge control.

¹⁵⁴⁵ Explanatory Memorandum, page 6, available at http://ec.europa.eu/information_society/policy/ecom/comm/doc/library/recomm_guidelines/leased_lines/expmem_rec_1_part2_en.pdf

Section 20

Controls on Ethernet services

Introduction

- 20.1 In this Section we set out our conclusions on the charge controls for Ethernet services, which include the combination of wholesale AISBO services as well as wholesale MISBO single-service Ethernet above 1Gbit/s that are provided outside the WECLA and Hull. In particular, we discuss:
- the scope and design of the charge control basket;
 - our decisions to impose sub-basket constraints;
 - the adoption of the MEA approach for modelling the charge control on Ethernet services;
 - the cost adjustments to BT's base year costs in order to determine the relevant cost basis for forecasting purposes;
 - our approach to forecasting costs over the period of the charge control; and
 - the value of X for the basket of services.
- 20.2 We discuss our decisions to include a fair and reasonable pricing obligation, but not to impose an additional cost orientation obligation in relation to Ethernet and other services in Section 9.
- 20.3 This section follows the proposed framework for charge control design set out in Section 18, similarly with our proposals for the charge control for TI services in Section 19.

Summary of key decisions

We will impose a single Ethernet basket controlled at RPI-11%

- 20.4 We have decided to implement a single charge control basket covering AISBO and above 1Gbit/s Ethernet services outside the WECLA (the 'Ethernet basket'). We have also designed sub-baskets and sub-caps where we believe that the overall basket cap would not offer sufficient protection to customers.
- 20.5 Figure 20.1 below summarises the structure of the Ethernet basket with further details about the specific services falling within the basket, together with the sub-cap and sub-basket constraints.

Figure 20.1: The Ethernet basket controls¹⁵⁴⁶

Basket	Services within scope	Basket cap	Sub-cap and sub-basket constraints
Ethernet basket	<p>Connection and rental charges for: Wholesale low bandwidth AISBO services (up to and including 1Gbit/s) outside the WECLA</p> <p>Ethernet services (above 1Gbit/s) outside the WECLA</p> <p>Ethernet ancillary services (excluding ECCs)</p> <p>Interconnection services</p>	RPI-11%	<p>Sub-basket on interconnection services (RPI-11%)</p> <p>Sub-basket for EAD 1 Gbit/s (RPI-11%)</p> <p>Sub-cap on each and every charge (RPI-RPI)</p>

We have adopted the MEA approach when modelling Ethernet services

- 20.6 Our analysis suggests that it is appropriate to adopt the MEA approach for modelling Ethernet services. This will mean that we model legacy Ethernet services based on the most efficient technology that delivers the same service, to the same level of quality and to the same group of customers.¹⁵⁴⁷
- 20.7 In undertaking this modelling assumption, we recognise that where the MEA changes frequently, it may not be possible for even an efficient operator to adopt the MEA seamlessly at all points in time. We have therefore taken into account transition costs associated with the costs Openreach would incur in migrating customers from legacy to new Ethernet services.

We have made adjustments to BT's base year costs in 2011/12

- 20.8 We have adjusted the cost data provided by BT to ensure that these are representative of the relevant level of costs for forward looking charge control purposes. Those adjustments are comprised of:
- adjustments to reflect the composition of the basket for which we are explicitly forecasting costs (i.e. excluding those services that would not form part of the basket and including those that have not been reported but that we have included in the charge control); and
 - adjustments to provide a suitable basis for forecasting costs for the purposes of setting the charge control. This includes removing one-off or irregular levels of costs and revenues as well as adjustments to reflect how we expect BT to recover certain costs in the future.

We forecast costs associated with the Ethernet services

- 20.9 For the purposes of setting the value of X for the Ethernet basket, we forecast the costs of the main Ethernet services. Our cost forecasts are based on how different

¹⁵⁴⁶ Our proposals exclude the Hull area.

¹⁵⁴⁷ By legacy Ethernet, we mean services such as WES, WEES and BES services up to and including 1Gbit/s. We use the term 'new Ethernet services' to refer to the more modern and efficient services, such as EAD, EBD and BTL.

types of costs might vary with respect to the underlying volume changes, subject to assumptions such as efficiency, asset price changes and the WACC.

- 20.10 We have calculated what the revenues would be at the end of the charge control by multiplying service volumes by their respective prices. In effect, this is what the revenues would be in the absence of any price changes from current levels. We have then calculated the value of X so as to bring our forecast prices into line with our forecast costs in the final year of the charge control.

We have made a reallocation of certain costs from the TI basket to the Ethernet basket

- 20.11 Within our charge control modelling, we have reallocated £46m of costs from the TI basket to the Ethernet basket. This is because we consider that TI services would attract a declining allocation of certain costs (e.g. duct, fibre, management) as TI service volumes decline and Ethernet volumes rise. As explained in Annex 12, this change in allocation would not otherwise be captured by an approach to modelling the costs of separate baskets and so we need to make a specific adjustment.

Basket design

Separate TI and Ethernet baskets

The LLCC Consultation proposals

- 20.12 In the LLCC Consultation we proposed to maintain separate baskets for TI and Ethernet services. This reflected the conditions of the markets identified in the June BCMR Consultation and it was also consistent with BT's internal operating structure. Furthermore, we noted that these products had very different characteristics in terms of growth and costs.

Consultation responses

- 20.13 We received one response, from BT, in favour of our proposal to impose separate TI and Ethernet baskets.¹⁵⁴⁸ No other stakeholder commented on the proposal or raised any concerns.

Our response and conclusions

- 20.14 As proposed in the LLCC Consultation, we have decided to place TI and Ethernet services in separate baskets due to the differences in the markets identified in the market review, differences in terms of growth and costs and due to BT's operating structure.

A single basket for Ethernet services

The LLCC Consultation proposals

- 20.15 In the LLCC Consultation we proposed a single charge control basket, the Ethernet basket, for the following groups of services (as defined in SMP condition 5.3):

¹⁵⁴⁸ See BT non-confidential response to the LLCC Consultation, paragraph 1.b, page 12.

- wholesale low bandwidth AISBO services (up to and including 1Gbit/s) outside the WECLA – connection and rental;
- wholesale Ethernet services above 1Gbit/s outside the WECLA – connection and rental; and
- Ethernet ancillary services (excluding ECCs).

20.16 In addition, we proposed a sub-basket and a sub-cap on services for which we believed that a further safeguard would be necessary to effectively control their prices. They were:

- a sub-basket on interconnection services (i.e. BTL); and
- a sub-cap on all other charges within the Ethernet basket (i.e. all charges except interconnection services).

20.17 We explained in the LLCC Consultation that we based these proposals on the following considerations:

- **efficient pricing:** where the services being considered share substantial common costs, a single basket is more conducive to efficient pricing and cost recovery;
- **competition:** where the services being considered face different competitive conditions or BT does not use the same wholesale inputs as its rivals, placing them in the same charge control basket may give BT an incentive to set prices in a way that undermines competition; and
- **migration incentives:** where it is appropriate for BT to encourage migration from a legacy service to a more efficient service, placing the services in the same basket would allow BT the flexibility to do so.

20.18 We present below the analysis we conducted for the LLCC Consultation.

20.19 Among Ethernet services of different types and across different bandwidths there are substantial common costs. By placing the services in a single charge control basket, we would give Openreach the incentive to set prices and recover common costs in the most efficient way. If we were instead to create separate baskets for different types of Ethernet service or for each bandwidth, we would have to decide on the appropriate allocation of common costs to be recovered within each basket. Given the complexity of these allocations and the need for a certain degree of flexibility, we believed that it would be more appropriate for Openreach to determine how these costs should be recovered, under the overall charge control caps.

20.20 We noted that the CC supported Ofcom's LLCC 2009 decision not to 'micro-manage' BT's pricing structure. The CC stated that "in an industry with large common costs, the 'correct' cost of each product is very difficult to know"¹⁵⁴⁹ and that providing BT with the flexibility to price on a cost-reflective basis, subject to the sub-caps is "a

¹⁵⁴⁹ See paragraph 3.253 of the CC's determination on the Cable & Wireless UK appeal to the LLCC 2009, 20 September 2010. <http://www.catribunal.org.uk/237-4334/1112-3-3-09-Cable--Wireless-UK.html>

sensible division of powers... and reflected a considered judgement by Ofcom consonant with the purposes of the 2003 Act".¹⁵⁵⁰

- 20.21 We acknowledged that such flexibility may result in BT's pricing strategy towards the bandwidth gradients being different to the marginal cost gradient. However, we noted that this may be an efficient way to recover fixed and common costs, particularly when this is accompanied by decreasing average costs of bandwidth. In Annex 5 of the LLCC Consultation, we also assessed Openreach's current pricing structure and we considered that there was no clear strategic incentive to price in a distortionary and/or anti-competitive way in this particular respect.
- 20.22 Taking into account all of these considerations, we considered that it was appropriate to design a broad basket for these services, which provided a reasonable balance between giving Openreach the flexibility to allocate costs and set prices for services that share a substantial proportion of fixed and common costs in an efficient manner, and to impose the sub-basket restrictions to offset such flexibility in order to avoid or mitigate potential risks to competition.
- 20.23 We had proposed in the June BCMR Consultation that Ethernet services above 1Gbit/s fall in a different market to low bandwidth Ethernet (AISBO) services.¹⁵⁵¹ However, we explained in the LLCC Consultation that having a particular market definition does not mean that charge control baskets must be defined along the same lines. Services that fall into separate relevant markets can be combined in the same basket if the competitive conditions in the markets are sufficiently similar, such that a common basket cap would be appropriate.
- 20.24 Our research suggested that, whilst the competitive conditions were not completely homogeneous across the defined bandwidth break, there were some similarities in the competitive conditions, as shown in the Figure 20.2 below:

Figure 20.2: Competitive conditions for Ethernet services, as identified in the June BCMR Consultation¹⁵⁵²

Product market	Geographic scope	Openreach market share	Other indicators of market power
Low bandwidth AISBO (Up to and including 1Gbit/s)	UK excluding Hull & the WECLA	67%	<ul style="list-style-type: none"> High barriers to entry and expansion Relatively low value of services makes it difficult for OCPs to justify investments
MISBO (Above 1Gbit/s)	UK excluding Hull & the WECLA	59%	<ul style="list-style-type: none"> High barriers to entry and expansion BT benefits significantly from extent of existing access network infrastructure

- 20.25 High bandwidth (above 1Gbit/s) single-service Ethernet services were identified as a sub-set of the MISBO market, but the competitive conditions described in the table above reflect features of the market that were common across all services.
- 20.26 We noted that one of the differences in competitive conditions was the value of the services. High bandwidth Ethernet services generally have a greater value than low bandwidth Ethernet services and this may justify greater investment by competitors. This difference may suggest that there would be some reason for placing these

¹⁵⁵⁰ See paragraph 3.268 of the CC's determination.

¹⁵⁵¹ See paragraphs 4.52-4.101 of the June BCMR Consultation.

¹⁵⁵² See Table 63 on page 347 of the June BCMR Consultation.

Ethernet services in different charge control baskets. However, we did not consider that this differential was sufficient, as the estimates of Openreach's market shares outside the WECLA were only slightly lower for above 1Gbit/s services compared to low bandwidth Ethernet services.

- 20.27 We also considered whether there was a substantial difference in the extent to which different bandwidth services were sold to internal and external customers, such that BT did not consume the same wholesale inputs as its rivals. If this were the case, it may have been a reason for placing the services in different charge control baskets, since, if the services were placed under a single basket cap, BT may have an incentive to concentrate price cuts on internally consumed bandwidths and discriminate against external customers, leading to a distortion in competition. However we did not believe that this was a concern with regards to low bandwidth (up to and including 1Gbit/s) and high bandwidth (above 1Gbit/s) Ethernet services. Across the bandwidths, the majority of sales were to internal customers.¹⁵⁵³ Therefore, we did not consider that Openreach would have strategic incentives to discriminate in favour of either high or low bandwidth services if they were placed in a single charge control basket.
- 20.28 A broad basket may be advantageous where it is desirable to allow the firm to set prices to encourage efficient migration between an old technology and a new, replacement technology. Where the customer, rather than the firm, takes the decision to migrate, it can be optimal to set lower prices for services supplied using the new network than for services supplied using the old network.
- 20.29 In the LLCC Consultation we considered that it would be appropriate for Openreach to have the flexibility to encourage migration between different Ethernet services. The decision over whether to migrate to a new Ethernet service is made by customers and Openreach may need to structure prices to encourage migration where it is efficient to do so. This would require the two types of service to be placed in the same charge control basket.
- 20.30 We also explained that this would be consistent with our proposals to adopt the MEA approach to pricing, which involves modelling legacy services (such as WES and BES) on the basis of the most efficient way of delivering the service. We noted that, if the services were kept in separate charge control baskets, the ability of Openreach to set relative prices would be restricted. Therefore, we considered that allowing for migration incentives would, in principle, support the case for having a broad Ethernet basket.

Consultation responses

- 20.31 Several stakeholders responded on our proposal regarding the design of a relatively broad basket for Ethernet services. Although BT was in favour of a broad basket, several other stakeholders expressed concerns.
- 20.32 BT supported our proposal for broad baskets. BT said that "broad baskets provide vital pricing flexibility which is needed to react to changing customer and market demand as well as technological advance". BT added that it is appropriate in its view, given the high degree of uncertainty about the precise volume and mix of services covered by the AI basket going forward, that Ofcom's proposal for a broad basket is

¹⁵⁵³ External rentals made up 36.3% of total OR's rentals for low bandwidth services in 2010/11 and we forecast this proportion to fall slightly by 2015/16. For high bandwidth Ethernet services, the proportion of external rentals was 31% in 2010/11 and this was forecast to decrease by 2015/16.

maintained.¹⁵⁵⁴ BT also said that “combining legacy and new technology products within a basket gives the ability to price flexibly between products to encourage migration, which we [BT] welcome”.¹⁵⁵⁵

- 20.33 By contrast, CWW, Sky, UKCTA (whose response included a report produced by its consultants, AlixPartners), Colt, Level 3, TalkTalk, Virgin and Verizon all expressed reservations about our basket design. CWW, Virgin, TalkTalk, UKCTA and Colt expressed concerns that BT would be able to ‘game’ the control by setting higher prices for less competitive services, or those services used disproportionately by its competitors, and lower for its own business.¹⁵⁵⁶ AlixPartners (in its report for UKCTA) cited WES as an example of a product where BT had an incentive to increase relative prices.¹⁵⁵⁷ Sky suggested that we “should consider applying more sub-baskets and aligning sub-caps more closely with the overall basket cap”.¹⁵⁵⁸ However, it did not make any specific proposals. CWW suggested that we should review the sub-baskets and sub-caps should be made tighter to restrict the possibility of prices being set too high or too low.¹⁵⁵⁹
- 20.34 Colt, UKCTA and TalkTalk, disputed the benefits of pricing flexibility. AlixPartners (in its report on behalf of UKCTA) claimed that there may be significant common costs that relate only to a subset of services. For example, access and backhaul did not share common costs and so the basket was more flexible than required for efficient cost recovery.¹⁵⁶⁰
- 20.35 Colt believed that arguments for pricing flexibility that allowed an efficient recovery of costs were applied primarily to retail markets and, since demand for wholesale inputs was a derived demand, it was not obvious that there would be any efficiency gains from allowing flexible price setting in wholesale markets.¹⁵⁶¹
- 20.36 TalkTalk, although supporting the use of basket controls as opposed to individual product controls¹⁵⁶², argued that there was little opportunity for Ramsey-based pricing efficiency, due to three reasons:
- the level of shared costs within the basket was limited, particularly in the case of access and backhaul circuits, which used different parts of the duct/fibre network¹⁵⁶³;
 - any benefit to Ramsey pricing would be small, since the relevant retail price elasticities are not very different. TalkTalk argued that the retail price elasticities

¹⁵⁵⁴ See BT non-confidential response to the LLCC Consultation, paragraph 9.a, page 6.

¹⁵⁵⁵ See BT non-confidential response to the LLCC Consultation, paragraph 4, page 18.

¹⁵⁵⁶ See CWW response to the LLCC Consultation, paragraph 15.23, page 70; Colt non-confidential response to the LLCC Consultation, section 3, pages 6-7, TalkTalk non-confidential response to the LLCC Consultation, paragraphs 3.6-3.9, page 14, Virgin non-confidential response to the LLCC Consultation, paragraphs 8-13, pages 7-8, AlixPartners report on behalf of UKTA, response to the LLCC Consultation, paragraph 1.8, page 4.

¹⁵⁵⁷ See AlixPartners (on behalf of UKTA), response to the LLCC Consultation, paragraph 1.15, page 6.

¹⁵⁵⁸ See Sky non-confidential response to the LLCC Consultation, paragraph 2.a), page 1.

¹⁵⁵⁹ See CWW response to the LLCC Consultation, paragraph 4.43.

¹⁵⁶⁰ See AlixPartners (on behalf of UKTA) response to the LLCC Consultation, paragraph 3.17, page 16.

¹⁵⁶¹ See Colt non-confidential response to the LLCC Consultation, section 3, page 6.

¹⁵⁶² See TalkTalkTalkTalk non-confidential response to the LLCC Consultation, paragraph 3.35.

¹⁵⁶³ AlixPartners also made a similar point in their paper on behalf of UKTA, see paragraph 3.17, page 16.

were key for Ramsey pricing, rather than the wholesale price elasticity per se; and

- there was no evidence that Openreach had access to the relevant retail price elasticity data that would be necessary to set Ramsey prices.¹⁵⁶⁴

20.37 Verizon similarly suggested that in order for BT to be able to utilise the flexibility provided to price efficiently, excellent knowledge of elasticities is required. It states that “both Ofcom (in designing baskets) and BT (in implementing its pricing)” would require this information but that there has not been a suggestion that we have considered this point.¹⁵⁶⁵

20.38 Level 3 expressed concerns that the proposed basket and sub-basket arrangement would “give [BT] too much flexibility to influence the market.”¹⁵⁶⁶

Our response and conclusions

20.39 Several stakeholders claimed that the basket structure was broad and afforded BT too much scope to distort downstream competition by engaging in pricing discrimination practices between services which are purchased internally and externally.

20.40 In light of this, we have re-examined the issue and believe the case for broad basket still holds. We considered that a broad basket has benefits for recovering fixed and common costs as it allows BT to decide how these costs should be recovered, subject to the controls that we propose. A broad basket also allows BT flexibility to determine price structures which encourage migration from legacy products to new, more efficient products.¹⁵⁶⁷

20.41 In the LLCC Consultation, we noted that the charge control baskets are broad and include a mixture of different products and services. We considered that there were advantages of these broad baskets, in that they give BT some pricing freedom to determine the structure of prices to meet the charge control. We cited that this could be of benefit in recovering fixed and common costs, in allowing BT to respond to changes in demand and costs, and where it is desirable to allow BT to set a pricing structure which encourages migration to a new service.¹⁵⁶⁸

20.42 We note that some stakeholders disputed the potential benefits of pricing flexibility. For example, they disputed whether the costs were truly common or whether BT had sufficient information on pricing elasticities to set efficient prices, or even whether information on pricing elasticities was relevant for wholesale prices. We have evaluated these concerns.

20.43 First, we note that it may be true that not all costs are common. For example, it is possible that access and backhaul products may use largely separate duct and fibre. However, even if some costs are not common, other cost categories e.g. land and buildings, and operational costs e.g. management, power, transport are shared

¹⁵⁶⁴ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 3.19, page 16-17.

¹⁵⁶⁵ See Verizon non-confidential response to the LLCC Consultation, page 8.

¹⁵⁶⁶ See Level 3 non-confidential response to the LLCC Consultation, page 6.

¹⁵⁶⁷ See paragraphs 6.20 to 6.33 of the LLCC Consultation,

¹⁵⁶⁸ See paragraphs 4.10 to 4.13 of the LLCC Consultation.

between access and backhaul products. We therefore consider that there is still benefit in pricing flexibility to recover common costs.

- 20.44 Second, we note that wholesale demand is derived from retail demand. If the retail price elasticity is high, this will also tend, all other things being equal, to a higher wholesale elasticity. We accept that BT may not be able to estimate the pricing elasticity of each product accurately. However, we consider it likely that it would be able to estimate which tariff structures expand its output by more than others as a result of experience. There is therefore still benefit in having pricing flexibility between different products, even in the absence of precise estimates of individual elasticities. We also consider that Ofcom is unlikely to be able to make a better estimate of the appropriate pricing structure.
- 20.45 Thirdly, we also note that the objections do not cover all the benefits cited for pricing flexibility. We consider that different cost trends for different products and the need to encourage migration between products are also benefits of pricing flexibility which are relevant to the present control. Specifically, the need to encourage migration from legacy to new products, as well as different trends in costs between products may mean that BT may need to change the relative pricing structure between products.
- 20.46 In the LLCC Consultation, we acknowledged that there were potential disadvantages to this pricing flexibility. In particular, we noted that, “in some circumstances, the flexibility to set relative charges can be exploited by the regulated firm to harm competition.”¹⁵⁶⁹ We identified two main risks as set out below.
- The dominant firm may set lower prices for products where it faces more competition and higher prices for those which are less competitive.
 - The dominant firm may set prices to favour its downstream operations, for example, by setting lower prices for products which are used mainly by its downstream operations and higher prices for those which are purchased by competitors.
- 20.47 We have undertaken an analysis of where such risks may apply and have proposed sub-baskets and or sub-caps to deal with these risks. As set out in Section 18, we have analysed whether the supply of any particular services are more competitive than others, and whether some services are purchased more by external purchasers than others.
- 20.48 As noted in the LLCC Consultation, we have analysed whether BT has strategic incentives to change the prices of one bandwidth relative to another.
- 20.49 BT’s service share for 1 Gbit/s services outside WECLA is 69%, which is only very slightly lower than its overall AISBO market share as a whole at 74%. BT’s market share in MISBO outside WECLA is 57%. These market shares are high and suggest that BT faces limited competition for each set of services. Although BT’s market share for MISBO is lower than for AISBO, it is still high in absolute terms, suggesting that BT faces limited competitive pressure. We also note that MI services account for only a small proportion of the Ethernet basket, such that any decision to concentrate price reductions on MI services would not materially impact the control on AI Low services.

¹⁵⁶⁹ See paragraph 4.15 of the LLCC Consultation.

- 20.50 In relation to the internal/external split, we note that in 2011/12, 61% of 1 Gbit/s sales were internal, compared to 66% for AI Low as a whole.¹⁵⁷⁰ These proportions are not forecast to materially change over the control. In relation to above 1 Gbit/s services, we note that the internal proportion of WES services in 2011/12 is similar to that of AI Low services, although BES services have a higher proportion of external sales. This suggests that BT may have an incentive to increase the prices for BES relative to other Ethernet services. We discuss this in more detail below. However, with the exception of BES services, the proportions of internal Ethernet sales are similar across bandwidths. This suggests that, if both high and low bandwidth services were present in a single charge control basket, BT would not have incentives to discriminate in favour of either due to a difference in relative competitive conditions.¹⁵⁷¹
- 20.51 We have noted that BT may seek to comply with the control by noting which products are purchased proportionately more by external CPs and in complying with the control may reduce prices on products which are mainly purchased by its internal operations and reduce prices by less on those products mainly purchased by its competitors. This could place BT at a competitive advantage relative to CPs.
- 20.52 In order to be able to comply with the charge control by concentrating price reductions on services which it purchases internally, BT must be able to reduce the prices of products mainly purchased by CPs by less than those mainly purchased by BT. This means that if the prices of the products mainly consumed externally are controlled, BT's scope for such strategic behaviour is limited. Within the Ethernet basket, there are two categories of product which are mainly purchased by CPs.¹⁵⁷² These products are Bulk Transport Link, and the legacy BES and WES products. We have considered the case for a sub-cap on each of these products. We have also considered the case for additional controls on 1 Gbit/s Ethernet services.

Sub-baskets and sub-caps

The LLCC Consultation proposals

- 20.53 In the LLCC Consultation, we proposed two sub-caps within the Ethernet basket where we believed that a further safeguard might be necessary to effectively control the prices of certain services. They were:
- a sub-basket on interconnection services (i.e. BTL); and
 - a sub-cap on all other charges within the Ethernet basket (i.e. all charges except interconnection services).

Interconnection services

- 20.54 In the LLCC Consultation we set out the basis for our proposal to impose a sub-basket cap for interconnection services.
- 20.55 We explained that, in order to consume wholesale access services, CPs need to be able to interconnect their network with that of BT. This interconnection is thus essential for any wholesale remedy to be effective.

¹⁵⁷⁰ Ofcom analysis of circuit rental volumes.

¹⁵⁷¹ See paragraphs 6.26 to 6.30 of the LLCC Consultation.

¹⁵⁷² This means that more than 50% of volumes were sold to CPs in 2011/12.

20.56 As explained in section 6 of the LLCC Consultation, for wholesale AISBO services, BT currently offers the following types of interconnection.

- Customer-Sited Handover ('CSH'). BT provides two types.
 - Without aggregation: BT terminates individual circuits at the CP's site without aggregation (i.e. interconnection is part of the service and there is not separate interconnection link). This method is commonly used for WES and EAD circuits.
 - With aggregation: BT supplies Bulk Transport Link ('BTL') which aggregates multiple EBD services for delivery over a single interconnection link to the CP's site. As with TISBO CSH BT provides a POC at the site of the interconnecting communications provider. In order to do so, BT has to extend its network out to the point of interconnection and provide a CSH link along with CSH POC equipment.
- In Building Handover ('IBH'): BT provides a POC at collocation space rented by a CP in a BT local exchange. Currently BT terminates individual circuits in the collocation space without aggregation.

20.57 CPs do not need to purchase a specific interconnection product from BT to connect EAD and WES circuits to their network. Both IBH and CSH (without aggregation) are already incorporated within the EAD and WES circuits.

20.58 However, CPs who wish to aggregate multiple EBD circuits at a customer site need to purchase the BTL product. The take-up of BTL was low, with just 41 BTL circuits in 2010/11.¹⁵⁷³ We forecast this to fall to zero by the end of the charge control period.

20.59 Given that there are similarities in the characteristics of BTL products with the interconnection products in the TI market, we considered three different options for the pricing of BTL:

- **option 1**: no separate charge for interconnection products and recover costs across all products;
- **option 2**: BTL prices recover FACs including an allocation of common costs; or
- **option 3**: BTL prices set based on LRIC.

20.60 Option 1, of having no separate charge for interconnection products and instead recovering all costs across other products would mean that OCPs would be able to receive BTL services at no direct cost with the cost being recovered through all relevant leased line rentals. Although this would mean that OCPs would not be at a competitive disadvantage to BT, OCPs would have no incentive to minimise the costs associated with the provision of BTL. We considered that this would be likely to lead to static inefficiency as it would remove the incentives for OCPs to co-locate at OHPs even where this might be an economically efficient option. As a result too many BTLs could be purchased. We therefore proposed that interconnection charges should relate to costs (either option 2 or option 3).

20.61 Option 2 would mean that the charges for BTL would make a contribution to common costs, which would avoid the static inefficiency of option 1. However, since only

¹⁵⁷³Openreach response to S135 Notice of 25 May 2012.

OCPs need to purchase BTL, whilst BT does not, this option would place OCPs at a competitive disadvantage relative to BT.

- 20.62 Option 3, setting BTL prices to LRIC would result in lower BTL prices than option 2. We considered that this made it superior on competition grounds. In terms of efficiency, we explained that it would be superior to option 1 and similar to option 2, since OCPs would have an incentive to minimise BTL costs and only purchase them when the benefits exceeded the costs. Although option 3 would mean that BTL would not contribute to common costs (unlike option 2), it was not clear that there was any difference in overall efficiency. BT would still recover its common costs from other products. We therefore considered that charges for BTL should be set equal to the LRIC of those products.
- 20.63 We requested BT to provide us with a breakdown of its BTL costs. BT explained that due to the way its system allocates costs and the small volume of BTL purchased, it was unable to break these costs down any further.¹⁵⁷⁴ In order to set BTL charges to LRIC values we would therefore have needed to undertake a detailed bottom-up modelling exercise, such as that which was undertaken for the POH statement.¹⁵⁷⁵
- 20.64 In deciding whether to undertake such a modelling exercise, we were mindful of the proportionality of such an exercise. BTL volumes are currently very low, and are forecast by BT to fall to zero. We also noted that the BCMR Consultation proposed that BT should consider the development of new AISBO CSH, IBH and In-Span Handover (ISH) products.¹⁵⁷⁶ We anticipated that, if successfully developed, take-up of these new products would be higher than that of BTL. Our experience on the POH statement showed that constructing our own LRIC estimate involves significant resources. Given the historical and projected BTL volumes, and the BCMR Consultation proposals on interconnection, we considered that such a modelling exercise would be disproportionate.
- 20.65 Nonetheless, we noted that BT may have had an incentive to increase the price for BTL, as it is only purchased by OCPs and that there was a possibility that the low volumes purchased of BTL could be influenced by its price levels exceeding LRIC.
- 20.66 We therefore proposed to set a sub-basket to cover BTL products at the same level as the overall Ethernet basket cap. We considered that this would achieve an appropriate balance between the importance of the product for competition and cost recovery. We explained that, by reducing the price of the product, the competitive disadvantage OCPs face relative to BT would be reduced. Also, in relation to cost recovery, since we forecast BTL volumes to be zero by 2013/14, the BTL sub-cap should not jeopardise cost recovery. Even if volumes turned out to be higher, they would be likely to be small in relation to overall Ethernet volumes and so unlikely to jeopardise cost recovery. As BTL would have a small weight in the basket, any difference between BTL charges and the LRIC for BTL could be recouped through other services.

¹⁵⁷⁴ BT Group response to S135 Notice of 1 July 2011.

¹⁵⁷⁵ LLCC PPC Points of Handover pricing review September 2011 - Final Statement on modification of SMP Conditions. Available at:
<http://stakeholders.ofcom.org.uk/consultations/revision-points-handover-pricing/final-statement/>

¹⁵⁷⁶ See paragraphs 13.31-13.33 of the BCMR Consultation.

A sub-cap on charges for all other services within the Ethernet basket

- 20.67 We proposed to set a sub-cap to cover the charges for all other services within the Ethernet basket, excluding those already covered under the interconnection sub-basket. This would limit Openreach's ability to increase the prices of particular services in any given year. We applied the same rationale as that outlined for the TI basket in proposing this type of sub-cap. As with TI services, the level of the sub-cap was based on judgment as to what level would balance our objectives appropriately.
- 20.68 We proposed to set this cap at RPI-RPI (no nominal price increases) and apply it to all services in the Ethernet basket that were not otherwise controlled under the sub-basket.¹⁵⁷⁷ We also specified that, if RPI were to increase significantly to above 5%, the cap should adjust to RPI-5% to avoid the differential between the basket cap and the sub-cap becoming too small. We believed that this would maintain a certain degree of flexibility for Openreach to balance charges and recover costs in the way that it judged to be efficient, whilst restricting its ability to increase any given charge. Given the proposed value of X for the basket, and our assessment of starting charges, we considered that there would be no need for Openreach to increase any charge in nominal terms.
- 20.69 We also explained that our proposal was based on the basket cap being set around the middle of the consulted range and that we would take into account any changes to this level between our consultation and the Statement.

Backhaul Extensions Services (BES)

- 20.70 The LLCC 2009 set a sub-basket for BES services (RPI-0%). In the LLCC Consultation we considered whether it would be appropriate to continue to impose such a sub-basket within our proposed Ethernet basket. We considered that it would be unnecessary and inconsistent with appropriate migration incentives.
- 20.71 BES services are largely sold to external customers and we forecast this to remain the case over the course of the proposed charge control. We explained that, when a service is mainly sold to external customers, this may give the dominant provider an incentive to set prices in a way that discriminates against these customers. However, in the case of the Ethernet basket, we noted the importance of taking into account the consistency of any sub-caps with allowing Openreach the flexibility to encourage efficient migration. In particular, although our MEA approach would allow BT to only recover the costs of new Ethernet services, a price differential between legacy and new Ethernet services¹⁵⁷⁸ may be more consistent with dynamic efficiency, as it may lead to economies of scale by encouraging customers to migrate to the new network.
- 20.72 We were also proposing to include the legacy and new technologies in the same charge control basket. This meant that Openreach would have the flexibility to set relative prices for legacy WES and BES services and new Ethernet services (such as EAD and EBD) to reflect cost differences and to encourage optimal migration patterns.
- 20.73 We explained that, if we were to impose a sub-basket control on BES products, this may detract from Openreach's ability to encourage efficient migration by limiting

¹⁵⁷⁷ This would mean that the cap would apply to all services in the Ethernet basket except for interconnection services.

¹⁵⁷⁸ By legacy Ethernet, we mean services such as WES, WEES and BES. By new Ethernet we mean services such as EAD, EBD and BTL.

Openreach's flexibility to determine the optimal pricing structure. For example, if a sub-basket constraint required BES prices to reduce significantly in real terms, it could discourage customers from moving to more efficient services. It may also mean that Openreach would not benefit from economies of scale.

- 20.74 Based on the above, we considered that it would not be appropriate in this case to place a specific sub-basket control on BES services and that our general sub-cap to cover all charges other than interconnection products (at RPI-RPI) would be sufficient to protect BES customers.

Ancillary services

- 20.75 Ancillary services are payments that Openreach levies from customers for other services used in the provision of core Ethernet services. They have traditionally comprised of services such as ECCs, circuit upgrades and migrations and additional resilience options.
- 20.76 In the LLCC Consultation, we discussed our proposal to remove ECCs from the list of ancillary services and impose a separate charge control on them. ECCs previously accounted for the majority of ancillary services revenues and, based on our analysis of the size of these services, we believed that it would be disproportionate and impractical to still have a separate basket for the remaining ancillary services. Instead, we proposed to include ancillary charges within the main Ethernet basket.
- 20.77 We noted that there may be some concern that, due to the low weight associated with ancillary services, including them within the main Ethernet basket without any further safeguard may not result in an effective control of their prices.
- 20.78 We considered that our proposal for a sub-cap on each charge within the Ethernet basket (discussed above) would address these concerns. Given that it is a cap on each charge, rather than a sub-basket constraint on the overall group of products, it would cover the diverse and individualised nature of the various ancillary services sold by Openreach and would have the merit of being easy to monitor and for Openreach to demonstrate compliance.
- 20.79 Finally, we also considered whether Time Related Charges (TRCs), which are also ancillary services, should be within the scope of the proposed charge control for Ethernet services.
- 20.80 TRCs relate to the provision of services such as faults repair, providing or rearranging services where the work is not covered within Openreach's terms of service.¹⁵⁷⁹ TRCs are provided across different markets and not just for Ethernet services. TRCs can be charged on a per engineer visit or per hour basis or per items used to provide or repair services. TRCs can also vary depending on when the work takes place.
- 20.81 The majority of TRC revenue comes from services other than Ethernet. For example, the TRC revenue associated with the Ethernet services constituted less than 1% of the overall Ethernet revenues.¹⁵⁸⁰ Currently, Openreach applies the same price regardless of whether the work is carried out for WLR, LLU or Ethernet services. We

¹⁵⁷⁹ See

<http://www.openreach.co.uk/orpg/home/products/serviceproducts/timerelatedcharges/timerelatedcharges/downloads/TRCs.pdf>.

¹⁵⁸⁰ This is based on the revenues for 2010/11.

also noted that TRCs are already subject to a cost orientation obligation as set out in the WLR LLU CC.¹⁵⁸¹ We therefore considered that any further regulation would not be proportionate, as the pricing of TRCs related to services within the scope of the LLCC would already be constrained by the regulatory constraints within the other markets in which Openreach offers TRCs.

- 20.82 In light of the above, we proposed that TRCs should remain outside the scope of the charge control.
- 20.83 However, we also stated that, if Openreach were to discriminate between types of product user to distort competition between users, we would consider whether more direct intervention was warranted.

Synchronised Ethernet services

- 20.84 In the LLCC Consultation, we discussed a specific variant of the EAD services, known as SyncE, that BT was due to launch.¹⁵⁸² In addition to providing the standard features of an EAD service, SyncE would allow the distribution and monitoring of accurate network timing over Ethernet.
- 20.85 We noted that, whilst EAD was already within the scope of the charge control, if we did not also include any additional charges for SyncE variants in the charge control, there would be a risk that BT could price these services excessively. We wanted to ensure that we have ex-ante regulatory measures in place to prevent this happening, including the ability to intervene in a timely manner.
- 20.86 We considered it appropriate for the SyncE variant of EAD to fall within the scope of the Ethernet basket, and we therefore expected that SyncE services were likely to be included in the Ethernet basket. We considered that this protection was needed to ensure that BT would not set excessive charges for SyncE services on an ongoing basis.
- 20.87 We discussed BT's plan for the launch of the SyncE variant of EAD, which was set for a date between our Consultation and the publication of our Statement. We stated that, at the point when BT confirmed the launch and pricing of SyncE, we would consider whether to put forward a short consultation to propose the inclusion of the relevant SyncE services within the basket, including the need for any start charge adjustments.

Consultation responses

Interconnection services

- 20.88 We received one comment on our proposal to set a sub-basket to cover BTL products at the same level as the overall Ethernet basket cap. BT said that they "see the rationale for a sub-basket for Interconnection Services, as the BTL products are important to support competitive backhaul provision for CPs".¹⁵⁸³

¹⁵⁸¹ See paragraphs 4.322 to 4.342 of the WLR LLU CC Statement published on 7 March 2012 available at <http://stakeholders.ofcom.org.uk/consultations/wlr-cc-2011/statement-march2012/>

¹⁵⁸² See <http://www.openreach.co.uk/orpg/aboutus/refineSearch.do?navigationGroup=Updates&navigationId=4294967252&queryRefins=qi%3Asynchronous%2Bethernet%5Bsk%3AAI&searchSection=all&sortType=relevance>

¹⁵⁸³ See BT non-confidential response to the LLCC Consultation, paragraphs 5, page 19.

BES

- 20.89 Several stakeholders responded to our proposal of not having a sub-basket cap applied to BES services.
- 20.90 Sky and CWW expressed concerns about our proposals to not have a sub-cap on BES prices. Sky argued that BT has an incentive to distort competition in retail broadband markets by maintaining relatively higher prices for BES and EBD”.¹⁵⁸⁴ Sky said that “BES customers need protection from excessive prices, not rising prices” and that “BES prices could be falling and still be excessive”.¹⁵⁸⁵ CWW argued that it was possible that the BES price would be above DSAC by the end of the control”.¹⁵⁸⁶ TalkTalk recommended that we should “create a separate sub-cap on a basket consisting of BES and EBD services set at RPI-8%”. TalkTalk argued that our logic for rejecting a sub-cap on BES products does not apply to a sub-basket containing BES and EBD products.¹⁵⁸⁷

1 Gbit/s Ethernet

- 20.91 Telefónica raised concerns that there was a single basket for all bandwidths of Ethernet services. Telefónica was concerned that the charge control structure failed to protect mobile operators against the excessive pricing of 1Gbit/s circuits. [X].¹⁵⁸⁸ Whilst the broad Ethernet basket constrained the overall basket of BT's Ethernet products, this would also allow BT to price 1Gbit/s circuits at their current level because the Ethernet sub-cap is set at RPI-RPI. In the same way that RBS was subject to a specific sub cap, Telefónica believed that there should be a specific sub cap for 1Gbit/s circuits set at no less than the RPI-X% level of the overall Ethernet basket.¹⁵⁸⁹

A sub-cap on charges for all other services within the Ethernet basket

- 20.92 Several stakeholders responded to our proposal for a sub-cap on charges for all other services within the Ethernet basket. Sky and Verizon both considered the proposed cap of RPI-RPI on each charge too loose given the proposal of RPI-12% for the overall basket.¹⁵⁹⁰¹⁵⁹¹ TalkTalk believed that the sub-cap that we proposed to set at RPI-RPI would be too loose and proposed a “general sub-cap (i.e. on all products) at RPI-6%”.¹⁵⁹²
- 20.93 By contrast, BT argued that the proposed sub-cap was too restrictive, given the need to migrate customers from legacy to new services. BT said that under the proposed control, migration is only possible by changing the relative prices by reducing the price of new products more than existing products. BT requested that “the sub cap

¹⁵⁸⁴ See Sky non-confidential response to the LLCC Consultation, paragraph 26, page 6.

¹⁵⁸⁵ See Sky non-confidential response to the LLCC Consultation, paragraph 25, page 6.

¹⁵⁸⁶ See CWW response to the LLCC Consultation, paragraph 4.8a), page 8-9.

¹⁵⁸⁷ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 3.36, page 21.

¹⁵⁸⁸ [X].

¹⁵⁸⁹ See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 113, page 36.

¹⁵⁹⁰ See Sky non-confidential response to the LLCC Consultation, paragraph 29c), page 7.

¹⁵⁹¹ See Verizon response to the LLCC Consultation, page 10.

¹⁵⁹² See TalkTalk non-confidential response to the LLCC Consultation, paragraph 3.36, page 21.

[RPI-RPI] should either not be applied to legacy products or it should be increased to RPI-0%”.¹⁵⁹³

Ancillary services

- 20.94 Two stakeholders responded to our proposal of having the ancillary services included in the main Ethernet basket. Telefónica queried whether and how the approach on Ethernet ancillary services differed from that applied to TI ancillary services.¹⁵⁹⁴
- 20.95 BT disagreed with our proposal of including the ancillary services in the main Ethernet basket. BT claimed that it had “limited information on volumes, revenues or costs” for each individual ancillary item, many of which have zero volumes against them in a given year. BT claimed that it would be disproportionately complex to have to demonstrate compliance on these services within a basket control. Instead BT proposed that ancillaries should be excluded from the main basket and subject to a sub cap only.¹⁵⁹⁵

Synchronised Ethernet services

- 20.96 Telefónica supported our proposal to regulate SyncE. EE and MBLN agreed with our proposal that the SyncE variant of EAD is likely to fall within the scope of the Ethernet basket. EE and MBLN expressed concerns that BT would seek to pass on the costs of developing synchronised functionality in the absence of a tighter sub cap on these products”.¹⁵⁹⁶

Our response and conclusions

- 20.97 We have carefully considered stakeholders’ concerns about the Ethernet basket in response to the LLCC Consultation. Below, we respond to each of the main stakeholder arguments in turn.

Interconnection services

- 20.98 As noted in the LLCC Consultation, BTL is an interconnection product purchased only by CPs. We propose to continue with our proposal to have a sub-basket for interconnection services (i.e. BTL), with a control at the same level as the overall Ethernet basket. As set out in the LLCC Consultation, we consider that such a control is appropriate given the importance of interconnection products for competition.

BES

- 20.99 Several stakeholders have noted that BT has an incentive to increase relative prices of products that are mainly purchased externally, or where BT faces more competition. In particular, stakeholders have suggested that BT may have an incentive to increase prices for BES, which is mainly purchased externally. We acknowledged this risk in our consultation, but concluded that a tighter control than RPI-RPI would be inconsistent with migration. In particular, BES is a legacy product and we consider that it is appropriate for BT to be able to give pricing signals consistent with migration to new, more efficient products.

¹⁵⁹³ See BT non-confidential response to the LLCC Consultation, paragraphs 10-11, page 19.

¹⁵⁹⁴ See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 127, pp 39-40.

¹⁵⁹⁵ See BT non-confidential response to the LLCC Consultation, paragraph 14, page 20.

¹⁵⁹⁶ See EE and MBLN non-confidential response to the LLCC Consultation, page 20 and 21.

20.100 We have re-evaluated our control on BES in light of the LLCC Consultation responses. First, we note that due to the expected decrease in BES volume, we anticipate on average the unit costs of BES products will increase during the charge period. If we were to impose a tighter control than RPI-RPI on BES, we would require Openreach to reduce prices on a product for which costs are rising. Second, we note that it is efficient for BT to incentivise migration from legacy products such as BES to new Ethernet products. A sub-cap on BES closer to the overall Ethernet basket would not be consistent with such migration incentives.

20.101 TalkTalk has suggested a combined BES and EBD basket with a sub-cap at RPI-8%, which it claims would be consistent with migration incentives. We consider that if it were the case that most BES customers were migrating to EBD, then this suggestion would have merit. Such a combined backhaul basket would protect backhaul customers, and be consistent with migration incentives. However, we have examined the forecast trend in BES and EBD volumes and concluded that this is not likely to be the case. Our analysis suggests that the vast majority of BES customers are likely to migrate to products other than EBD (including EAD and OSA).¹⁵⁹⁷ Given this circumstance, we do not consider that there is a strong reason for combining BES and EBD in a sub-basket. We also consider that the control on each and every charge of RPI-RPI is sufficient to protect BES customers.

20.102 CWW raised concerns that the DSAC for BES may fall over the charge control period, such that prices may be above DSAC for BES by the end of the control. We have examined this concern. Over the course of the charge control, BES is expected to be a declining product. Indeed, it is already withdrawn from new supply for bandwidths up to and including 1Gbit/s. Due to the forecast declining volumes, we forecast that unit costs for BES will rise rather than fall over the charge control period. As a result we forecast that the DSAC for BES will rise from its current level. As the starting price for BES is currently below DSAC, we therefore forecast that the sub-cap of RPI-RPI is sufficient to address the risk of excessive pricing.

WES

20.103 The report by AlixPartners on behalf of UKCTA also listed WES service as a service which may be proportionately more important for CPs than for BT. We note that in 2011/12, the majority of purchases of WES services were for internal BT consumption. Nonetheless, we have considered whether it would be appropriate to impose a sub-cap on WES.

20.104 As with BES services, WES (up to 1Gbit/s) are legacy products which have been withdrawn from new supply. As WES volumes decline over the charge control period, we anticipate that the unit costs of WES products will increase. We also consider that it is efficient for BT to incentivise migration from legacy products such as WES to new Ethernet products. A sub-cap on WES closer to the overall Ethernet basket would not be consistent with such migration incentives. We therefore consider that a sub-cap of RPI-RPI would strike an appropriate balance between protecting WES customers, whilst allowing BT to set pricing structures consistent with migration to more efficient technologies.

¹⁵⁹⁷ We forecast that from 2011/12 to 2015/16, migration to EBD will account for less than half the decline in BES volumes.

1 Gbit/s EAD services

20.105 Telefónica proposed a sub-cap on 1Gbit/s EAD services to protect mobile operators. We have re-examined the data on the internal/external split and market shares. We note that BT's market share for 1Gbit/s services outside WECLA is 69%, which is only marginally lower than its 74% market share for AISBO as a whole. We also note that in Section 4, we have found 1 Gbit/s services form part of a single market for the supply of wholesale low bandwidth AISBO services. This suggests that there is only a limited difference in competitive conditions between 1Gbit/s and other AI services.

20.106 We have also examined the internal and external split for 1Gbit/s services. This share is not materially different from other Ethernet services.

20.107 In order to verify whether the basket design is sufficient to address the risk of excessive pricing, we have forecast DSAC for the duration of the charge control, using the data in the RFS, and our forecasting model. The starting price for 1Gbit/s EAD is close to DSAC, suggesting that it is close to a level which could give rise to competitive distortions. Given our forecasts of the movement of 1Gbit/s EAD costs, we forecast that EAD 1Gbit/s prices would need to reduce each year by a value close to the basket cap in real terms to remain below DSAC throughout the charge control.

20.108 Given our analysis of the current and forecast level of DSAC, we have considered that the price of EAD 1Gbit/s services may not be adequately constrained by the overall basket control.

20.109 We have therefore decided to create a sub-basket for EAD 1Gbit/s products, with a controlling percentage in line with the overall cap for the Ethernet basket. This constraint will address the risk of excessive pricing for this service.

A sub-cap on charges on all services within the Ethernet basket

20.110 A number of stakeholders claimed that sub-caps on each and every charge should be closer to the overall Ethernet basket cap (e.g. RPI-6%, RPI-12%). After careful consideration of the merits of imposing a tighter sub-constraint on each and every charge in the Ethernet basket, we have concluded that the sub-cap of RPI-RPI is sufficient to ensure that prices are not excessive, while consistent with migration signals.

20.111 The reasoning for our conclusion is three-fold.

- First, we note that due to the expected decrease in volume for some products, we anticipate the unit costs of legacy products, e.g. WES and BES, to increase during the charge control period. If we were to impose a tighter control than RPI-RPI, we may require Openreach to reduce prices for these services, at the same time as costs were rising.¹⁵⁹⁸
- Second, we note that it is efficient to incentivise migration from legacy products to newer products with lower cost technologies. A sub-cap closer to the overall Ethernet cap would not be consistent with such migration incentives.

¹⁵⁹⁸ This same logic also applies to the control on WES products suggested in the AlixPartners report on behalf of UKCTA.

- Third, we have forecast DSAC for the duration of the charge control for each service for which DSAC is reported in the RFS, and our forecasting model.¹⁵⁹⁹ Given the other sub-caps and sub-baskets which we have implemented, a control of RPI-RPI is sufficient to ensure that the prices of each of these services are below our forecast of DSAC throughout the charge control. This gives reassurance that the control is sufficient to address the risk of excessive pricing.

20.112 We accept there is an incentive for Openreach to maximise profit within the terms of the imposed regulation. We believe that a sub-cap of RPI-RPI would sufficiently limit Openreach's ability to exert market power on particular services in any given year. We therefore believe that this proposal maintains a sufficient degree of flexibility for Openreach to balance charges and recover costs in the way that it judges to be efficient, whilst restricting its ability to increase any given charge. Given the proposed value of X for the basket and our assessment of starting charges, we consider that there is no need for Openreach to increase any charge in nominal terms.

20.113 In respect of BT's claim that our proposed sub-cap is too restrictive, we note that BT has indicated in its responses that to encourage migration it intends to reduce newer Ethernet product prices relative to legacy Ethernet product prices. For BT to comply with the overall basket control, rather than over-comply, if BT were to keep legacy Ethernet product prices constant in nominal terms (i.e. comply with the sub-cap of RPI-RPI), BT should be able to reduce newer Ethernet products prices by substantially more than the overall basket control. We therefore consider that the RPI-RPI sub-cap should afford BT sufficient headroom with which to adjust relative pricing of these services to encourage migration.

20.114 In the LLCC Consultation, we proposed that this sub-cap should not apply to services within sub-baskets. We have revaluated this proposal and have decided that the 'each and every charge' sub-cap should also apply within sub-baskets. Although sub-baskets have their own controls, some charges can account for only a small proportion of a sub-basket and so may not be adequately constrained by the overall basket control.

20.115 In regards to Verizon's concerns that we have not provided sufficient information to justify our basket design and sub-cap levels, given the information used and our analysis, we believe we provide sufficient evidence to support the proposed basket structure.

Ancillary services

20.116 In the LLCC Consultation, we proposed to include ancillary services in the main Ethernet basket with the control of RPI-12%. In its response, BT expressed reservations about this proposal, claiming that producing the information required to demonstrate compliance was an onerous process requiring specialist resources to build the initial database. According to BT, this would take a few months to initially set up and cost around [£<].¹⁶⁰⁰

20.117 We investigated whether the lack of information on volumes and revenues for ancillary services would make it difficult to confirm compliance for these services.

¹⁵⁹⁹ Our forecasting model forecasts FAC for each service for the duration of the charge control. We have forecast DSAC, by assuming that the DSAC/FAC ratio in the base year is maintained throughout the control. Our analysis of historical trends in DSAC and FAC suggests that the assumption of a constant DSAC/FAC ratio is not unreasonable.

¹⁶⁰⁰ See BT confidential response to the LLCC Consultation, page 40.

Further investigation showed that there are three types of ancillary services for Ethernet and the situation is slightly different for different categories.

- Resilience options and main links: BT has actual volumes for these services so there is no difficulty with demonstrating compliance for these services and no need to take them out of the main basket.
- Migrations, cancellations and upgrades: the charges for these services are a percentage of the connection charge for a service. As the ancillary price is tied to a service price, compliance can be easily monitored. BT has also advised us that actual volumes can be obtained for these services from billing systems, although it is not a straightforward process. Therefore, BT can demonstrate compliance with these services if they are in the main basket.
- Transfers and rearranges: BT cannot provide volumes for these services. However, the total revenue of these services in 2011/12 is very low. Including these services in the main basket is unlikely to distort compliance even if volumes cannot be accurately forecast as the revenues for these services are very low.¹⁶⁰¹

20.118 We also noted that there could be a possibility of distorting compliance for the overall basket if compliance for ancillary services could not be monitored. However, ancillary services revenues comprise less than [3%] of the total basket so any such distortion would be small.

20.119 Having considered the small proportion of ancillaries in the main basket, we do not consider that there will be significant issues with assessing compliance with the control. We therefore propose to keep ancillary services in the main basket. In terms of the control for these services, we have decided that the 'each and every charge' sub-cap for all services of RPI-RPI will be sufficient. This gives BT some flexibility in pricing, whilst limiting the movement of each individual charge.

Synchronised Ethernet services

20.120 BT's Sync E variant has not yet been launched. When BT confirms the launch and pricing of SyncE, we will consider the need for a formal consultation on the introduction of SyncE into the charge control when we have further data around charges and costs for the service. We note in this regard that, as set out in Section 9, we have concluded it is appropriate to complement existing non-discrimination obligations with a fair and reasonable pricing obligation, and this may be relevant in considering whether such a consultation on the introduction of SyncE into the charge control is required.

We have adopted the MEA approach when modelling Ethernet services

The LLCC Consultation proposals

20.121 In the LLCC Consultation we set out the basis for our proposal to adopt the MEA approach when modelling Ethernet services. This involved considering the answers to four questions.

- Can we identify the MEA for delivering the service in question?

¹⁶⁰¹ Openreach response to S135 Notice of 14 February 2013, [3%].

- ii) Can we calculate robust cost estimates for the services based on the MEA?
- iii) Would the use of the MEA allow an efficient operator to recover its costs?
- iv) Does the MEA give appropriate migration signals to consumers?

20.122 We explained why we believed that the answers to each of these questions were positive and therefore suggested that it would be appropriate to adopt the MEA approach.

Identifying the MEA for delivering the services

20.123 We believed that new Ethernet services could be identified as the MEA for delivering legacy Ethernet services.

20.124 At the end of January 2011, Openreach announced the withdrawal of WES, WEES and BES, up to an including 1Gbit/s, from new supply as these “*have been superseded by Ethernet Access Direct (EAD), a more flexible, cost-effective and future-proof access option*”.¹⁶⁰² EAD services also include additional features not available as standard compared to WES and BES, for example enhanced diagnostics and Resilience Option 1. Openreach announced that it would continue to support the legacy services for existing customers for the foreseeable future. At the time of the LLCC Consultation, we noted that the higher bandwidth products (WES, WEES, BES at 2.5Gbit/s and 10Gbit/s) would remaining available for new supply.

20.125 Openreach also commented on the ways in which EAD can deliver the same service as the legacy Ethernet products in response to an information request stating that WES/WEES/BES and EAD are ‘functionally equivalent’.¹⁶⁰³

20.126 To be considered as the MEA, the new technology must be able to deliver the same service, to the same level of quality and to the same base of customers as the legacy technology. We believed that EAD services met these criteria. In fact, they appeared to include additional functionalities as well.

20.127 However, we also noted that the choice of new technology by Openreach and the rate of adoption should not affect whether we identify that technology as the MEA. If we were to link the question of what is the MEA with the adoption of that technology, then such an approach might provide perverse incentives for Openreach in its selection of the appropriate technology to use, based on its view of our regulatory response. Instead, the identification of the MEA should be determined only by whether the technology is the most efficient established way of delivering a particular service to the same level of quality and to the same customer base as the old technology. We considered that new Ethernet services met these criteria and could be identified as the MEA for AI services.

Cost estimates for the services based on the MEA

20.128 The costs for new Ethernet services, such as EAD, have been prepared in BT’s financial statements in the same way as the costs of the legacy Ethernet products.¹⁶⁰⁴

¹⁶⁰² See Openreach Fact sheet.

http://www.openreach.co.uk/orpg/home/products/ethernet-services/wholesale-extension-services/wes/downloads/WES_BES_WEES_withdrawal_fact_sheet.pdf

¹⁶⁰³ BT Group response to S135 Notice of 1 July 2011.

20.129 We noted that the initial unit costs of a new technology are not always a reliable indicator of long-term values. However, networked Ethernet services have been sold for the duration of the current charge control period and we considered that the cost data for these services were sufficiently detailed and stable for us to make projections of the relevant costs.¹⁶⁰⁵

20.130 We also believed that it was not necessary to make any adjustments to the costs of the new Ethernet services when using them as the basis for the costs of the legacy Ethernet services. We noted that we could reduce the costs to reflect the differences in service quality between WES and EAD services, but we believed that the reduction would be small relative to the overall cost of the circuit.¹⁶⁰⁶ Furthermore, to carry out such an analysis would have required significant additional information on the marginal costs of these additional functionalities as well as customers' valuation of them. We did not believe such an analysis was likely to change our results significantly. This was because the relevant cost forecast would be one for 2015/16, where we forecast the proportion of the legacy WES circuits remaining to be small relative to the Ethernet basket.

20.131 Finally, we included the costs associated with BT's 21st Century Network (21CN) in the Ethernet basket. This differed from our approach in the LLCC 2009 where we excluded costs specific to 21CN from the then AI basket, which was consistent with our anchor pricing approach taken at that time.¹⁶⁰⁷ That is, given that the 21CN upgrade was a necessary part of the investment required to provide the networked Ethernet services, EAD, EBD and BTL, which we used as our reference for costs, we considered it was necessary to have the upgrade costs included in the cost base.

The use of the MEA and cost recovery

20.132 We believed that the MEA approach for Ethernet services should be consistent with an efficient operator having the opportunity to recover its costs as a result of the transition to new services and/or new technology. This meant that we may need to take into account holding losses or transition costs associated with the change in the MEA. We discuss this further below.

Incentive to invest in the new technology

20.133 At the time of the LLCC 2009, we were concerned that the MEA approach may not have allowed for cost recovery or have given Openreach the appropriate incentives to invest, so instead we adopted the anchor pricing approach. We explained that it was important that Openreach was given the incentives to undertake investments that would lead to improvements in efficiency and that would ultimately benefit customers.¹⁶⁰⁸

¹⁶⁰⁴ Note that if Openreach had not adopted the MEA technology, we could still have implemented an MEA approach by obtaining cost estimates from other sources.

¹⁶⁰⁵ We noted that volumes of EAD circuits are expected to grow significantly during the charge control. This can be expected to reduce unit costs due to scale economies. We captured this by estimates of the cost volume relationships. Openreach provided details of which new Ethernet products could be considered as the MEA for each of the legacy products. This mapping was described in Annex 5 of the LLCC Consultation.

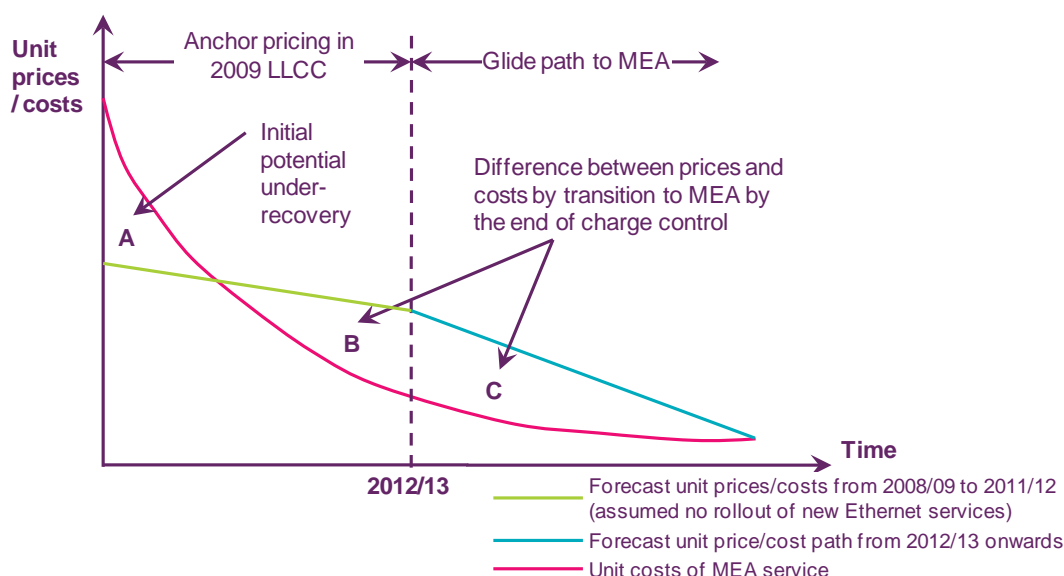
¹⁶⁰⁶ Note that if the alternative technology costs more for the same functionality, it cannot be the MEA. If it costs less and has additional functionality then it is the MEA, and an adjustment may be made to reflect the quality differential.

¹⁶⁰⁷ See paragraphs 3.77 to 3.80 of the LLCC 2009.

¹⁶⁰⁸ See paragraphs 3.89 to 3.100 of the LLCC 2009.

20.134 Below is an illustration of a potential cost recovery profile. This is applicable in general to cost recovery during a period of technological change.

Figure 20.3: Approach to cost recovery on new services



20.135 The left hand side, up to 2012/13, represents the profile during the period covered by the LLCC 2009, and the right hand side represents potential profiles during the LLCC that was the basis for the LLCC Consultation.

20.136 The green line in the period up to 2012/13 shows the path for prices in the charge control based on the hypothetical ongoing network using the anchor pricing approach. Under this approach, the costs of the existing service should not rise as a result of the new investment. The blue line shows the potential profile for the prices set under a charge control starting with current costs and migrating to the cost base under the MEA assumption.

20.137 As shown in Figure 20.3, in the early stages of the initial charge control the red line would be above the green line, illustrating that, with a lower volume of customers on the new technology and taking into account transition costs, unit costs may be above those of the technology in place.

20.138 However, once sufficient customers migrate to the new technology, Openreach would be able to make greater use of economies of scope and scale and make savings arising from the higher efficiency of the new technology.

20.139 For Openreach to recoup its investment in the new technology, it would need to cover any initial higher costs with the additional profits resulting from the new technology outperforming the hypothetical network that was used as the basis for setting the charge control. As explained in the LLCC 2009, we were concerned that the recovery of these losses may not be possible during a single charge control period. For Openreach's investment to be viable, it may need a longer payback period. Therefore, if we were to bring charges down to the level corresponding to the more efficient new Ethernet services at the start of this charge control period (from 2012/13 to 2015/16), this may not have provided sufficient time for Openreach to recover its investment costs.

20.140 In the LLCC 2009, we stated that we could not make commitments about price controls to be set in 2012/13, and would need to assess the situation at the time¹⁶⁰⁹. However, in Section 18 we highlighted our preference for the use of glide paths, rather than one-off adjustments. This would involve using the MEA approach to bring prices into line with the costs of the new Ethernet services in the final year of the charge control. The use of a glide path would also be consistent with giving Openreach incentives to invest in the new technology, as charges are only brought into line over time, rather than immediately as the new technology is introduced.

20.141 Given that we adopted the anchor pricing approach in the LLCC 2009, and that a full charge control period had elapsed since the introduction of the new Ethernet products, we considered that the time period was appropriate to move from an anchor pricing to an MEA approach. By using a glide path, we proposed to bring Openreach's prices into line with the costs of the new Ethernet technologies only by the end of this charge control period. We considered that this was a sufficient time period to allow Openreach to recoup its original investment and provide incentives to introduce the new Ethernet services.

Holding losses and transition costs for the legacy technology

20.142 In adopting the MEA approach, it is important to ensure that an efficient operator should have the opportunity to recover its costs. In a market with rapidly changing technology, the MEA for a given service may change frequently. There can be significant sunk costs involved in investing in a new technology as well as transition costs in moving from one technology to another. If these are not taken into account, prices which immediately reflect changes in the MEA may not allow efficient operators to recover those costs and as a result may deter future investment.

20.143 For example, consider an SMP operator that invests in a technology (technology A), which at the time is considered to be the most efficient technology available. This technology is expected to last for ten years and so upfront investment costs are depreciated accordingly. After five years, a new lower cost technology emerges (technology B) and this becomes the MEA. In order to move to technology B, the operator will have to reconfigure certain parts of its network and will incur concomitant costs. In a charge control, the MEA approach will allow the operator to recover the upfront capital costs and ongoing operating costs of technology B but may not allow it to recover any unrecovered capital costs on technology A nor the costs of transitioning from technology A to technology B.

20.144 This has two implications for cost recovery:

- first, there will be a holding loss associated with technology A, if the assets are reduced to reflect the costs of technology B; and
- second, there may be transition costs associated with the move to technology B. Although technology B may have lower operating costs, a provider using technology A may not be able to achieve such costs without incurring transition costs.

20.145 If only the forecast costs associated with technology B were allowed to be recovered, then the SMP operator may not be able to recover its costs. However, this under-recovery of costs would not be a consequence of inefficiency as at the time of the investment, technology A was the most efficient technology available. Therefore, it is

¹⁶⁰⁹ See paragraphs 3.172-3.177 of the LLCC 2009.

important under the MEA approach, to make forecasts of holding losses and/or transition costs.

20.146 Forecasting the level of holding losses can be difficult in a period of technological change. The adoption of the anchor pricing approach in LLCC 2009 was a response to this concern. In this case, we considered that the use of the anchor pricing approach in LLCC 2009 and the adoption of the MEA approach with a glide path in the present charge control may be appropriate to provide Openreach with the opportunity to recover its investment in legacy services, removing the need to take holding losses into account.

20.147 Nevertheless, we requested Openreach to provide estimates of any holding losses associated with the adoption of the MEA approach.¹⁶¹⁰ At the time of the LLCC Consultation Openreach had not submitted any such estimates. For legacy WES and BES services provided prior to 2010/11, the equipment and installation costs were allocated to connections.¹⁶¹¹ However, Openreach explained that legacy Ethernet services use more fibre than new Ethernet services, and so the adoption of the MEA approach would mean that fewer fibre costs could be recovered from legacy Ethernet services.¹⁶¹² We considered that this did not constitute a holding loss, as the fibre costs are common with other services (including new Ethernet services) and would be reallocated and recovered from other services, rather than written-off.

20.148 Transition from legacy Ethernet services to new Ethernet services is not costless. In order to move a customer from a legacy Ethernet service, such as WES 100Mbit/s, to a new Ethernet service, such as EAD 100Mbit/s, an operator needs to install new equipment at the customer's premises. The cost of connecting a customer to a new service is recovered by Openreach via a connection charge. However, if we model existing WES 100Mbit/s circuits as having the same ongoing costs as an EAD 100Mbit/s circuit, then there is a risk that an efficient provider would not be able to recover its full costs. EAD circuits have significantly lower ongoing costs than WES circuits, but Openreach cannot reduce its underlying costs to the efficient level without installing EAD equipment.

20.149 This situation is analogous to the situation of a new entrant. If a new entrant were to offer EAD rentals, then it would also need to install EAD equipment. We therefore considered that it would be appropriate to afford Openreach a 'migration credit' to account for the costs of transition to a more efficient network.

20.150 We proposed to calculate this migration credit based on the underlying costs of connecting legacy Ethernet customers to new Ethernet circuits. We based our estimate on the unit costs of connection of new Ethernet circuits and the volume of customers forecast to be renting legacy Ethernet services at the start of charge control. We estimated the migration credit at approximately £43m.¹⁶¹³ We proposed to take the migration credit into account by assuming that legacy Ethernet customers migrate evenly over the course of the charge control.

20.151 Our proposed migration credit was lower than that proposed by Openreach. Openreach conducted market research among its legacy Ethernet customer base which found that many customers would need substantial discounts on EAD

¹⁶¹⁰ Ofcom's information request of 5 January 2012.

¹⁶¹¹ Based on discussions with Openreach, March 2012.

¹⁶¹² BT Group response to S135 Notice of 1 July 2011.

¹⁶¹³ See Annex 5 of the LLCC Consultation.

connection charges in order to migrate to new Ethernet services. Openreach provided calculations of the revenue it would lose if it had to provide discounts on connection charges for migrating charges. In total, Openreach estimated that migrating all legacy Ethernet customers to new Ethernet services would cost it [X].¹⁶¹⁴ We rejected this approach as we considered that the most relevant measure of transition costs for the purposes of setting the charge control was the underlying costs of connection.

The MEA and migration signals to consumers

20.152 Openreach's customers that currently take a legacy Ethernet service have the choice whether to continue with this service or to take a service provided with new Ethernet technology that would meet their requirements. In other words, the decision to migrate is made by customers, rather than Openreach.

20.153 We considered it appropriate for Openreach to be given the flexibility to encourage customers to migrate from legacy to new services where it is efficient to do so, as set out in our basket design proposals. We also proposed to allow for the transition costs associated with migrating legacy Ethernet customers to new Ethernet services. This would allow Openreach flexibility to discount the connection charge for EAD services for customers migrating from legacy products, or to take other measures necessary to encourage migration. Therefore, we considered that the adoption of the MEA approach in this charge control would be consistent with giving appropriate migration signals to customers.

20.154 We believed that our proposed migration credit would compensate Openreach appropriately for migrating customers. For this reason we explained that such a credit was limited to our proposed charge control and was not a policy that we proposed to extend indefinitely. This would be regardless of how many customers Openreach managed to migrate to the new Ethernet services, since our policy proposals should not be determined by Openreach's actions. Rather, they should provide the conditions under which Openreach is incentivised to become more efficient. We believed that this would prevent Openreach from having an incentive to delay migrations, with the aim of attempting to justify further migration credits in future.

Consultation responses

Overall views on MEA approach/identification of the MEA

20.155 We received five responses on our proposal to adopt the MEA approach for the charge control for Ethernet services. Each of these either supported or appreciated the reasons for adopting this approach, and none specifically objected to the use of the MEA approach.

20.156 CWW, Sky and Level 3 all agreed with the use of the MEA approach for cost modelling of Ethernet services. In particular Sky noted that "in the case of Ethernet products, the modern equivalents are well established and are provided in large volumes".¹⁶¹⁵ However, CWW and Level 3 were surprised that the differential between the legacy and the MEA approach was not more significant.¹⁶¹⁶

¹⁶¹⁴ Openreach response to S135 Notice of 4 April 2012.

¹⁶¹⁵ See Sky non-confidential response to the LLCC Consultation, paragraph 14, page 4.

¹⁶¹⁶ See CWW response to the LLCC Consultation, paragraph 15.17 and Level 3 non-confidential response to the LLCC Consultation, page 7.

20.157 TalkTalk supported our proposal to adopt the MEA approach when setting the charge control for Ethernet services. However, TalkTalk argued that Ofcom was wrong to say that an anchor pricing approach would be consistent with efficient investment incentives. TalkTalk said that “incentives to minimise costs will be strongest when prices are set independently of BT’s actual costs - under anchor pricing prices are set with reference to the technology BT happens to be using whereas under an MEA approach prices are set based on the most efficient technology irrespective of what BT is doing”.¹⁶¹⁷

20.158 BT stated that it appreciated Ofcom’s reasons for the adoption of the MEA approach and Ofcom’s recognition that such an approach should not be implemented in such a way as to deny even an efficient operator the opportunity to recover its costs. However, BT expressed concerns that although the proposed approach makes some allowance for transition costs, it risked under-recovery of costs.¹⁶¹⁸

Cost estimates for the services based on the MEA

20.159 Sky disagreed with our proposal to identify the current EAD/EBD costs as the MEA costs for delivering legacy services. Sky said that “MEA-based cost forecasts could be reduced so that only the costs required to deliver the same level of functionality that is available from the legacy products is recovered through the charge control”.¹⁶¹⁹ Sky argued that: (i) “it is commonly accepted practice that abatements should be made under a MEA approach”,¹⁶²⁰ (ii) Ofcom did not provide reliable evidence to support its claim that the adjustment on the MEA-based cost would be small, and (iii) the “MEA cost is abated to reflect only the functionality of the legacy service irrespective of whether any legacy services remain in service.”¹⁶²¹ Sky argued that Ofcom’s approach effectively requires BT’s customers to pay for the additional functionality inherent in the newer products whether they want it or not.¹⁶²²

20.160 TalkTalk expressed concern that Ofcom appeared to have accepted that Openreach was adopting EAD and EBD in an efficient manner.¹⁶²³ TalkTalk argued that there are two ways to address this issue.

- Ofcom must challenge Openreach to show that its deployment of EAD and EBD is efficient over the period of the charge control. TalkTalk added that it is its view that EAD and EBD technology will become more efficient (e.g. improved productivity) over the charge control period and that Ofcom must therefore apply a suitable capital cost efficiency factor in its forecasting assumptions.¹⁶²⁴
- Alternatively, or additionally, Ofcom could seek to build a bottom-up model to verify Openreach’s cost of delivery and whether it is as efficient as it could be. Noting that the overall impact of adopting the MEA is that costs are 3% lower in

¹⁶¹⁷ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.3, referring to paragraph 4.71 of the Consultation document.

¹⁶¹⁸ See BT non-confidential response to the LLCC Consultation, paragraph 21, page 21.

¹⁶¹⁹ See Sky non-confidential response to the LLCC Consultation, paragraph 37, page 8.

¹⁶²⁰ See Proposals for WBA charge control, 20 January 2011, Ofcom. Available at <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/summary/condoc.pdf>

¹⁶²¹ See Sky non-confidential response to the LLCC Consultation, paragraph 39, pages 8-9.

¹⁶²² See Sky non-confidential response to the LLCC Consultation, paragraph 40, page 9.

¹⁶²³ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.4.

¹⁶²⁴ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.5.1.

2015/16 than they otherwise would have been, TalkTalk said that this felt low to them and did not seem like a “tough requirement”.¹⁶²⁵

The use of the MEA and cost recovery

Incentive to invest in the new technology

20.161 We received no stakeholder responses specifically on our analysis of why we considered that the MEA approach would allow Openreach to recoup its original investment and provide incentives to introduce the new Ethernet services.

Holding losses and transition costs for the legacy technology

20.162 UKCTA and Sky questioned whether BT should be afforded a migration credit.

20.163 UKCTA argued that given “the overwhelming majority of difficulties and costs from a move to new services will be experienced by OCPs and their customers, not BT”,¹⁶²⁶ the proposals should be reconsidered to ensure that any migration assistance credit is targeted at CPs wishing to move services.

20.164 Sky argued that the migration credit could be unnecessary because BT already has an incentive to migrate customers off legacy products more quickly than anticipated by the charge control because, should BT exceed the rate of migration to the new products anticipated under Ofcom’s charge control model, its costs will be lower and it will earn additional profits.¹⁶²⁷

20.165 Conversely, Virgin supported the migration credit, arguing that it is an important adjustment “to reflect the existence of undepreciated legacy assets and the costs of migration during the course of the control”.¹⁶²⁸ CWW stated that the MEA does not allow BT to recover all transition costs but added that it believed that it accounts for at least some of the transition costs.¹⁶²⁹

20.166 EE claimed the migration allowance, as proposed, did not afford BT with any incentives to manage migrations appropriately because “it is not tied to any specific obligations but simply provides an additional cost which BT can recover”.¹⁶³⁰

20.167 UKCTA, Exponential-e, Sky, TalkTalk, CWW and BT each raised concerns about the level at which we proposed to set the migration credit and the methodology we used to arrive at the figure of £43m.

20.168 Sky was unclear over how we had modelled the migration credit. It suggested that in the final year, we should have applied just one third of the total migration credit, £14m. Sky asked us to confirm how the credit has been applied when setting out our Statement.¹⁶³¹

¹⁶²⁵ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.5.2.

¹⁶²⁶ See UKCTA response to the LLCC Consultation, first bullet point, page 25.

¹⁶²⁷ See Sky non-confidential response to the LLCC Consultation, paragraph 15.(d), page 4; paragraph 42, page 9.

¹⁶²⁸ See Virgin response to the LLCC Consultation, page 15.

¹⁶²⁹ See CWW response to the LLCC Consultation, paragraphs 13.2-13.3, page 57.

¹⁶³⁰ See EE and MBNL non-confidential response to the LLCC Consultation, page 27.

¹⁶³¹ See Sky non-confidential response to the LLCC Consultation, paragraph 44, page 10.

20.169 UKCTA, Sky and TalkTalk each argued that BT may already have the commercial incentives to encourage migration to lower cost technology. They pointed out that BT has already introduced discounting to its customers to encourage migration to new products.

20.170 Sky and TalkTalk argued that any such migration incentives BT has already made or has considered making should be excluded from the migration credit. UKCTA argued that Ofcom should have considered whether any over-recovery from the initial investment in Ethernet services was permitted by the glidepath and how this compares with new investment required to encourage migration. UKCTA suggested Ofcom should consider whether these returns should instead be used to fund the migration credit.¹⁶³²

20.171 Sky argued that the migration credit should recover “only the cost of additional migrations over and above the migration run rate that would be anticipated to occur over the charge control period anyway”.¹⁶³³ Sky suggested the size of the credit coupled with the broad basket structure may allow BT to focus pricing discounts to the benefit of its downstream retail customers.¹⁶³⁴ TalkTalk made a similar point and suggested we should require “a compliance statement that shows how much discount was provided to BT and how much to non-BT”.¹⁶³⁵

20.172 Similarly, CWW argued that the migration credit only needs to fund the cost of migrating the customers who are forecast not to migrate over the charge control period. CWW said that because the allowable cost base already gives BT the opportunity to recover two-thirds of the total potential transition, to avoid a double-counting of transition costs, the migration credit only needs to fund the remaining one-third of total potential transition costs. CWW suggests the migration credit should reduce from £43m for the charge control period to £14.3m.¹⁶³⁶ It provided the reasoning set out below for taking this view:

- “the forecast cost base in every year of the price control (...) reflects the aggregate cost of all forecast service volumes in that year”,¹⁶³⁷
- “service volumes (...) include EAD connection services for customers who are forecast to transition from legacy to new Ethernet services during the period of the price control”¹⁶³⁸ and
- “before the application of any migration credit, the allowable cost base thus already allows for the recovery of transition costs in respect of those customers who are forecast to transition”. Based on the volume forecasts presented in the Consultation document, CWW said that “this allowance is equal to two-thirds of the cost of transitioning all legacy Ethernet rentals in place at the start of the price control period”.¹⁶³⁹

¹⁶³² See UKCTA response to the LLCC Consultation, first bullet point, page 23.

¹⁶³³ See Sky non-confidential response to the LLCC Consultation, paragraph 45, page 10

¹⁶³⁴ See Sky non-confidential response to the LLCC Consultation, paragraph 46, page 10

¹⁶³⁵ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.7.3, pages 33-34.

¹⁶³⁶ See CWW response to the LLCC Consultation, paragraphs 13.15-13.19.

¹⁶³⁷ See CWW response to the LLCC Consultation, paragraph 13.6.

¹⁶³⁸ See CWW response to the LLCC Consultation, paragraph 13.12.

¹⁶³⁹ See CWW response to the LLCC Consultation, paragraph 13.14.

20.173 Level 3 did not comment specifically on the validity of the migration credit, but raised concerns over the rate of migration suggesting that “the volume of WES circuits predicted to migrate to AI is likely to be inflated”.¹⁶⁴⁰

20.174 Although Exponential-e welcomed the concept of a migration credit, it suggested the credit as proposed may not work in the way we had intended but instead could be used by BT to:

- “Cushion BT’s charge control obligations.
- [X].
- Only apply credits where a capacity upgrade has also been ordered as currently with WES to EAD migration.
- Force CPs to have to purchase a replacement product from scratch at the full install price as currently is the case with many of the migration scenarios for CPs to move from WES to EAD”.¹⁶⁴¹

20.175 BT and TalkTalk both said that they believed we had made errors in calculating the migration credit. BT said that it believed that “Ofcom has erred in the calculation of the relevant connection unit costs by dividing 2010/11 connection costs by 2012/13 connection volumes. As the MEA connection volumes have increased dramatically from 2010/11 to 2012/13, this has the effect of understating the credit”. BT “estimate[d] that, if connection costs and volumes are both taken from the same year, then the migration credit would increase from £43m to £78m”.¹⁶⁴²

20.176 TalkTalk said that, since we deducted the credit from 2015/16 forecast revenues or added it to 2015/16 costs, which made the glide path less steep, this allowed revenues to be higher in 2013/14 and 2014/15 and led to the value of the credit being £86m, rather than £43m.

20.177 TalkTalk argued that the migration credits should not count towards achieving the RPI-X charge control, which otherwise would allow BT to over-recover.¹⁶⁴³ CWW and TalkTalk agreed with our proposal that the migration credit should be considered final, with no continuation or additional migration credits for the transition in question in future charge controls. CWW also argued that, given this intended purpose, these costs did not span charge controls and so should not form part of the cost base for any subsequent charge control and should be deducted from starting prices at that time. CWW said that inclusion of these costs beyond 2015/16 would have the effect of funding transition costs beyond the current charge control, in direct contradiction to our stated aim.¹⁶⁴⁴ UKTA suggested that the approach to limit the migration credit to this charge control seemed sensible.¹⁶⁴⁵

20.178 BT argued that “[a]lthough Ofcom makes some allowance for transition costs, the MEA approach risks imposing under-recovery of costs (...). this is because BT faces

¹⁶⁴⁰ See Level 3 non-confidential response to the LLCC Consultation, page 20.

¹⁶⁴¹ See Exponential-e non-confidential response to the LLCC Consultation, section 9, page 14.

¹⁶⁴² See BT non-confidential response to the LLCC Consultation, paragraph 32, page 23.

¹⁶⁴³ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.7.

¹⁶⁴⁴ See CWW response to the LLCC Consultation, paragraphs 13.20-13.22.

¹⁶⁴⁵ See UKTA response to the LLCC Consultation, page 23.

unavoidable costs which the proposed adoption of a pure MEA approach in 2015/16 omits". BT said that "[t]he model is premised on the assumption that there will be a complete transition from WES/BES to EAD/EBD by 2015/16, i.e. that the technology shift will be complete in practice."¹⁶⁴⁶

20.179 However, BT considered that in this case, migration is unlikely to be completed by 2015/16 and even with very low WES/BES circuit volumes, costs will still be incurred as a result of the parallel running of the legacy and new services and some costs which are unavoidable until the last few WES/BES customers have migrated to the new services. BT estimated that these costs total approximately [X] per annum. BT argued that Ofcom should recognise these costs and suggested that they should be added to the migration credit.¹⁶⁴⁷

20.180 BT argued that it will incur holding losses as a result of the adoption of the MEA. BT said that "legacy Ethernet services use more fibre than new Ethernet services, and so the adoption of the MEA approach means that fewer fibre costs can be recovered from legacy Ethernet services".¹⁶⁴⁸

20.181 BT was clear that the released fibre would be re-used, and so it was not writing these assets off.¹⁶⁴⁹ However it claimed that "whilst reallocation is possible in the longer term, the volume of the fibre that is being released means that not all the fibre will be re-used during the period of this control, and therefore the cost attributed to this fibre will not be recovered. Put another way, there will be costs (e.g. depreciation) associated with "stranded assets" that needs to be included in the calculation of the X to ensure that BT does recover its efficiently incurred costs". BT argued that rather than excluding the holding losses associated with the adoption of the MEA, Ofcom should recognise that these costs are a consequence of changing and improving the service that Openreach provides to wholesale customers and end users. BT estimated that these holding losses are likely to cost around [X] in the final charge year of the control due to the stranding of fibre.¹⁶⁵⁰

20.182 Sky and TalkTalk pointed out that by allowing full recovery of all migration costs, Ofcom has fully insulated BT from the risk of technological change, a risk for which it is already rewarded. They argued that because BT is already rewarded for this risk through its cost of capital, it was not necessary for the charge control to fully allow for the recovery of assets whose value reduces.^{1651, 1652}

20.183 UKCTA also commented that our approach to setting the cost of capital reflects the degree of protection BT requires in light of the "impact of fast-changing technology on legacy asset values".¹⁶⁵³

¹⁶⁴⁶ See BT non-confidential response to the LLCC Consultation, paragraph 21 to 22, page 21.

¹⁶⁴⁷ See BT non-confidential response to the LLCC Consultation, paragraph 24, page 22.

¹⁶⁴⁸ See BT non-confidential response to the LLCC Consultation, paragraph 26, page 22.

¹⁶⁴⁹ See BT non-confidential response to the LLCC Consultation, paragraph 28, page 22.

¹⁶⁵⁰ See BT non-confidential response to the LLCC Consultation, paragraphs 27, 28 and 30, pp 22-23.

¹⁶⁵¹ See Sky non-confidential response to the LLCC Consultation, paragraph 45, page 10

¹⁶⁵² See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.7

¹⁶⁵³ See UKCTA response to the LLCC Consultation, page 24.

The MEA and migration signals to consumers

20.184 We received no response from stakeholders on our proposal that Openreach was given the flexibility to encourage customers to migrate from legacy to new services where it is efficient to do so. However, Sky and TalkTalk expressed concern that BT may use the migration credit to fund discounts on the services upon which it is more reliant or where it faces greater levels of competition.

20.185 TalkTalk was particularly concerned about Openreach having an incentive to discriminate in favour of their downstream divisions, for instance, by reducing migration costs from WES rather than migration costs from BES. It suggested that we should ensure that this cannot happen.

20.186 Sky commented that were we to continue to apply a migration credit, Ofcom may consider it appropriate to provide guidance as to how BT should apply incentive discounts in a non-discriminatory manner".¹⁶⁵⁴

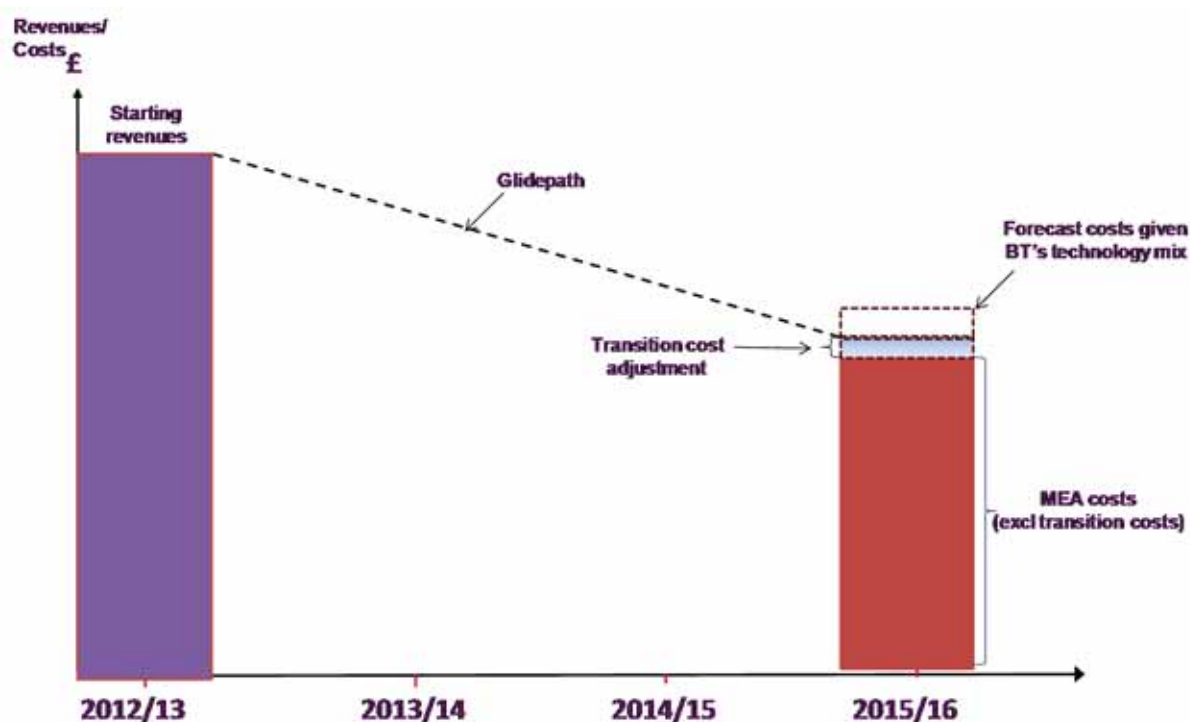
Our response and conclusionsOverall views on MEA approach, MEA identification and cost estimates

20.187 We have considered carefully the arguments raised about the MEA approach in the responses to the Consultation. Before addressing stakeholder responses, we consider it useful to illustrate the impact of the MEA approach.

20.188 Figure 20.4 below provides an illustration of our application of the MEA approach. The charge control is set so as to bring BT's revenues in line with our forecast level of costs in the final year of the charge control. By 2015/16, although many customers will be on the MEA technology, our volume forecasts anticipate there are likely still to be a significant proportion of customers on legacy technologies. This means that our use of the MEA approach results in a lower forecast cost base for BT than if we had used BT's predicted technology mix.¹⁶⁵⁵

¹⁶⁵⁴ See Sky non-confidential response to the LLCC Consultation, paragraph 47, page 10.

¹⁶⁵⁵ The mapping used for legacy services to the MEA equivalent is set out in Annex 12.

Figure 20.4: Illustration of the MEA approach

20.189 Figure 20.4 also illustrates that the adjustment we make for transition costs results in lower costs than would have been predicted using our forecast of BT's technology mix.

The MEA approach has a small impact on X

20.190 The impact on X of the MEA approach is calculated relative to a benchmark of BT's predicted technology mix. As significant volumes of customers are anticipated to transition to new Ethernet technologies over the control, the impact on X of the MEA approach is less than if no such transition was forecast.¹⁶⁵⁶

Cost estimates for the services based on the MEA

20.191 Sky submitted that we should adjust our MEA approach to abate for any differences in technology between legacy and new Ethernet services.

20.192 We accept that in principle if the new Ethernet services delivered enhanced services relative to the legacy Ethernet services, then it would be appropriate to abate the costs of the MEA to reflect the costs of delivering an equivalent level of service to the legacy services.

20.193 We have considered whether such abatement is necessary in the present case and have concluded that it is not. Although EAD does offer some enhancements relative to WES, we consider that these enhancements are unlikely to be a significant driver of the customer's choice of the service. We note that the EAD equipment is smaller and has additional network management features than WES equipment. However, these features are secondary to the provision of an Ethernet connection of the relevant capacity.

¹⁶⁵⁶ Note that if we had instead calculated the impact of the MEA relative to an anchor pricing approach (i.e. assuming all customers used legacy services) the impact of the MEA approach would have been much greater.

20.194 In relation to TalkTalk's point about the incentives for cost reduction, we consider that BT will have incentives for cost reduction, so long as it is more profitable with cost reductions than absent cost reductions. Depending on its implementation, this can occur under either anchor pricing or the MEA approach. In relation to TalkTalk's point on capital cost efficiency, this is discussed in the efficiency section of this Section.

The need for a transition cost adjustment

20.195 In the LLCC Consultation, we proposed to take into account the transition costs which BT faced when moving from legacy to new Ethernet services in our MEA approach. We called these transition costs a 'migration credit.' We consider that the use of the term 'credit' led to some confusion among stakeholders. We consider that the term 'transition cost adjustment' is a more accurate description of the adjustment.

20.196 We believe that confusion over the term 'migration credit' was behind UKCTA's argument that any migration assistance credit should be targeted at CPs wishing to move services. The proposal was an adjustment to the MEA costs, not a proposal to give a sum of money to BT or any other operator. In any case, we maintain our proposal that we should make an adjustment for transition costs when applying the MEA approach. This is based on the reasons set out below.

- Our proposal to allow BT a transition cost adjustment is a consequence of our decision to model BT's Ethernet costs on the basis of the MEA approach. As set out in the LLCC Consultation, even an efficient operator cannot costlessly move customers from one technology to another. In adopting the MEA approach we should ensure that BT should have the opportunity to recover its efficiently incurred costs.
- The MEA approach is designed to model the costs independently of the technology actually used by BT. Put another way, the allowable cost base should not depend on the level of migration from services using the legacy technology to those using the more efficient technology. We consider that if the cost base was entirely dependent on the technology used by BT, then it may provide perverse incentives for BT to select its technology based on our anticipated regulatory response.

20.197 We now consider Sky's point that the transition cost adjustment could be unnecessary because BT already has an incentive to migrate customers off legacy products more quickly than anticipated by the charge control.

20.198 In relation to this, we agree that BT already faces an incentive to migrate customers to the more efficient technology as quickly as possible. Because the ongoing costs of EAD circuits are significantly lower than WES and BES, the more circuits BT can successfully migrate to EAD during the charge control period, the lower its actual cost base will be.

20.199 However, we consider that Sky's point relates to a misunderstanding of the nature of the adjustment. We have made an adjustment for transition costs when adopting the MEA approach, as, if we had not done so, then even an efficient operator would not have been able to recover its costs. Under the MEA approach we model legacy circuits as though they had the costs of the newer lower cost services. However, a customer cannot be migrated to the lower cost technology without transition costs being incurred. As noted in the LLCC Consultation (paragraph 6.101), the situation is analogous to the situation of a new entrant, where were it to offer EAD rentals, then it would also need to install EAD equipment.

Methodology and level of the transition cost adjustment

20.200 We now consider our response to issues raised by stakeholders about the level at which we proposed to set the migration cost adjustment and the methodology we used to arrive at the figure of £43m.

Basis on which transition cost adjustment is calculated

20.201 In the LLCC Consultation we proposed to calculate the transition cost adjustment on the basis of the volume of all legacy Ethernet rentals in place at the beginning of the charge control. We considered that in applying the MEA approach (and modelling legacy circuits as having the lower costs associated with the new circuits), we should also allow for the transition costs associated with migration from a legacy to a new circuit, otherwise even an efficient operator would not be able to recover its costs. We calculated the total transition costs BT faced in moving to the MEA, and allocated one-third of these costs to each year of the charge control.

20.202 CWW expressed concerns that as the volume forecasts upon which the Ethernet basket X has been modelled already include EAD connection services for customers who are forecast to transition from legacy to new Ethernet services, the allowable cost base may already include two-thirds of the total migration cost, and so a transition cost adjustment based on the total number of legacy circuits at the beginning of the charge control potentially double counts some of the transition costs and allows BT to over-recover.

20.203 We have examined CWW's point and consider that it is correct. The transition costs which we have identified with the MEA approach are the costs of connection to the new services. As many legacy circuits are forecast to migrate to the new services over the course of the charge control, the connection costs of customers who are forecast to migrate are already in our cost base. If we were to make an adjustment equal to the connection costs of all legacy customers at the start of the control, then we would be double-counting the transition costs associated with customers who are already forecast to migrate. We therefore consider that the transition cost adjustment should be based on the transition costs of only those customers not already forecast to migrate.

20.204 We have now decided to calculate the migration cost allowance on the basis of (i) the volume of customers forecast to be renting WES, WEES and BES circuits in the final year of the charge control (2015/16) and (ii) the predicted average EAD connection unit costs over the charge control period. Our adjustment for transition costs is therefore based on the transition costs associated with legacy customers who are not forecast to migrate. We make no allowance for transition costs for customers who are forecast to migrate, as the connection costs to new services are already in the cost base. As in our updated volume forecasts, 65% of legacy customers to migrate over the charge control, our transition cost adjustment is reduced relative to the proposal in the LLCC Consultation.

20.205 We have considered whether any adjustment is needed to the transition cost adjustment to allow BT to make discounts to encourage migration. We have concluded that it is not. First, the transition costs of customers (i.e. the connection costs) who are forecast to migrate are already in the cost base. As explained above, allowing for the transition costs of such customers would risk double-counting. Second, as noted in Section 18, time-limited offers will count towards compliance with X. We therefore consider that our control allows BT flexibility to encourage migration, whilst complying with the terms of the control.

20.206 TalkTalk argued that the value of the migration cost allowance we proposed would be £86m rather than £43m, but we believe that our proposal was misunderstood. As TalkTalk pointed out, we calculated that £43m is the amount that Openreach would need to offer in totality to its customers to encourage them to move to the MEA. However, rather than adding the full £43m to 2015/16 costs, we proposed to add only a third of the full migration cost allowance (£14m) to the 2015/16 cost stack to reflect our assumption that customers would migrate evenly over the course of the charge control.¹⁶⁵⁷

20.207 We have continued this approach with the reduced transition cost adjustment. The total transition costs associated with the legacy customers who are not forecast to transition amount to £22m. In order to ensure that this total is recovered over the three years of the charge control, we have allocated a third of this total to the final year cost base, i.e. £7.5m.

Calculation errors / application of the transition cost adjustment

20.208 Since the LLCC Consultation, we have revised our approach to calculating the EAD connection unit costs upon which the transition cost adjustment is calculated. In particular, we have revised how we forecast non-volume related costs (e.g. admin).

20.209 The model forecasts individual non-volume related service costs on the basis of the change in total basket service volumes rather than the change in the individual service volumes. While this approach is appropriate for calculating the basket non-volume related service costs in aggregate, it may under- or over-state costs at the individual service level. Because EAD connection volumes are forecast to increase significantly from 2010/11 to 2012/13, our methodology is likely to have understated the non-volume related portion of 2012/13 EAD connection unit costs.

20.210 We have amended our approach to forecasting EAD connection unit costs for the purpose of the transition cost adjustment calculation such that the non-volume related portion of the costs has now been calculated on the basis of the change in the EAD connection service volumes.

Treatment of transition cost adjustment in this charge control and subsequent charge controls

20.211 In relation to TalkTalk's argument that the transition cost adjustment should not count towards achieving the RPI-X charge control, we consider that this is based on a misunderstanding. The transition cost adjustment is an adjustment to BT's costs, and so used in the calculation of the value of X, rather than a product which would earn a weight in the basket.

20.212 We note that if BT does reduce connection charges, such reductions would count towards compliance with X. We consider that this is appropriate as it is in line with the objective of the charge control that charges should be in line with costs by the end of the charge control period. If we were to exclude connection costs (whether for all or migrating customers) from compliance with the basket, then this would fail to protect the customers for these products.

¹⁶⁵⁷ We have now decided to calculate the migration cost allowance on the basis of (i) the volume of customers forecast to be renting WES, WEES and BES circuits in the final year of the charge control (2015/16) and (ii) the average EAD connection unit costs over the charge control period, and apply it by adding one third of the amount to the 2015/16 cost stack.

20.213 As set out in paragraph 6.106 of the LLCC Consultation we proposed that the migration cost allowance should be “limited to our proposed charge control and is not a policy that we extend indefinitely”. That is, we have allowed BT the transition costs associated with the move to the MEA in the present charge control. To the extent that legacy circuits still remain at the time of the next charge control, we would need to carefully consider whether it is appropriate to make another transition cost adjustment in the next charge control for legacy WES and BES circuits given our view that the migration credit will compensate Openreach appropriately for migrating customers.

20.214 CWW has argued that because the RPI-X charge control glide path allows regulated firms to retain the benefits of cost reductions made under a previous price control for longer (because of the gradual convergence of prices and costs), starting prices at the beginning of the next charge control (at the end of 2015/16) will be based on a cost base that includes the transition cost adjustment. CWW has proposed that starting prices at the next charge control should be reduced in line with the transition cost adjustment.

20.215 We consider that the transition cost adjustment is part of the allowable cost base under the MEA approach for this charge control. We cannot prejudge the outcome of the next review. Nevertheless, we note that we have a general preference to reduce prices through a glidepath, but as described in Section 18, we will consider making start charge adjustments if there are good reasons to do so.

BT's ability to discriminate discounts

20.216 We have considered the concern raised by Sky and TalkTalk that BT may use the transition cost adjustment to fund discounts on the services upon which it is more reliant or where it faces greater levels of competition. We consider that this concern is misplaced. The transition cost adjustment is an adjustment necessary to ensure that the move to the MEA approach allows an efficient operator to recover its costs.

20.217 In addition, we have assessed whether BT is likely to have the incentive to disproportionately focus price decreases on services which are mainly purchased by BT's downstream operations or which face greater levels of competition and have imposed sub-caps and sub-baskets to mitigate this risk. We do not consider that the transition cost adjustment gives rise to any new strategic incentive other than those previously identified and addressed. We therefore consider that any controls or guidance on how BT sets its prices to encourage migration are unnecessary.

Costs associated with parallel running of the legacy and new networks

20.218 We have considered BT's argument that our proposed approach does not allow for the recovery of costs that will be incurred as a result of the parallel running of the legacy and new services, some of which are unavoidable until the last few WES and BES customers have migrated to the new services.

20.219 We acknowledge that BT will face costs associated with the parallel running of two networks. However, we consider that the adoption of the anchor pricing approach in LLCC 2009, the transition cost adjustment in the present charge control, and the use of a glidepath to the MEA cost mean that there is no need to allow BT additional costs for such parallel running in the charge control.

20.220 BT's transition from legacy to new Ethernet services has taken place over two charge controls. In the LLCC 2009, we adopted an anchor pricing approach. This ensured

that customers for Ethernet services did not face higher prices due to the introduction of new Ethernet services. However, as more customers switched to lower cost technologies, the full benefits of this reduction were not initially shared with customers.

20.221 In this control, we propose to bring prices down to the costs of the new Ethernet services only by the end of the charge control. Given the anchor pricing approach in LLCC 2009, the use of this glidepath also gives BT an opportunity to recover any costs associated with running parallel networks.

20.222 In addition, we are making an adjustment for the costs of transition to a new network. Our cost base includes all the transition costs associated with movement from legacy to new services. We consider that it would be inconsistent to at the same time make an adjustment for the costs of running two parallel networks. We therefore propose no additional adjustment for parallel running costs.

Stranded assets / holding losses

20.223 We note that BT has argued that we should make an adjustment to the MEA approach to account for 'released' fibre costs which may not be recovered in this charge control period.

20.224 The new Ethernet services use less fibre than the legacy Ethernet services they replace. This results in some fibre which is released for future reuse for other services. BT has been explicit that it "does expect to re-use these fibre assets and therefore Openreach is not writing these assets off."¹⁶⁵⁸ These fibre assets consequently do not constitute a 'holding loss' in the conventional use of the term.

20.225 We have considered BT's estimates of the cost of fibre assets which would be released but not reused by the last year of the charge control. BT has estimated that these will amount to [X] in the final year of the charge control.

20.226 We note that this fibre is not needed to deliver the new Ethernet services forecast over the charge control. However, it will be used to deliver other services in the future. These other services will include a mix of all the services which use fibre, including NGA services, MISBO services as well as Ethernet services.

20.227 We do not see a persuasive reason why current Ethernet customers should pay for the costs of fibre beyond that which is needed to provide their service. The additional fibre costs are excess capacity and would not be incurred by a new entrant seeking to provide the new Ethernet services.

20.228 We note that BT expects to re-use the 'stranded' fibre to deliver services, including Ethernet services, in the future. We consider that it is appropriate that the costs of this fibre is recovered from the customers that benefit from it. This means that as this fibre is reused, we may need to consider the appropriate amount of costs for this fibre to be allowed in any future charge controls.

Adjustments to base year costs and revenues

20.229 In the LLCC Consultation, we proposed to make a number of adjustments to the base year costs and revenues provided in BT's RFS (2010/11) when modelling the

¹⁶⁵⁸ BT non-confidential response to the LLCC Consultation, page 22, paragraph 28.

charge control for the Ethernet basket. These adjustments were categorised into two types:

- adjustments to reflect the composition of the basket; and
- adjustments for reflect forward-looking efficient costs for the purposes of forecasting costs to 2015/16.

20.230 The overall effect of our proposed adjustments was to increase the Ethernet basket ROCE from the reported level of 4.5% in 2010/11 to around 16.7%.

Adjustments to reflect the composition of the basket

The LLCC Consultation proposals

Services out of scope of Ethernet basket

20.231 We proposed to exclude the costs and revenues associated with services outside the Ethernet basket from our analysis. We therefore proposed to exclude revenues and costs associated with ECCs. We also proposed to exclude costs and revenues associated with Cablelink, Broadcast Access, CCTV access and Street Access services. This reflected the June BCMR Consultation proposal to exclude these from both the TI and the AI markets as they are considered retail applications outside of standard business connectivity services.¹⁶⁵⁹

Removal of assets built under 'excess construction'

20.232 BT includes the cost of providing 'excess construction' services within the base data for Ethernet services. These services are out of scope of the Ethernet basket and therefore we need to remove associated costs and revenues from BT's accounts. BT estimates the costs of excess construction charges (ECCs) in its RFS.

20.233 BT also capitalises and depreciates all ECC costs.¹⁶⁶⁰ However, these costs do not need to be recovered as part of ongoing revenues to ensure cost recovery because customers have to pay BT upfront when they incur ECCs.

Non-core Ethernet services

20.234 We only modelled core services as we did not have volume forecasts or cost-volume relationships for the ancillary services. We therefore proposed to exclude both revenues and costs associated with ancillary services from our modelling analysis and the determination of the value of X to be applied to the basket. We also noted that ancillary services accounted for less than 5% of the basket revenues.

Ethernet services not in BT's RFS

20.235 We included Ethernet services that we proposed to control but were not present in the RFS (internal BES, ONBS and EBD up to and including 1Gbit/s and their associated main link distances, and above 1Gbit/s Ethernet services and their associated main link distances). Internal BES, ONBS and EBD costs were estimated assuming the same unit costs as their external counterparts. Data on the above

¹⁶⁵⁹ See paragraphs 4.298-4.332 of the June BCMR Consultation.

¹⁶⁶⁰ Openreach response to S135 Notice of 25 May 2012.

1Gbit/s Ethernet services were provided by Openreach as part of its responses to our formal information requests.

Geographic cost adjustments

20.236 In the June BCMR Consultation, we proposed that the competitive conditions in the market for low bandwidth AISBO services in the WECLA are different from those outside the WECLA and accordingly we proposed in the LLCC Consultation to regulate these areas differently.¹⁶⁶¹ In particular, we proposed less onerous remedies in the WECLA than for the rest of the UK.¹⁶⁶²

20.237 We also proposed in the June BCMR Consultation that no operator has SMP for MISBO services in the WECLA. Accordingly, in the LLCC Consultation we did not propose any regulation in the MISBO market within the WECLA.¹⁶⁶³

20.238 We therefore proposed to exclude the costs and revenues associated with the WECLA from our modelling. We pointed out that, if costs differed between the charge controlled and non-charge controlled areas, in order to accurately model the costs in the charge controlled area, we should use geographically disaggregated costs.

20.239 Openreach provided data on the proportion of Ethernet circuits in the WECLA, and the cost differential with respect to the rest of the UK (excluding Hull).¹⁶⁶⁴ We undertook a preliminary review of this submission. Taking account of the data provided by Openreach, and given the materiality of the impact of cost differentials within the WECLA on the rest of the Ethernet basket, we did not consider it proportionate at the time we consulted to undertake a detailed assessment of the relevant geographic cost differentials for Ethernet services. Instead we proposed to use the estimate of the proportion of the WECLA circuits from the June BCMR Consultation, and to assume that the cost differential for Ethernet was the same as for high bandwidth TI circuits.

Consultation responses

21CN costs

20.240 Level 3 did not feel it appropriate for the costs associated with BT 21CN to be included within the Ethernet basket. Level 3 referred to paragraph 6.83 of the LLCC Consultation where we said that a 21CN upgrade was necessary to provide the networked Ethernet services, EAD, EBD and BTL services. Level 3 claimed that the 21CN network is not used to deliver either EAD or BTL for external CPs. BT's own Harmonized Ethernet product used by the internal LOBs did make use of this to deliver services in a more efficient manner than external CPs were able to. Level 3 believed that it was reasonable to make further adjustments to the costs that BT is permitted to recover. Level 3 also noted that it was its understanding that the significant costs incurred in developing expensive B2B interfaces only appear to be of benefit to the internal BT LOBs that are active in the AI market.¹⁶⁶⁵

¹⁶⁶¹ See paragraphs 7.180-7.242 of the June BCMR Consultation.

¹⁶⁶² Excluding Hull.

¹⁶⁶³ See paragraphs 7.293-7.312 of the June BCMR Consultation.

¹⁶⁶⁴ Openreach response to S135 Notice of 29 March 2012.

¹⁶⁶⁵ See Level 3 non-confidential response to the LLCC Consultation, page 5.

Removal of assets built under ‘excess construction’

20.241 Please see Section 22.

Non-core Ethernet services

20.242 BT commented on our proposal for not modelling ancillary services. We set out BT’s comments earlier in this Section.

Ethernet services not in BT’s RFS

20.243 We received no stakeholder response on the inclusion of Ethernet services that we proposed to control but were not present in the RFS.

Geographic cost adjustments

20.244 We received one stakeholder comment on our proposals for geographic cost adjustments.

20.245 Openreach argued that the true unit cost of supply for AI services is between [X] lower in the WECLA rather than 15% as Ofcom stated in the LLCC Consultation.¹⁶⁶⁶ In its response, BT also provided a description of the factors that lead to differences in costs for WES, BES, EAD and Main Link.¹⁶⁶⁷

Our response and conclusions

Services out of scope of Ethernet basket

20.246 We have decided to exclude the costs and revenues associated with services outside the Ethernet basket from our analysis. We therefore do not include revenues and costs associated with ECCs. We also exclude costs and revenues from Cablelink as these are regulated as part of a separate basket. Finally, we remove costs and revenues from Broadcast Access, CCTV access, Street Access services. As concluded in section 4, the above services are considered as retail applications outside of standard business connectivity services.

21CN costs

20.247 We considered responses to the consultation and asked BT for further data on 21CN costs allocated to Ethernet. Some 21CN costs, namely Ethernet switches and high bandwidth data cards are allocated to Ethernet services on a future benefit basis and are currently not used to deliver Ethernet services. [X].¹⁶⁶⁸

20.248 We consider that the above explanation leads to one of two possible scenarios. First, the new and improved way to deliver EAD could be a new service that is not currently charge controlled. In that case we would exclude the costs of this future service for the purposes of the current charge control and wait until the product is introduced and we have reliable cost and volume data for the new service.

¹⁶⁶⁶ BT confidential response to the LLCC Consultation, paragraph 46.

¹⁶⁶⁷ BT non-confidential response to the LLCC Consultation, paragraphs 47 to 51.

¹⁶⁶⁸ Openreach response to S135 Notice of 14 February 2013, [X].

20.249 The second possibility is that the new technology enables BT to deliver EAD in a more efficient and cheaper way. If this is the case, BT would benefit from the cost reduction in the future and will be able to have a greater return on the service than envisaged by the charge control. We do not consider that BT should recover the costs of making a service more efficient in the future from existing customers.

20.250 On the basis of the above, we adjusted the Ethernet cost base by removing 21CN costs and MCE for two components, high bandwidth data cards and Ethernet switches, which are allocated on a future benefit basis. Other 21CN costs are used by existing Ethernet services and we consider it appropriate to leave them within the cost base.

Removal of assets built under 'excess construction'

20.251 BT includes the cost of providing 'excess construction' services within the base data for Ethernet services. These services are out of scope of the Ethernet basket and therefore we do not take into account associated costs and revenues from BT's accounts. BT estimates the costs of ECCs in its RFS.

20.252 BT made an adjustment in 2011/12 to remove costs and MCE associated with ECCs over the last ten years from the 2011/12 data. We have reviewed this adjustment and note that it is larger than the adjustment we proposed in the LLCC Consultation. As, with this adjustment, BT has already removed ECC related costs and MCE we do not consider that any further adjustment is required, as explained in Section 22.

Non-core Ethernet services

20.253 We only model core services as we do not have volume forecasts or cost-volume relationships for the ancillary services. We therefore exclude both revenues and costs of ancillary services from our modelling analysis and the determination of the value of X to be applied to the basket. Ancillary services account for less than 5% of the basket revenues.

Ethernet services not in BT's RFS

20.254 We include Ethernet services that are part of the main Ethernet services we model (e.g. internal ONBS and EBD up to and including 1Gbit/s and their associated main link distances, and above 1Gbit/s Ethernet services and their associated main link distances). This information is not in the RFS. Internal ONBS and EBD costs have been estimated assuming the same unit costs as their external counterparts. Data on the above 1Gbit/s Ethernet services was provided by Openreach as part of their response to Ofcom's formal information request.

Geographic cost adjustments

20.255 In Section 7, we said that the competitive conditions in the market for low bandwidth AISBO services in the WECLA are different from those outside the WECLA. Accordingly we regulate these areas differently. In particular, we impose less onerous remedies in the WECLA than for the rest of the UK.

20.256 In section 7 we decided that no operator has SMP in the MISBO market in the in the WECLA. In line with this, we do not impose any regulation in the MISBO market within the WECLA.

20.257 We consider it appropriate to exclude the costs and revenues associated with the WECLA from our modelling. Our view is that if costs differ between the charge controlled and non-charge controlled areas, then in order to accurately model the costs in the charge controlled area, we should use geographically disaggregated costs.

20.258 As set out in the LLCC Consultation, Openreach provided data on the proportion of Ethernet circuits in the WECLA, and the cost differential with respect to the rest of the UK (excluding Hull). We have now undertaken an assessment of the relevant geographic cost differentials for Ethernet services submitted by BT. We summarise below Openreach's methodology.

20.259 First, Openreach categorised the costs for low bandwidth AISBO services in the WECLA into the following categories.

- Cable costs: these include access fibre and backhaul fibre costs which are considered to vary according to the locations of the end sites, local exchanges and the equipment components of services. In particular, Openreach considered that the access fibre and backhaul fibre unit costs would be lower in the WECLA than the national average as access lengths are shorter in the WECLA and there are more fibres per km of cable due to a higher density of customers.¹⁶⁶⁹
- Duct costs: these are considered to vary according to the utilisation of duct bores.¹⁶⁷⁰ Openreach estimated that [X] of duct in metro areas and the WECLA is multi bore compared to [X] in other areas and argued that this was the reason why the duct costs attributed to the specific services are lower in metro and WECLA areas.¹⁶⁷¹
- Other costs: these are not considered to vary by geography.

20.260 Second, Openreach calculated the extent to which cable (access fibre and Main Link) and duct unit costs would differ between the WECLA and the UK national average.

- For access fibre, Openreach classified circuits into WECLA and non-WECLA using Ofcom post code data and BT's INS database.¹⁶⁷² To calculate the access fibre unit Gross Replacement Cost (GRC) for circuits in the WECLA, the access fibre total GRC for circuits in the WECLA was divided by the number of circuit ends in the WECLA.¹⁶⁷³ The same calculation was repeated for non-WECLA access fibre costs. Openreach calculated that the access fibre unit GRC was [X] of the national average.¹⁶⁷⁴
- For Main Link fibre, first, the frequency and route km of the different route types in WECLA and non-WECLA were calculated to estimate the volume of Main

¹⁶⁶⁹ Explanatory note provided by BT on 27 April 2012, "2ndS135method270412.pdf".

¹⁶⁷⁰ Explanatory note provided by BT on 27 April 2012, "2ndS135method270412.pdf".

¹⁶⁷¹ See BT non-confidential response to the LLCC Consultation, paragraph 51.

¹⁶⁷² In Openreach presentation to Ofcom on 13 August 2012, "LLCC Geographic de-averaging AISBO 13-08-12.ppt", Openreach set out that cable volumes were obtained from the INS database by taking into account postcodes mapped to the WECLA area, average cable sizes (e.g. four fibres) and utilisation.

¹⁶⁷³ Openreach presentation to Ofcom on 13 August 2012, "LLCC Geographic de-averaging AISBO 13-08-12.ppt".

¹⁶⁷⁴ File attached to Openreach email response to follow up questions on geographic disaggregation provided on 11 December 2012.

Links in the WECLA. Each route was then costed on a CCA basis to derive an average cost per km per route type. From this, a weighted average cost per km was calculated for WECLA and non-WECLA.¹⁶⁷⁵ Openreach calculated that the Main Link average cost per km was [X] of the national average.¹⁶⁷⁶

- For duct costs, Openreach categorised duct costs into different Geotypes on the basis of the number of lines and the density of lines per square km within an area. A weighted average cost per metre was then calculated for Urban Geotypes and Rural Geotypes.¹⁶⁷⁷ Openreach calculated that Duct unit costs were [X] of the national average.¹⁶⁷⁸

20.261 Third, in order calculate the WECLA costs, the unit cost differentials for access fibre, Main Link fibre and duct were applied to the overall share of these cost categories within Openreach's national cost data. The total HCA depreciation costs for both WECLA and national costs were then calculated for each of the service types in the cost data and divided by their corresponding volumes to generate the unit cost differentials. Figure 20.5 below sets out the unit cost differentials between the WECLA and the national average for the main service types in the Ethernet basket.

Figure 20.5: Service unit cost differentials between the WECLA and the national average

Service type	Differential
WES	[X]
BES	[X]
EAD	[X]
EBD	[X]
Other	[X]
Main Links	[X]

20.262 We have assessed Openreach's methodology for disaggregating its national cost data on a geographic basis. We consider that the cost categories identified by Openreach (access fibre, Main Link and duct), are indeed likely to vary by geography. For access fibre and Main Link, we agree with Openreach that the main drivers in unit cost variations are likely to be differences in cable lengths and fibre density – all else being equal, shorter cable lengths and more fibres per cable in the WECLA will result in lower unit costs. For duct costs, in line with Openreach's view, we would expect that the higher concentration of customers in the WECLA compared to the rest of the UK would result in a higher utilisation of duct bores in the WECLA and hence lower unit costs.

20.263 We have also carried out a detailed review of the spreadsheets and calculations that Openreach used to calculate the above estimates and where appropriate we have

¹⁶⁷⁵ Openreach presentation to Ofcom on 13 August 2012, "LLCC Geographic de-averaging AISBO 13-08-12.ppt".

¹⁶⁷⁶ File attached to Openreach email response to follow up questions on geographic disaggregation provided on 11 December 2012.

¹⁶⁷⁷ In Openreach email response to follow up questions on geographic disaggregation provided on 11 December 2012, Openreach explained that Urban Geotypes were those with more than 5000 lines and greater than 326 lines per square km while Rural Geotypes were those with fewer lines and less density.

¹⁶⁷⁸ File attached to Openreach email response to follow up questions on geographic disaggregation provided on 11 December 2012.

suggested amendments. As a result, we are satisfied with the calculations on the geographic disaggregation.

20.264 We have decided to adjust the nationally averaged cost data based on this geographic analysis when modelling low bandwidth AISBO circuits. We believe that this provides a more accurate picture of the costs in the charge controlled area than nationally averaged data. As shown in Figure 20.5 above, our analysis suggests that the costs for low bandwidth AISBO circuits range from between [X] lower than the national average (depending on the type of circuit).

20.265 Since the LLCC Consultation was published, we have expanded our definition of WECLA to include some additional postcode sectors. This is described in Section 5. Given the limited changes in the geographic scope, we have assumed that the extension of the WECLA to include these postcodes does not change the average differential between WECLA and the rest of the UK (excluding Hull).

20.266 Using the data provided to us by BT, we have calculated for each of the main Ethernet services, the proportion of circuits that fall within our definition of WECLA. This follows the definition of WECLA set out in Section 12. This is contained in Figure 20.6 below. We have used the estimate of the cost differential associated with WECLA, and the share of BT circuits that meet our definition of WECLA to remove the costs of provision of circuits in the WECLA from our charge control model.

Figure 20.6: Share of BT's circuits that are in WECLA

Service type	Share in WECLA
WES	[X]
BES	[X]
EAD	[X]
EBD	[X]
Main Links	[X]
Other	[X]

Adjustments to reflect forward-looking efficient costs

The LLCC Consultation proposals

Recalculating holding gains/losses

20.267 As with the approach taken in the TI basket, we proposed to calculate future holding losses or gains by using forward-looking asset price changes, rather than actual in-year asset price changes. We also proposed to exclude other holding gains or losses that BT reports in its RFS. Our approach was equivalent to that taken for the TI basket.

Regulatory Asset Value of access duct

20.268 We proposed to make RAV adjustments to the valuation of access duct that form part of BT's asset base. In particular, we proposed to apply a RAV adjustment both for pre-1997 and post-1997 access duct to the Ethernet basket of services for the reasons set out below.

- One of the inputs to provision of Ethernet services is duct and there was no evidence to suggest that Ethernet services do not use pre-1997 duct. Although

Ethernet services did not exist pre-1997, the services utilise existing as well as new duct network.

- For consistent economic regulation, assets should be valued on a similar basis for all the services that consume those assets. Using different valuation approaches would risk distorting relative prices and decisions based on those prices. We apply the RAV adjustment uniformly across all charge controls to all services that consume duct.

20.269 We noted that this approach differs from that taken in the LLCC 2009. In that charge control, we did not make the RAV adjustment for Ethernet services for the following three reasons:

- they were based on fibre and so the RAV adjustment for the copper access cable was not relevant;
- fibre/Ethernet services were expected to make less use of pre-1997 duct than copper based services; and
- to encourage investment by CPs in new fibre services.

20.270 We stated that the first consideration in relation to the RAV adjustment for copper still held. Ethernet services use fibre and so we did not propose to make the RAV adjustment which relates to copper access cable.

20.271 In relation to the RAV adjustment for duct, we considered that these considerations were not sufficient to justify a different regulatory approach for duct for Ethernet services compared to other services which consume these assets. Although Ethernet services use fibre, the fibre uses duct, some of which predates 1997.

20.272 The final consideration relates to the extent to which not making the RAV adjustment would encourage infrastructure investment by OCPs. Unlike the LLCC 2009, we had proposed in the BCMR Consultation that the proposed Ethernet charge control should not apply nationally, but instead would exclude the WECLA area. This charge control therefore would exclude the area where infrastructure competition has been found to be greatest.

20.273 The June BCMR Consultation had proposed to find that BT has SMP for low bandwidth AISBO services outside the WECLA and high bandwidth Ethernet (single-service Ethernet) outside the WECLA.¹⁶⁷⁹ The June BCMR Consultation had considered the prospect of there being effective infrastructure competition to BT and had proposed that, given the high sunk costs associated with building networks, the economies of scale and scope, and the other barriers to entry and expansion discussed above, competition was not likely to become sufficiently effective in the next three years for low bandwidth AISBO services outside the WECLA.¹⁶⁸⁰

20.274 In relation to high bandwidth Ethernet services outside the WECLA, the June BCMR Consultation had said that the high value of services in this market, combined with the rapid growth in demand implies that OCPs should be better able to justify the investment required to reach new customer sites than in most of the other relevant symmetric broadband origination markets. However, it had proposed that other

¹⁶⁷⁹ See paragraphs 7.180-7.211 and paragraphs 7.243-7.292 of the June BCMR Consultation.

¹⁶⁸⁰ See paragraph 7.207 – 7.211 of the June BCMR Consultation.

limitations, such as the absence of effective interconnection products, exacerbated the advantages that CPs derive from access network ownership and generated a significant barrier to entry and expansion for CPs without these network assets. Therefore the June BCMR Consultation did not consider that competition was likely to become sufficiently effective over the course of the review period.¹⁶⁸¹

20.275 In the light of the findings of the June BCMR Consultation, we did not consider in the LLCC Consultation that excluding the RAV would make any material difference to investment by CPs sufficient to justify a different regulatory approach from other services.

20.276 To prevent any under- or over-recovery resulting from the change in the accounting treatment of the pre-97 duct, we proposed to apply the RAV adjustment to the Ethernet basket. We used BT's RAV model as submitted to us and BT's indication of the proportion of the duct that is related to AI services in order to determine the value of the RAV adjustment. We allocated the adjustment across all Ethernet services within the Ethernet basket.

20.277 BT estimated that 7% of total duct is used by services supplied by Openreach. As with the TI basket, we applied this percentage to BT's absolute duct valuation less duct valuation based on RAV to get the relevant RAV adjustment for MCE, GRC and depreciation.

Removal of transmission asset costs

20.278 Up to 2010/11, BT recovered the cost of the transmission equipment deployed at either end of an Ethernet circuit and which is wholly dedicated to that service through the local end connection charges. BT also capitalised and depreciated this equipment over its useful economic life.

20.279 In the LLCC 2009, we made an adjustment to match costs and revenues by eliminating MCE and depreciation of the assets and replacing them with a measure of the fully expensed cost of the equipment on connection.

20.280 In 2010/11, BT changed the accounting policy to recover the cost of transmission equipment through rentals. This approach could result in a double recovery of the costs that were previously fully expensed on connection per our adjustment in the previous charge control. To prevent this, we therefore proposed to remove the costs associated with transmission equipment assets capitalised before 2010/11, namely depreciation and MCE.

Payment terms

20.281 Similar to the approach taken in the TI basket, we proposed to adjust notional debtors to reflect BT's actual payment terms for each service.

Consultation responses

Recalculating holding gains/losses

20.282 We received no stakeholder response on our proposals to calculate future holding losses or gains by using forward-looking asset price changes and to exclude other holding gains or losses that BT reports in its RFS.

¹⁶⁸¹ See paragraphs 7.287-7.292 of the June BCMR Consultation.

Regulatory Asset Value of access duct

20.283 We set out the responses we received on our proposed adjustment in Section 19.

Removal of transmission asset costs

20.284 We received one stakeholder response on our proposals to the removal of transmission asset costs.

20.285 BT said that Ofcom has removed transmission costs on the basis that they have already been allowed for in the LLCC 2009. BT disagreed on two issues. First, “only part of the transmission equipment costs were recovered upfront through the connection charge, with the remainder being recovered over a period of years through the rental. Only the portion of costs recovered through the connection charge should be removed, and not the entire cost”. Second, BT said that “it is only the cost attribution basis which has changed from connections to rentals, and not the accounting policy”. BT said that “it has always been [its] accounting policy to capitalise the transmission equipment”.¹⁶⁸²

Payment terms

20.286 We set out the responses we received on our proposed adjustment in Section 19.

Our response and conclusions*Recalculating holding gains/losses*

20.287 We did not receive any responses from stakeholders and our approach remains the same. We calculate future holding losses or gains by using forward-looking asset price changes, rather than actual in-year asset price changes. We also exclude other holding gains or losses that BT reports in its RFS.

Regulatory Asset Value of access duct (RAV)

20.288 The RAV adjustment consists of two parts: first, the adjustment for pre 1997 duct assets (consistent with the 2005 Copper Statement) and second the adjustment for post 1997 duct assets (consistent with the WLR LLU CC 2012 Statement).

20.289 We consider that the 2005 Copper Statement made the RAV adjustment (from absolute valuation to indexed HCA) applicable to access infrastructure defined as local ends. Although Ethernet services use fibre, the fibre uses duct, some of which predates 1997. We applied the RAV adjustment to the proportion of duct allocated to Ethernet services that could be said to be equivalent to local ends. BT estimated the relevant percentage of duct to be around 4%.¹⁶⁸³ In the LLCC Consultation we applied the RAV adjustment to the total proportion of duct allocated to Ethernet services (i.e. not just that equivalent to local ends), which was identified by BT as 7%. We consider that it is appropriate to apply the RAV adjustment only to the access network and not to the core network. This is because we consider that the potential for investment in the access network is very limited. However, in the core network, the potential for investment is greater. Applying the RAV adjustment to the core network risks deterring efficient investment.

¹⁶⁸² See BT non-confidential response to the LLCC Consultation, paragraph 41, page 24.

¹⁶⁸³ Openreach response to S135 Notice of 14 February 2013. [3<].

20.290 We also adjusted post 1997 duct value to be consistent with the WLR LLU CC 2012 Statement by reducing the valuation from the absolute value to indexed capital expenditure. This adjustment applies to Ethernet because Ethernet uses post 1997 duct. The relevant percentage of duct allocated to Ethernet identified by BT is around 8%.¹⁶⁸⁴

20.291 The above changes made the RAV adjustment smaller for Ethernet services compared to LLCC Consultation. This is because the pre 1997 adjustment is only applied to the local ends equivalent.

Removal of transmission asset costs

20.292 We have considered BT's response on the removal of transmission assets costs. We are making this adjustment irrespective of the accounting policy at the time when the original adjustment was made in the LLCC 2009. This is because what matters is the actual 2009 adjustment whereby Ofcom allowed BT to fully recover the cost of the transmission assets capitalised up to that point. Therefore, if we allow any subsequent recovery of these capitalised costs via MCE and depreciation, this would be double recovery. Therefore, the method of our adjustment for transmission assets is unchanged from the consultation.

Payment terms

20.293 We amended the payment terms adjustment in the same manner as for the TI basket as we received further information and a breakdown of data from BT. The adjustment reduces MCE by £22m in 2011/12. Although the methodology of the adjustment is now different, the impact is approximately the same as the adjustment we made in the LLCC Consultation for 2010/11, which reduced MCE by £21m.

Impact of adjustments to the Ethernet basket in 2011/12

20.294 The overall effect of our proposed adjustments has increased the Ethernet basket return on capital employed (ROCE) from 14.4%, as reported in the 2011/12 RFS, to 20.7%. The detailed impact of adjustments in 2011/12 based on the updated base year and calculated as explained above is summarised in the figure below.

¹⁶⁸⁴ RAV model 2011/12.

Figure 20.7 Impact of adjustments on the Ethernet basket¹⁶⁸⁵

Adjustment	Revenues (£m)	Operating costs (£m)	Capital costs ¹⁶⁸⁶ (£m)	Mean capital employed (£m)	ROCE (%)
RFS 2011/12					
All Ethernet market (i.e. Ethernet services up to 1Gbit/s)	725	246	284	1,357	14.4%
Adjustments to the scope of the basket					
All services above 1Gbit/s	[X]	[X]	[X]	[X]	
Exclusion of Cablelink, Street Access, CCTV Access, Broadcast Access and ancillary services	[X]	[X]	[X]	[X]	
Adjustments to costs and revenues					
Inclusion of internal EBD, ONBS and associated Mainlink services	[X]	[X]	[X]	[X]	
Adjustments to RFS costs to reflect the scope of the basket	[X]	[X]	[X]	[X]	
Exclusion of ECC assets ¹⁶⁸⁷	-57	n.a.	n.a.	n.a.	
Ethernet basket	733	252	299	1,365	13.4%
Geographic disaggregation					
Exclude services delivered within the WECLA	-96	-23	-28	-132	
Ethernet services outside the WECLA	637	228	271	1,233	11.2%
Ofcom cost adjustments					
Current cost normalisation	-	-	-55	-	
Exclusion of transmission equipment	-	-	-18	-32	
Exclusion of 21CN costs	-	-5	-5	-20	
Payment terms	-	-	-	-22	
Regulatory asset value (RAV) adjustment to duct assets	-	-	-5	-62	
Total Ethernet basket in 2011/12	637	223	187	1,097	20.7%

Source: Ofcom modelling.

We are not making any starting charge adjustments

The LLCC Consultation proposals

20.295 At the start of a new charge control, we often consider whether it is appropriate to make one-off adjustments to prices if they were significantly out of line with costs. To inform this assessment, we typically compare the charges to cost orientation benchmarks (i.e. DRLIC and DSAC).

¹⁶⁸⁵ Not all columns may total correctly as numbers have been rounded. Furthermore there are differences between the size of adjustments presented in the table and the size of the adjustment discussed in the section due to the geographic disaggregation and the scope of the basket that reduce the size of the initial adjustment.

¹⁶⁸⁶ Capital costs include depreciation and holding losses (gains).

¹⁶⁸⁷ The adjustment for ECC relates only to Revenues as BT submitted costs data that did not include ECCs.

20.296 In the LLCC Consultation we calculated DLRIC floors and DSAC ceilings for our base year and extrapolated these cost measures forward on the basis that they would move in line with FAC. Our model predicted that, at the start of the charge control, each of the relevant charges covered by the Ethernet basket would be within the cost orientation benchmarks. Therefore, we did not consider that there was any further reason to consider making starting charge adjustments.

Consultation responses

20.297 We received no stakeholder response on our proposals of not making any starting charge adjustments.

Our response and conclusions

20.298 We have updated our analysis with the 2011/12 base year data, to see if any charges fall outside the DSAC and DLRIC cost orientation benchmarks. The analysis showed that in 2012/13 no charges for which we have DSAC and DLRIC data, are expected to be above DSAC or below DLRIC. Therefore, we have decided not to make start charge adjustments.

20.299 We have also extrapolated DSAC ceilings forward on the basis of the movement in FAC costs to 2015/16, in order to see whether it is likely that the charges will exceed DSAC ceilings by the end of the charge control.

20.300 The results of our model show that, given our sub-baskets and sub-cap constraints, all reported Ethernet services will be below our forecast of DSAC in 2015/16. Given that all reported charges for Ethernet services are below our forecast of DSAC in the first year of the control as well, we consider that the sub caps we are imposing are sufficient to prevent prices becoming excessive during the duration of the control.

Forecasting of service costs

20.301 Following the calculation of base year costs, we forecast the evolution of costs and revenues to the end of the charge control period. In this section, we explain our key forecasting assumptions. Specifically, we describe our approach to:

- volume forecasts;
- efficiency assumptions;
- WACC;
- cost volume relationships;
- asset price changes; and
- reallocation of costs from the TI basket to the Ethernet basket.

Volume forecasts

The LLCC Consultation proposals

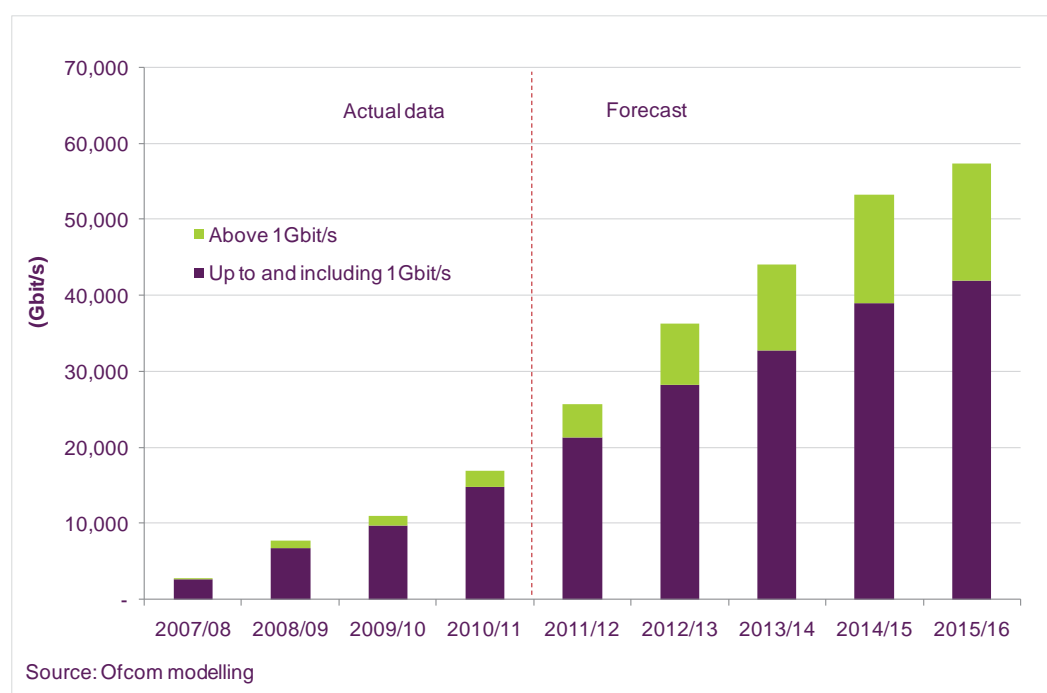
20.302 We received volume forecasts for Ethernet services from various sources, including Openreach, two other CPs and an industry analyst.

20.303 We found that the trends shown in the forecasts appeared to be reasonable and were broadly consistent across the different sources. Furthermore, the pattern of growth in Ethernet volumes was consistent with the decline in TI volumes. We therefore proposed to take into account all of the volume forecasts received to arrive at our base case for our cost modelling, conducting sensitivity testing where appropriate.

20.304 In our base case forecast of Ethernet service volumes, we predicted significant growth in demand for higher bandwidth Ethernet services. We considered that the overall trend in demand over the next few years was likely to be driven by the factors discussed below.

- Increasing demand for broadband and greater capacity required by end-user applications thereby driving the backhaul bandwidth requirements of LLU operators and broadband providers.
- The need to transmit increasingly large amounts of data quickly is driving the need for greater bandwidth. As a result, the bandwidth profile of Ethernet services is likely to change over time, with a trend towards higher capacity circuits.
- The deployment of Next Generation Access ('NGA') and new services delivered over 4G mobile networks will further increase the requirement for backhaul capacity.
- The lower unit cost of Ethernet by bandwidth is likely to drive further significant growth in the demand for Ethernet services.

20.305 Our analysis of Ethernet circuit volumes showed that there had been significant growth over the period from 2007/08 to 2010/11 and that this trend was expected to continue to 2015/16. Of the growth in overall circuits, the most pronounced came from circuits up to and including 1Gbit/s, while from 2011/12 onwards, circuits faster than 1Gbit/s were forecast to grow at a faster rate than lower bandwidth Ethernet circuits (albeit from a lower base).

Figure 20.8: Capacity delivered through Ethernet services

20.306 We also used our forecasts of circuit volumes to derive a forecast of the capacity delivered using Ethernet services, as shown in Figure 20.8 above. This showed a trend of significant growth in capacity over the period 2007/08 and 2010/11 and this was forecast to accelerate after 2010/11.

Consultation responses

20.307 We received four stakeholder responses on our volume forecasts. Three respondents expressed concerns that the increase in Ethernet volumes predicted in our forecasts was too high. Another respondent said that it expected only a small proportion of WES circuits to remain by the end of the charge control.

20.308 Virgin considered that Ofcom should re-examine a number of inputs to the control, including its volume forecasts.¹⁶⁸⁸ Virgin said there is a risk that, in light of the latest available evidence in BT's RFS, Ofcom has predicted too great an increase in AI volumes over the course of the control.¹⁶⁸⁹ Virgin argued that because most of the diminishing TI volumes can be attributed to migration to AI products, the AI and TI volume forecasts are intrinsically linked. Virgin was concerned that the volume forecasts in relation to the reduction of TI circuits, and in particular the relative shift of volumes from TI to AI services, may be overstated. Virgin stated that this could have a significant impact on the control.¹⁶⁹⁰

20.309 BT said that its current view was that the Openreach forecast of AI services provided to Ofcom for the LLCC Consultation was too bullish for the charge control period and that Ofcom should reduce its forecast volumes. Openreach commissioned Analysys Mason to conduct an analysis of the UK market which concluded that the growth in AI demand would be a Compound Annual Growth Rate (CAGR) in low single digits to 2016. BT said that although the forecast was not consistent with its current view of

¹⁶⁸⁸ See Virgin non-confidential response to the LLCC Consultation, paragraph 9, page 15.

¹⁶⁸⁹ See Virgin non-confidential response to the LLCC Consultation, paragraph 10, page 15.

¹⁶⁹⁰ See Virgin non-confidential response to the LLCC Consultation, first paragraph, page 29.

future demand, it highlighted that BT's and Ofcom's forecasts are not as conservative as those of others, and that the size of the market going forward may well be much lower than BT had forecast at the end of 2011.¹⁶⁹¹

20.310 Level 3 argued that the volume of WES circuits predicted to migrate to AI is likely to be inflated unless its concerns around migration are satisfactorily addressed.¹⁶⁹²

Level 3 was concerned that "without the ability to either migrate like for like or incorporate the ability for CPs to perform a shift during migration we are likely to see CPs' WES circuits become stranded assets and forced into a less than ideal cease and provide 'migration' arrangement where CPs will be forced to incur new connection fees and be subject to a new 12 month term".¹⁶⁹³

20.311 CWW noted Ofcom's forecast that approximately two-thirds of existing WES circuits will naturally migrate to MEA during the course of the control and expressed the view that Openreach's target to close the WES platform by March 2015 and move customers off the services by that date may be too aggressive (particularly given the lack of adequate migration solutions). However, CWW said that its view was that only a small proportion of current WES circuits would remain by the end of the charge control.¹⁶⁹⁴

Our response and conclusion

20.312 Following the consultation, we have been able to compare our forecast for 2011/12, as reported in the LLCC Consultation, with the actual outturn. We have also received updated volume forecasts for Ethernet services from Openreach, other CPs and industry analysts. We have analysed all these sources when arriving at our decision on volume forecasts.

20.313 We have compared our Ethernet forecast for 2011/12 with the outturn. Overall, our forecasts were largely accurate. There was a slightly smaller decline in WES and BES than anticipated, and a slightly higher increase in EAD and EBD than forecast. The result is that the total number of circuits in 2011/12 is just under 3% higher than predicted. This is shown in 20.9.

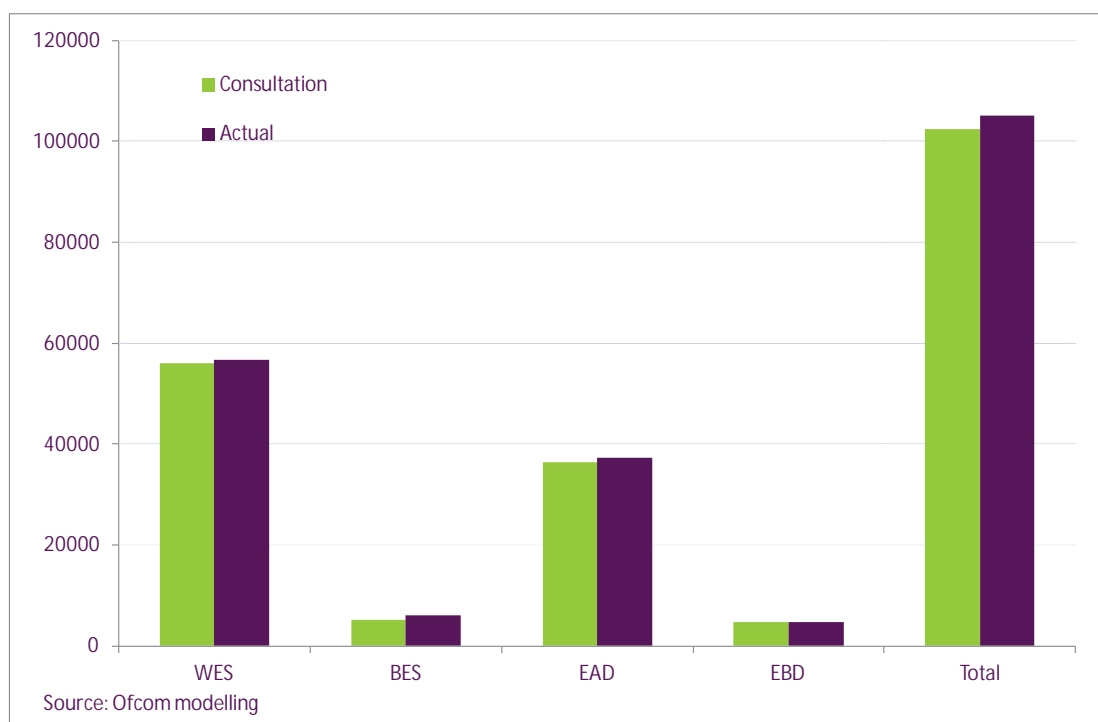
¹⁶⁹¹ See BT non-confidential response to the LLCC Consultation, paragraphs 12-15, pages 43-44.

¹⁶⁹² See Level 3 non-confidential response to the LLCC Consultation, page 20.

¹⁶⁹³ See Level 3 non-confidential response to the LLCC Consultation, page 6.

¹⁶⁹⁴ See CWW response to the LLCC Consultation, paragraphs 15.20-15.21.

Figure 20.9: Comparison of 2011/12 consultation forecasts and actual volumes (number of circuits)



20.314 We have received updated volume forecasts for Ethernet services from various sources, including Openreach, CPs and industry analysts. We note that the new Openreach forecasts received are only up to 2013/14. We note that although in its response to the LLCC Consultation, BT stated that we may need to reduce our forecast growth in Ethernet volumes, this was not reflected in the forecasts it provided for 2012/13 and 2013/14.¹⁶⁹⁵

20.315 In Annex 12, we set out our analysis of our LLCC Consultation forecasts, with the new forecasts received. The LLCC Consultation forecasts predicted a higher rate of circuit growth than Analysys Mason, a similar rate of growth to [X] and [X] and a lower rate of growth than [X] and [X].

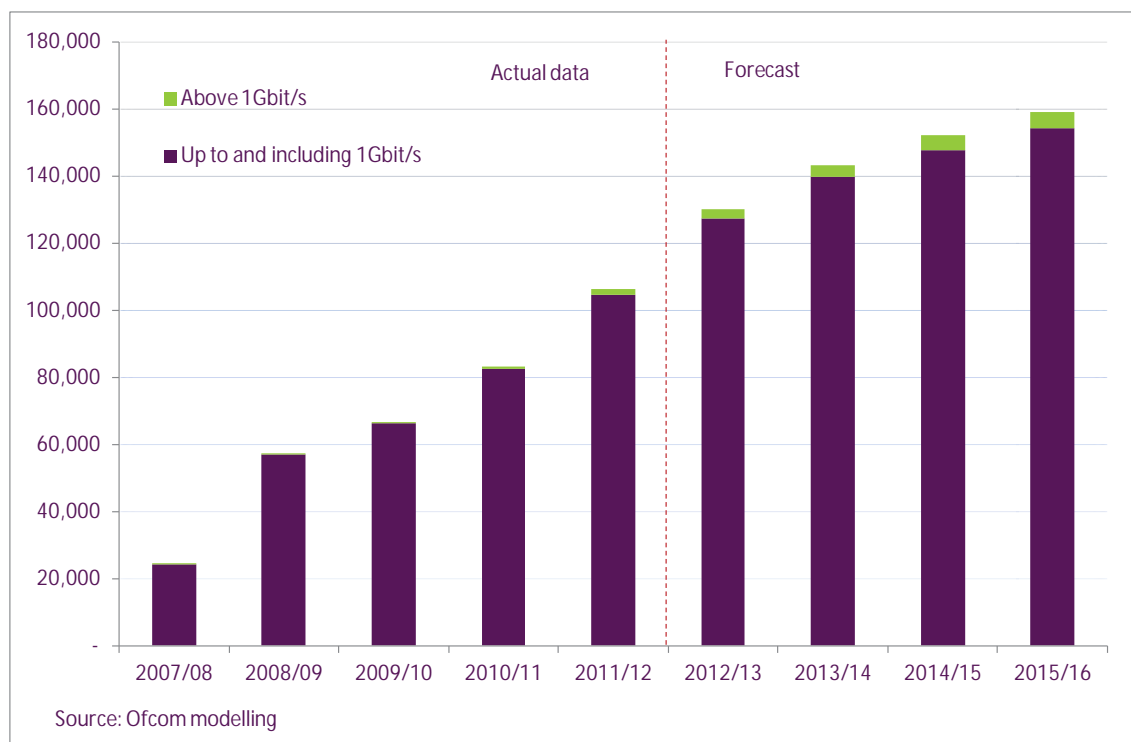
20.316 In relation to the migration from WES to EAD, we note that the decline in legacy circuits in 2011/12 was slightly less than we had forecast. However, although Level 3 was concerned that we anticipated too much migration, both [X] and [X] anticipate higher migration than our LLCC Consultation forecast. This suggests that there is not a clear consensus on the likely future level of migration.

20.317 We have decided to retain the forecast growth rates from the LLCC Consultation. We have therefore adapted the LLCC Consultation forecasts to the new base year and kept the same rate of change for each circuit type as was previously forecast in the consultation. We consider that this decision is justified as the 2011/12 outturn and [X] and [X] volume forecasts are broadly in line with our previous forecasts. We also note that although some stakeholders forecast a different rate of growth, their forecasts point in different directions, with [X] and [X] forecasting higher growth and Analysys Mason forecasting lower growth.

¹⁶⁹⁵ See BT non-confidential response to the LLCC Consultation, paragraph 15, page 44.

20.318 Our forecast of Ethernet circuit volumes, as set out in Figure 20.10, shows that there has been significant growth over the period from 2007/08 to 2011/12, and that this trend is expected to continue to 2015/16.

Figure 20.10: Ofcom historical and forecast volumes for Ethernet services (number of circuits)



Efficiency for Ethernet services

The LLCC Consultation proposals

20.319 In modelling the costs of Ethernet services, we made an assessment of the efficiency improvements that it would be appropriate to assume for operating costs and new capital expenditure.

20.320 We proposed to apply the assumptions on expected efficiency gains only to opex for Ethernet services. We considered that aspects relating to efficiencies in capex were already taken into account through our use of the MEA approach and asset price changes as explained below.

- Our MEA approach to modelling Ethernet services involved assumptions on the use of the most efficient available technology to deliver the services in question. Under this approach, we proposed to shift our modelling of costs from being based on the costs of legacy services to being entirely based on the costs of new Ethernet services.
- Our asset price changes took account of changes in the valuation of certain assets, such as duct.

20.321 We considered a range of indicators to estimate the operating cost efficiency improvement that could reasonably be expected from BT. These can be categorised into three broad headings, namely:

- Openreach-specific historical trends, where we analysed the actual achieved efficiency in recent years;
- internal efficiency targets; and
- external benchmarking studies.

20.322 These sources of evidence are summarised in Figure 20.11 below.¹⁶⁹⁶

Figure 20.11: Evidence on Ethernet efficiency assumption

	Openreach-specific historical trend analysis ¹⁶⁹⁷	Openreach internal efficiency targets ¹⁶⁹⁸	2012 Deloitte Study ¹⁶⁹⁹	Statistical analysis (NERA, Deloitte) ^{1700 1701}	KPMG study
Efficiency (% per annum)	2.7-4.6%	[X]	2.25%	~2%	2.3-2.6%
Comments	Ofcom analysis of Openreach's historical cost data	Internal targets set for the subsequent 3 years	Benchmark against 5 other European operators	Benchmark against US LECs	Excludes fault rates and task times

20.323 We considered that it was appropriate to place most weight on the sources of evidence which were most relevant to Ethernet services. In the absence of historical data and forecasts specific to Ethernet services, we placed most weight on the past and projected efficiency savings achieved by Openreach.¹⁷⁰² Over the four years from 2007/08 to 2010/11, we estimated that Openreach achieved operating efficiency savings ranging from 2.7% to 4.6% per annum.

20.324 We placed less weight on BT's internal planning documents and an extrapolation of its latest rolling forecast. These contained targets for efficiency savings of between [X] and [X] per year from 2011/12 to 2014/15. [X]. We were also mindful of the need for Openreach to have incentives to make efficiency improvements and we noted that if Openreach's internal targets had formed the basis of the charge control, then Openreach would face reduced incentives to make such efficiency savings in future.

20.325 We considered that the benchmarking studies conducted by NERA and Deloitte were less specific to Ethernet services and therefore we also attributed little weight to these. In addition, the NERA study and the 2008 and 2009 Deloitte studies which made use of the US LEC data were problematic due to data not being directly comparable. We also had concerns over the 2012 Deloitte study due to a limited

¹⁶⁹⁶ The evidence was discussed in more detail in Annex 5 of the LLCC Consultation.

¹⁶⁹⁷ Ofcom analysis of BT Group response to S135 Notice.

¹⁶⁹⁸ BT Group response to S135 Notice.

¹⁶⁹⁹ Deloitte, "Analysis of the Efficiency of BT's Regulated Operations", a report for BT, dated 16 February 2012.

¹⁷⁰⁰ NERA, 17 March 2008, "The comparative efficiency of BT Openreach."
<http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/annexes/efficiency.pdf>

¹⁷⁰¹ Deloitte, 29 March 2011, "WBA consultation response"
<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/BT2.pdf>

¹⁷⁰² We noted that in our proposals on AVEs and CVEs we had rejected estimates purely based on historical data. Our analysis of the data provided by BT indicated that the same problems did not apply in using such data to assess the potential for efficiency savings.

number of observations in the sample and minimal variation in the output variables.¹⁷⁰³

20.326 From our consideration of the available evidence, we proposed an efficiency rate for the provision of Ethernet services of 2% to 5% per annum gross. This placed most weight on the historical evidence of efficiency gains made by Openreach.

20.327 This target was consistent with that made under the WLR LLU CC, given that we focused only on Opex efficiency saving, rather than including capex efficiency as well.¹⁷⁰⁴ We also noted that, whilst this target range was below Openreach's internal targets, we believed it was realistic and would provide Openreach with an incentive to meet those internal targets and outperform the targets set under the charge control.

20.328 Our proposed efficiency rate for Ethernet services was higher than what we proposed for TI services. We believed that this was consistent with TI markets being more mature than Ethernet markets and there being greater scope for improvements in efficiency in Ethernet markets.

Consultation responses

20.329 We received several stakeholder responses on our efficiency assumptions. Four respondents raised concerns about our proposal on capex efficiency.

20.330 With regards to the implementation of the MEA approach, TalkTalk raised concerns about whether Openreach was adopting EAD and EBD in an efficient manner and believed that we should verify that the MEA costs were efficiently incurred.

20.331 TalkTalk also said that it was incorrect for us to assume that existing EAD/EBD technology and equipment will not become more efficient over the charge control period and believed that we should apply a capital cost efficiency factor into the forecasting assumptions. TalkTalk said that a 1% difference in the value of X for the Ethernet basket as a result of adopting the MEA approach seemed relatively small and it suggested building a bottom-up model to verify the efficiency of Openreach's cost of delivery.¹⁷⁰⁵

20.332 TalkTalk disagreed with our claim that the use of the MEA approach took efficiency improvements into account and argued that we should have included additional efficiency gains beyond today's productivity levels. For instance, TalkTalk expects that "labour costs.....(which are capitalised) will be reduced". It pointed out that there were some capital costs (such as duct and fibre) that were not affected by the MEA assumption and should also experience efficiency gains.¹⁷⁰⁶

20.333 UKCTA raised concerns that we proposed not to apply an efficiency assumption to capex stating "[T]he MEA approach will capture the efficient level of cost at a given point in time".¹⁷⁰⁷ They claim that, given our proposed glide path approach, there

¹⁷⁰³ Our approach to assessing the different sources of analysis around efficiency gains was set out in greater detail in Annex 5 of the LLCC Consultation.

¹⁷⁰⁴ Note that we accounted for Capex efficiency gains in other ways, as explained above.

¹⁷⁰⁵ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.4-5.6.

¹⁷⁰⁶ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.51.

¹⁷⁰⁷ See UKCTA response to the LLCC Consultation, third bullet, page 24.

was a risk that further efficiency savings leading to ongoing reductions in MEA were not taken into account.

20.334 “Sky considers that Ofcom is incorrect to not apply any efficiency to CAPEX for three reasons”. “First, it implicitly assumes that the newer Ethernet products are the MEA by the end of the charge control period, not now; Second, frontier shift efficiency is continual so that what is seen as the MEA today will no longer be efficient in the future; and Third, Ofcom’s approach incorrectly assumes that BT’s CAPEX related to its newer Ethernet products is the most efficient (i.e. there is no further ‘catch-up’ required).”¹⁷⁰⁸

20.335 TalkTalk raised a number of concerns with the approach we adopted in order to set the range we consulted upon. TalkTalk’s concerns are set out below.

- The potential for efficiency improvements should be based on what was considered to be efficient, rather than what improvements Openreach may consider it can make operating in a near-monopolistic position.¹⁷⁰⁹ It cited this as one reason for rejecting the Deloitte and NERA studies as they considered that the comparator companies were also monopolies.¹⁷¹⁰
- TalkTalk considered that Ofcom had consistently underestimated the level of efficiency that BT had achieved in charge controls.¹⁷¹¹ and quoted BT’s 2012 annual report, which mentioned reductions in operating costs of 6%.
- The efficiency assumptions seems inconsistent with the efficiency assumption used in the WLR LLU CC.¹⁷¹²
- TalkTalk argued that Ethernet services should have a higher efficiency assumption than copper (5%), since they were less mature.¹⁷¹³
- In relation to BT’s internal efficiency targets, TalkTalk argued that BT was likely to underestimate what it was likely to achieve, due to management incentives to set low targets and noted that BT tended to exceed its targets.¹⁷¹⁴ TalkTalk believed that there was no reason why our efficiency assumption should not be equal to or above Openreach’s internal target.¹⁷¹⁵
- TalkTalk argued that there were reasons to believe that Openreach had substantial scope for efficiency improvements, pointing to several indicators of inefficient working and employment practices.¹⁷¹⁶
- TalkTalk submitted that we should have used an efficiency rate of 5%, which was at the top of our proposed range.¹⁷¹⁷

¹⁷⁰⁸ See Sky non-confidential response to the LLCC Consultation, paragraph 50, page 11.

¹⁷⁰⁹ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.21.

¹⁷¹⁰ TalkTalk also cited other methodological reasons for rejecting those reports.

¹⁷¹¹ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.25-5.26.

¹⁷¹² See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.28-5.32.

¹⁷¹³ See TalkTalk non-confidential response to the LLCC Consultation, page 40, footnote 73.

¹⁷¹⁴ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.35-5.36.

¹⁷¹⁵ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.37-5.40.

¹⁷¹⁶ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.47-5.48.

20.336 Telefónica claimed “the lower end [of our range of 2% -5%] is too cautious”. It stated that 2% was below the bottom of the range for all the sources of evidence identified in the LLCC Consultation including BT’s historical trend analysis. Moreover, as a result of the growth in Ethernet volumes, Telefónica believed that there were opportunities and incentives to increase Ethernet efficiency gains above 2%.¹⁷¹⁸

20.337 BT claimed that Ofcom’s operating cost efficiency assumption was too optimistic and should be reduced from 3.5% to 2.5%.¹⁷¹⁹ BT suggested that the gross efficiency target used by Ofcom should be scaled down to reflect both the cost of the investment needed to achieve productivity gains, and recognise that an element of the past unit cost improvements relate to BT catching-up with best practice, and hence that past unit cost achievements cannot be expected to continue indefinitely in future at the same rate. BT added that this net efficiency target is supported also by the trend rate of productivity improvements provided by the Deloitte study.

20.338 Virgin suggested that we set an efficiency assumption towards the bottom of the consulted range in order to ensure the control we set is not too tight noting this is particularly relevant where we are moving to an MEA approach.¹⁷²⁰

Our response and conclusions

20.339 We have reviewed our proposals on capital cost efficiency for leased lines. In the LLCC Consultation, we considered that for Ethernet services the asset price changes and MEA approach took into account efficiency savings in capital expenditure.¹⁷²¹

20.340 In relation to the legacy services, we modelled them assuming that they had the costs of the MEA equivalent. As the costs for an EAD 10 circuit are significantly less than those of a WES 10 circuit, this amounts to an efficiency assumption for those legacy services forecast to still remain at the end of the charge control. However, as we have allowed BT the transition costs of those legacy circuits not forecast to transition by the end of the control, we consider that this does not amount to a supra-efficiency assumption.

20.341 TalkTalk has queried that this approach appears different from that used in the WLR LLU CC. We have reviewed the data on Openreach’s past and forecast capital cost efficiency collected for that charge control. We note that both the past and historical trends suggest a higher capital cost efficiency than is suggested by asset price trends alone. This suggests that historical asset price trends are not sufficient to explain all the actual capital cost efficiency realised. In particular, real asset price changes imply a capital cost efficiency [~~X~~], which is below both Openreach’s historical and its forecast capital cost efficiency.

20.342 Given this, we have concluded that it is not appropriate to assume that changes in asset prices fully capture Openreach’s capital cost efficiency. We therefore will apply our efficiency assumption to both capital and operating costs. For capital costs, the total efficiency assumption will include efficiency savings attributable to falls in real asset prices, as well as other reductions in capital costs.

¹⁷¹⁷ See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.49.

¹⁷¹⁸ See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 150, page 44.

¹⁷¹⁹ See BT non-confidential response to the LLCC Consultation, paragraphs 29-32, page 46.

¹⁷²⁰ See Virgin non-confidential response to the LLCC Consultation, paragraphs 9-11, page 15.

¹⁷²¹ See paragraphs 5.56 of the LLCC Consultation.

20.343 We have updated our analysis of historical and forecast efficiency to reflect Openreach's total efficiency. The different evidence we have used is in Figure 20.12.

Figure 20.12: Evidence on Ethernet efficiency assumption

	Openreach-specific trend analysis ¹⁷²²	Openreach internal efficiency targets ¹⁷²³	2012 Deloitte Study ¹⁷²⁴	Statistical analysis (NERA, Deloitte) ^{1725 1726}	KPMG study
Efficiency (% per annum)	[X]	[X]	2.25%	~2%	2.3-2.6%
Comments	Ofcom analysis of Openreach's historical cost data	Internal targets set for the subsequent 3 years	Benchmark against 5 other European operators	Benchmark against US LECs	Excludes fault rates and task times

20.344 Over the past three years from 2009/10 to 2011/12, Openreach's total cash cost efficiency has averaged at around 5% excluding non-replicable one-off savings. The only one-off saving which is excluded is a one-off reduction to BT's cumulo bill in 2010/11. This was a step change from one ratings assessment (2005) to another (2010). As the 2010 assessment will remain in place until 2015, this will be in place for almost all the charge control period and it is difficult to predict the outcome of the next review.¹⁷²⁷ In 2011/12, Openreach's actual cash cost efficiency saving was [X].¹⁷²⁸ This is similar to 2010/11 but lower than the [X] efficiency for 2011/12 which BT had forecast in August 2011.¹⁷²⁹ Analysis of historical data thus suggests an efficiency range around 5%.

20.345 Ofcom has obtained financial forecasts of the level of efficiency assumed in Openreach's Medium Term Plan. This data contains forecasts of Openreach's expected efficiency savings between 2012/13 and 2014/15. We note that Openreach anticipates efficiency reductions ranging between [X] in each of three years. We note that this is in contrast to BT's claim that productivity improvements will become harder to achieve in future.

20.346 We believe that Openreach management's view of efficiency gains provides a relevant benchmark. This data is recent, Openreach-specific and is produced in the normal course of Openreach's business. This suggests that it is less likely to be impacted by downward bias for regulatory purposes. These internal targets imply an efficiency range of [X]. We note that this efficiency range is greater than that implied by past efficiency gains, and that the actual 2011/12 efficiency achieved was less

¹⁷²² Ofcom analysis of BT Group response to S135 Notice.

¹⁷²³ BT Group response to S135 Notice.

¹⁷²⁴ Deloitte, "Analysis of the Efficiency of BT's Regulated Operations", a report for BT, dated 16 February 2012.

¹⁷²⁵ NERA, 17 March 2008, "The comparative efficiency of BT Openreach."
<http://stakeholders.ofcom.org.uk/binaries/consultations/lcc/annexes/efficiency.pdf>

¹⁷²⁶ Deloitte, 29 March 2011, "WBA consultation response"
<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/BT2.pdf>

¹⁷²⁷ Cumulo costs are included in the costs we model for BT as part of land and building costs. Land and building costs are provided by BT but not disaggregated further. The next ratings assessment is in 2015 and at this stage it is not possible to predict the outcome of that assessment. .

¹⁷²⁸ BT response to S135 request, dated 14 December 2012 [X].

¹⁷²⁹ BT Group response to S135 Notice of 1 July 2011, dated 12 August 2011.

than the target. This suggests that, contrary to TalkTalk's suggestion, the internal target for 2011/12 did not underestimate the efficiency savings.

20.347 We believe a number of the points made by TalkTalk are relevant, but are issues we did consider when making our consultation proposal, most notably:

- the level of weight we placed on the NERA and Deloitte reports were low as we had concerns about the methodology used and the reports were not directly relevant to Ethernet services; and
- we considered the level of maturity in both the TI and Ethernet markets and this is reflected in the different level imposed for the efficiency assumption in each market.

20.348 TalkTalk correctly recognises that the design of this charge control means that, at whatever the level of efficiency we set, BT will always have an incentive to outperform it. This is because it can retain the benefit of any additional efficiency achieved until the charge control is reset.

20.349 We have considered TalkTalk's suggestion that we have historically set the efficiency target too low. We note that this is not a like for like comparison as Openreach offers products and services which are much broader than what comprised the AI basket. Secondly, part of the efficiency outperformance could have been attributable to the design of the charge control itself, which encourages outperformance of the efficiency target, although this would require additional ex-post analysis to verify.

20.350 With regards to TalkTalk's reference to BT's annual report where there are suggestions BT see a number of opportunities to make future efficiency savings, we understand that the 6% refers to BT Group as a whole not specifically to Openreach.

20.351 Although Telefónica suggested that the low end of our consulted range was too low, the purpose of our consultative range is to allow sufficient, but bounded, flexibility whilst we finalise our proposals. Telefónica did not in its response suggest the level at which the efficiency assumption should be set.

20.352 In deciding on the appropriate level of efficiency, we have consulted a number of sources, including benchmarking reports, as well as data on past and future efficiency savings achieved and anticipated by Openreach. As discussed in the LLCC Consultation, we continue to place limited weight on the benchmarking reports, which we consider to have methodological problems. We note that historical efficiency savings imply a total efficiency assumption in the region of 5%, whereas Openreach anticipates efficiency assumptions in the region of [3-5%] in the period 2012/13-2014/15.

20.353 We have placed most weight on the past efficiency savings achieved by Openreach. These show that Openreach has been able to achieve an efficiency saving averaging around 5% for the period 2009/10 to 2011/12. We note that Openreach's forecasts suggest that at least this level should also be achievable in the future. Given the level of uncertainty associated with forecasts, we have concluded that Openreach should be able to achieve efficiencies of 5% per year.

20.354 This efficiency rate is a gross efficiency rate and excludes the offsetting costs of achieving those gains (e.g. the costs of staff leaving the business). We note that the WLR LLU CC found that a gross efficiency rate of 5% corresponds to a net efficiency

rate of 4.5% once the costs of leavers were excluded. We have therefore applied a net efficiency rate of 4.5% to both operating and capital costs.

WACC

The LLCC Consultation proposals

20.355 In the LLCC Consultation, we proposed to use a pre-tax real cost of capital estimate for the 'rest of BT' of 6.5%. This was the same cost of capital as we had applied in the recent WBA CC¹⁷³⁰ and in the subsequent WLR LLU Statement.¹⁷³¹

20.356 However, we also stated that we intended to consider any movements in the cost of capital parameters prior to reaching a decision in order to ensure that the estimate of the WACC remained appropriate. We said that, if the relevant parameters had changed materially, we would consider whether a change to our cost of capital estimates would be appropriate.

20.357 Further details on our proposed approach were included in Annex 7 of our Consultation document.

Consultation responses

20.358 Stakeholder responses on the cost of capital are summarised in Annex 14 of this Statement.

Our response and conclusions

20.359 As set out in Annex 14, we have estimated the pre-tax real cost of capital for the Rest of BT to be used in these charge controls to be 7.0%.

Openreach's cost volume relationships

The LLCC Consultation proposals

20.360 The impact that forecast changes in volumes have on forecast costs in our model (before efficiency improvements are taken into account) is determined by AVEs and CVEs.

20.361 In order to ensure that we were taking a consistent approach to the charges offered by BT in respect of increasing Ethernet volumes and falling TI volumes, we considered it appropriate to apply the same approach to modelling cost volume relationships in the Ethernet basket as was used for the TI basket.

20.362 As with TI services, our proposed approach was to forecast BT's costs using data submitted by Openreach on AVEs and CVEs, after making the following adjustments.

- Apply the individual component-level AVEs and CVEs, rather than using an arithmetic average of each of these values.
- Weight the 'indicative' CVEs by the corresponding AVEs to get a final CVE.

¹⁷³⁰ WBA CC, July 2011, <http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/>

¹⁷³¹ <http://stakeholders.ofcom.org.uk/consultations/wlr-cc-2011/?a=0>

- Make a reduction of 10% to the submitted CVE for the category of 'General Management and Other' and for Admin CVEs.

Consultation responses

20.363 BT claimed that the Access Fibre AVE used in the model, which is equal to 0.13, did not reflect the elasticity of Access Fibre.¹⁷³² BT proposed a value of 0.80 for the Access Fibre AVE.¹⁷³³ BT argued that because the LRIC system calculates AVEs using a decremental approach, it may not be relevant to forecasting future cost movements. BT said that intuitively the Access Fibre AVE should be relatively high as the growth in Ethernet services has led to the expansion of the access network where there are few opportunities for economies of scale. BT argued that in such circumstances, it would expect relatively low fixed common costs and hence the correct AVE for Access Fibre should be higher than the 0.13 used in the LLCC Consultation.¹⁷³⁴ BT identified a value of 0.80 for the Access Fibre AVE on the basis of two approaches: evidence from the RFS and an application of Ofcom's approach to forecasting additional capex to historical cost and volume information.¹⁷³⁵

Our response and conclusions

20.364 We have carefully considered BT's point that the Access Fibre AVE calculated using the BT LRIC model is too low. We understand that the LRIC model calculates the cost volume relationships (CVRs) from which AVEs are derived using a decremental approach.¹⁷³⁶ This assesses the amount of costs saved if BT no longer had the volume of services associated with that product in a given year. This gives a calculation of the incremental costs associated with a service as a share of total costs.

20.365 This methodology appears suitable for most of the asset types we consider. For most of the asset costs the network has largely been built and volume changes are a result of an existing network being used more (or less) intensively. As discussed in Section 19, the average relationship between LRIC and total cost should be a reasonable approximation of the incremental costs of serving an additional customer.

20.366 We believe that the Access Fibre CVR is likely to be different to those of the other asset types we model. For asset types such as Local Exchange, Duct and Main Exchanges, we would expect that a significant proportion of an increase in circuit volumes will be served by the existing network infrastructure – as circuit volume increases, the assets will be used more intensively. As a result, we consider that it is appropriate to use BT's LRIC model to estimate AVEs for these asset types.

¹⁷³² See BT non-confidential response to the LLCC Consultation, page 44, paragraph 18.

¹⁷³³ See BT non-confidential response to the LLCC Consultation, page 45, paragraph 22.

¹⁷³⁴ See BT non-confidential response to the LLCC Consultation, page 44, paragraph 18.

¹⁷³⁵ The analysis based on BT's RFS consists of the comparison over time of the unit cost of Access Fibre per circuit for Ethernet services: in the period 2007/08 to 2011/12 BT identified a common pattern between the unit cost and volumes for Access Fibre that is not consistent with an AVE of 0.13. BT also estimated the Access Fibre AVE applying, for the period 2007/08 to 2011/12, the formula used by Ofcom to forecast additional capex (table A5.20 of the LLCC Consultation) to address demand variations. According to this methodology, and using % changes in GRC, BT obtains an average AVE equal to 0.80.

¹⁷³⁶ In footnote 21 of its non-confidential response to the LLCC Consultation (page 44), BT explains that CVRs are constructed by calculating how much cost would be avoided if BT no longer had the volume of services provided in that year. If the asset (or cost) to volume relationship is a linear one, say 0.1, then this would mean that 90% of costs are fixed. In other words, if volumes reduced by half then total costs would fall by 5%.

20.367 Access Fibre, on the other hand, is likely to possess fewer opportunities for such economies of scale and density. The expansion of fibre services requires BT in many cases to expand the fibre footprint of its network, rather than serving more customers using the existing assets. This expansion of the network is likely to be geographically dispersed, producing fewer opportunities for economies of scale and density than if the expansion was concentrated in a given geographic area. On each occasion that BT has to install new fibre when connecting a customer, BT will need to make capital expenditure (i.e. BT cannot use the existing fibres more intensively).

20.368 We have considered the likelihood that BT will indeed be required to make capital expenditure as a result of installing new fibre over the forecasting period of the LLCC model by. Figure 20.13 below shows the forecast evolution of Ethernet basket circuit rental volumes and fibre component volumes from 2011/12 to 2015/16.

Figure 20.13: Ofcom forecast of Ethernet basket annual circuit rental volume growth

	2011/12	2012/13	2013/14	2014/15	2015/16
Circuit rental volumes	[X]	[X]	[X]	[X]	[X]
% change in circuit rental volumes	[X]	[X]	[X]	[X]	[X]
Fibre component volumes	[X]	[X]	[X]	[X]	[X]
% change in component volumes	[X]	[X]	[X]	[X]	[X]

Source: Ofcom forecast of Ethernet basket circuit rental volumes

20.369 Figure 20.13 shows that circuit volumes are forecast to increase every year during this period and that the rate of growth is predicted to be highest in 2012/13 and progressively decrease thereafter. The predicted fibre component volumes display a similar pattern but their growth is lower for every year that is forecast. This may reflect more fibre becoming available as WES services are ceased, and also if additional fibre was installed in the first place.

20.370 Based on our volume forecasts, we conclude that although it will not be necessary for BT to lay new fibre for every new circuit that is connected, BT is likely to need to make capital expenditure to install new fibre as reflected by the increase in fibre component volumes.

20.371 We have reviewed BT's proposal of using an Access Fibre AVE calculated on the basis of historical cost and volume information (from 2008/09 to 2011/12). BT has proposed that Ofcom uses an AVE based on either of the following methodologies:

- Method 1: $AVE = Capex(t) / GRC(t-1) \times (1+APC(t)) \times \text{annual \% change in circuit volume } (t)$;
- Method 2: $AVE = \% \text{ change in GRC} / \text{annual \% change in circuit volume } (t)$

Figure 20.14: AVEs submitted by BT calculated on the basis of historical cost and circuit volume information

[X]

20.372 We consider that, subject to a modification, Method 1 is a legitimate approach to estimating historical AVEs.¹⁷³⁷ BT has derived Method 1 by rearranging the formula the LLCC model uses to forecast additional capital expenditure.¹⁷³⁸ [X].

20.373 The formula proposed by BT uses the annual percentage change in circuit volumes. This is similar to the other AVEs supplied by BT. In our model, we forecast costs using component volumes rather than the volume of circuits. We have therefore double checked whether the calculated AVE would differ if we used component rather than circuit volumes. We have estimated historical AVEs (see Figure 20.15 below) using the following formula:

$$\text{AVE} = \text{Capex}(t) / \text{GRC}(t-1) \times (1 + \text{APC}(t)) \times \text{annual \% change in component volume}(t);$$

Figure 20.15: AVEs calculated by Ofcom on the basis of historical cost and component volume information

2009/10	2010/11	2011/12	Three year average
[X]	[X]	[X]	[X]

20.374 Figure 20.15 shows that in 2009/10 and 2010/11, the AVE derived from component volumes is similar to those derived from circuit volumes. However, in 2011/12, we have calculated a higher AVE. We note that 2011/12 had a particularly high growth rate in component volumes, which was higher both than in the previous years, as well as higher than we anticipate going forward.

20.375 In our model we have adopted an AVE of 0.8 for access fibre. This is consistent with the calculations for historical CVRs for circuits and as well as components in two of the three years for which we have historical information. We note however, that the value of X would be unchanged if we were to have an AVE based on the three year historical average for components of [X]. In reaching this decision we have noted that the choice of access fibre AVE has a small impact on the value of X because the increase in component volumes is forecast to be relatively modest.

Asset price changes

The LLCC Consultation proposals

20.376 In the LLCC Consultation, we proposed to adopt the same asset price change for assets used by Ethernet services as those used by TI services. As with our approach on RAV, this approach would ensure that the same assets were valued in the same way, even if they were used for different services. We discussed the asset price assumptions in detail in Annex 5 of the LLCC Consultation.

¹⁷³⁷ We believe that Method 2 is less accurate because it does not take into account asset price changes and is not consistent with the formula used in the LLCC model.

¹⁷³⁸ LLCC Consultation, Table A5.20, sets out the following formula: $\text{Capex}(t) = \text{Total GRC}(t-1) \times (1 + \text{APC}(t)) \times \text{AVE} \times \text{annual \% change in component volume}(t)$

Consultation responses

20.377 We received no response from stakeholders on our proposal to use five-year historical average asset price change.

Our response and conclusions

20.378 We have updated the historical asset price change to include 2011/12 data. This is set out in Annex 12.

Reallocation of costs from the TI basket to the Ethernet basket

20.379 Please see Section 19.

Value of X and sensitivity analysis

The LLCC Consultation proposals

20.380 In the LLCC Consultation we explained that the value of X could be affected by the items set out below.

- Changes in base year cost data, for example if there is a material change in cost data.
- Changes in our approach to technological change.
- Changes in the assumed level of operating efficiency.
- A change in the approach to calculating AVEs and CVEs.
- A change in the WACC.
- A change in the impact of geographic disaggregation
- Changes in the volume forecasts.

20.381 Our sensitivity analysis suggested that individual changes to inputs could result in the value of X varying to between RPI-9.5% and RPI-14%, with most sensitivities lying in the range from RPI-10% to RPI-14.00%. Based on our assessment of the issues that affected our results, we proposed a base case of RPI-12% for the Ethernet basket, within the range of RPI-8% to RPI-16%.

Consultation responses

20.382 Several stakeholders responded on our proposal regarding the overall level of control for Ethernet services. Colt and Telephony Services Ltd expressed agreement with the level of the proposed control.¹⁷³⁹ However, Virgin and BT expressed reservations.

20.383 Virgin said that it would be appropriate to set the X at no less than the top of the consulted range (-8%). They considered that this level of X would balance CPs'

¹⁷³⁹ See Colt non-confidential response to the LLCC Consultation, Executive Summary

incentives to invest in network infrastructure whilst still ensuring that access to BT's wholesale services is still available where investment opportunities are limited.¹⁷⁴⁰

20.384 BT said that the combined effect of our proposed cost adjustments led to prices that are lower than they should otherwise be. BT also argued that there were a number of flaws in our proposed approach which if corrected would reduce the proposed X substantially.¹⁷⁴¹

Our response and conclusions

20.385 Given the modelling assumptions described above, we have calculated that the value of X for Ethernet services is -11.00%. This is the amount by which we forecast that charges in the Ethernet basket will on average need to decrease in real terms every year in order to bring them into line with forecast costs, including a return on capital, by the end of the charge control.

20.386 In relation to BT's point on a number of flaws in Ofcom's proposed approach which if corrected would reduce the proposed X, we have addressed those issues earlier in this Section.

20.387 Virgin was concerned that we failed in our proposals to promote competition at the infrastructure level. However, we consider that the proposal for a safeguard cap for Ethernet services in the WECLA took account of the greater prospects for infrastructure competition there. In the rest of the country, the prospects for infrastructure competition for AI services were much lower, as identified in Section 7.

The Ethernet basket control meets the relevant tests under the Act

Powers under sections 87 and 88 of the Act

20.388 We are imposing a charge control on BT by means of an SMP condition under section 87(9) of the Act.¹⁷⁴² Figure 20.1 above summarises the proposed Ethernet basket control.

20.389 The Ethernet basket control applies to specific services in two markets identified in the market review Section 4.¹⁷⁴³ The specific services, and the markets to which the proposed Ethernet basket control applies, are set out in the SMP condition at Annex 7 of this Statement.

20.390 Section 88 of the Act states that Ofcom should not impose an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse effects arising from price distortion and it also appears that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and

¹⁷⁴⁰ See Virgin non-confidential response to the LLCC Consultation, paragraph 12, page 15.

¹⁷⁴¹ See BT non-confidential response to the LLCC Consultation, paragraph 10.a, page 7.

¹⁷⁴² SMP condition 5.3 at Annex 7 of this Statement.

¹⁷⁴³ These are: the wholesale market for low bandwidth alternative interface symmetric broadband origination in the UK excluding the Hull Area and the WECLA, at bandwidths up to and including 1Gbit/s; and the wholesale market for multiple interface symmetric broadband origination in the UK excluding the Hull Area and the WECLA.

- conferring the greatest possible benefits on the end-users of the public electronic communications services.

20.391 In setting charge controls, section 88 also requires that we must take account of the extent of the investment in the matters to which the condition relates of the person to whom the condition it to apply – i.e. BT.

20.392 We received one stakeholder response on the requirements under section 88 of the Act. Virgin did not disagree with our charge control proposal but raised concerns on the consistency of the proposal for the Ethernet basket and section 88 of the Act. Virgin considered that ‘the proposed price control on high bandwidth Ethernet services is wholly disproportionate and the services should be removed from the condition.’ Virgin also said that should the services remain within the control there is likely to be a significant adverse effect on competition within the fledgling MISBO market. Virgin did “not consider that such a control would be consistent with the requirements under section 88 of the Act”. “In particular, 88(1)(b)(ii), the control is required to be appropriate for the purposes of promoting sustainable competition”. Virgin does “not consider that Ofcom has explained how this control (certainly in relation to included MISBO products) adequately satisfies the statutory test”.¹⁷⁴⁴

20.393 We have evaluated Virgin’s concerns and consider that the control on high bandwidth Ethernet services does satisfy Section 88 of the Act. In section 7, we have identified that BT has SMP for high bandwidth Ethernet services. We address Virgin’s concerns relating to the impact of the charge control on incentives to invest in section 13 where we have identified that a price control on some high bandwidth Ethernet services outside the WECLA is appropriate. We therefore consider that we have satisfied the statutory.

There is a relevant risk of adverse effects arising from price distortion

20.394 As set out in the Section 7, and explained further in Sections 12 and 13, we consider the relevant risk of adverse effects arising from price distortion is the risk that BT might fix and maintain its prices for the specific services that we are including in the Ethernet basket control at an excessively high level.

Promoting efficiency

20.395 We consider that imposing the SMP condition is appropriate for the purpose of promoting efficiency, since:

- In the absence of competitive pressures, we believe that BT would have limited incentives to seek to reduce its costs of providing wholesale leased lines services (see Sections 12 and 13).
- In setting the charge controls, we are using an RPI-X formulation, so that BT is encouraged to achieve greater productive efficiency in providing wholesale services (see Section 18); This would be achieved, since the form of charge control would allow BT to keep any super-normal profits that it earns within the defined period by reducing its costs beyond the efficiency gains we have assumed in setting the charge control. In the longer run, these costs savings could be passed on to customers.

¹⁷⁴⁴ See Virgin non-confidential response to the LLCC Consultation, paragraph 28, page 18.

- By bringing charges more into line with forecast costs, our charge control would increase allocative efficiency (see Section 18).
- The charge control has been set to allow BT to earn a reasonable rate of return (the cost of capital) if it is efficient. This is the approach that Ofcom has applied over the charge control periods to encourage efficient investment (see Section 18).
- The broad basket that we have proposed would allow BT to recover common costs in an efficient manner (see Section 18).

Promoting sustainable competition and conferring the greatest possible benefits on end-users

20.396 We also consider that the charge controls are appropriate to promote sustainable competition and to confer the greatest possible benefits on end-users of public electronic communications services.

20.397 The market analysis we have conducted, as set out in Section 7, suggests that there is a sufficient risk that BT might fix and maintain its charges for the services within the scope of the Ethernet basket at an excessively high level, which would be to the detriment of competition. Addressing the risk of excessive pricing via an RPI-X type of charge control would promote sustainable competition, which we consider is likely to be the most effective way of benefiting end-users of public electronic communications services. It would enable greater choice of services for end users in terms of choice, price, quality of service and value for money.

20.398 Although the charge control applies to baskets of services, we have implemented appropriate safeguards to ensure that BT does not use the pricing flexibility offered to it in an anti-competitive manner (see paragraphs 20.53-20.121).

Investment matters

20.399 When designing the Ethernet basket control we have also taken into account the need to ensure BT has the correct incentives to invest and innovate. We have done this in the following three respects:

- first, in modelling BT's forecast costs, we have built in a reasonable return on investment (see paragraphs 20.356-20.360)
- second, we have used an RPI-X form of charge control, which encourages and rewards investment in new, more efficient technologies, since BT would be able to keep any efficiency gains that go above and beyond our efficiency assumptions over the course of the charge control (see Section 17); and
- third, our implementation of the MEA approach would allow BT the ability to recover its costs and would provide incentives to invest in innovative and more efficient technology (see paragraphs 20.122-20.230).

We have considered the tests under section 47 of the Act

20.400 Any SMP condition must also satisfy the tests set out in section 47 of the Act, namely that it must be:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or a particular description of persons;
- proportionate as to what it is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

20.401 We consider these tests are satisfied.

The SMP condition is objectively justifiable

20.402 In Section 7, we have set out our finding that BT has SMP in the markets covered by the Ethernet basket control. In the absence of any charge control, this would allow BT to set charges unilaterally, leading to a risk of excessive pricing. This would have an adverse impact on both the ability of companies to compete in the downstream provision of leased lines services and on consumer choice and value for money. Our charge controls have been designed to address this risk while allowing BT the ability to recover its costs, including a reasonable return on investment.

20.403 As a result of the analysis set out above we consider the SMP condition is objectively justifiable.

20.404 We have set a value of X based on our assessment of forward-looking costs and on our forecasting assumptions as set out from paragraphs 20.268-20.295 and 20.302-20.379 respectively.

20.405 We have imposed sub-basket constraints on those services where we have identified a particular risk of excessive pricing as set out in paragraphs 20.53-20.121.

20.406 We have set out the basis on which we have decided to adopt the MEA approach (see paragraphs 20.122-20.230).

20.407 We have conducted an analysis of which costs are common between the TI and Ethernet baskets as set out in paragraphs 19.309-19.367. Based on this analysis, we have reallocated £46m from the TI basket to the Ethernet basket.

The SMP condition does not discriminate unduly

20.408 The SMP condition does not discriminate unduly against a particular person or particular persons because any provider of communications networks, services or associated facilities can request relevant Ethernet services within the scope of the proposed Ethernet basket control from BT.

20.409 We consider the SMP condition does not discriminate unduly against BT as it is the only CP to hold SMP in the two relevant markets and the Ethernet basket control seeks to address that market position, in particular BT's ability and incentive to set excessive prices for the services we have included in the basket control.

The SMP condition is proportionate

20.410 The charge controls are proportionate because they directly address the risk of excessive pricing identified in Section 7 and are focused on ensuring that there are

reasonable prices for the services in question. The charge controls allow for BT to have the ability to make a reasonable return on investment and provide BT with the incentives to invest and develop its network.

20.411 For the reasons set out above, therefore, we consider the SMP condition is:

- appropriate to achieve the aim of addressing BT's ability and incentive to charge excessive prices for the services we have included in the Ethernet basket control;
- necessary in that it does not, in our view, impose controls on the prices BT may charge for the services we have included in the Ethernet basket control that go beyond what is required to achieve the aim of addressing BT's ability and incentive to charge excessive prices for these services; and
- such that it does not, in our view, produce adverse effects that are disproportionate to the aim pursued, which is to address BT's ability and incentive to charge excessive prices for the services we have included in the Ethernet basket control.

The SMP condition is transparent

20.412 Finally, for reasons discussed above, we consider the SMP condition is transparent. Its aims and effect are clear and it has been drafted so as to secure maximum transparency. The text of the SMP condition has been published with this Statement. Its intended operation is also aided by our explanation in this Statement. We have also set out the likely impact of the Ethernet basket control on prices for the duration of the control.

We have considered sections 3 and 4 of the Act

20.413 We also consider that the Ethernet basket control fits with our duties under sections 3 and 4 of the Act.

20.414 For the reasons set out above, we consider the Ethernet basket control will promote competition in the relevant markets and will therefore further the interests of citizens in relation to communication matters and the interests of consumers in the downstream retail markets.

20.415 We consider the basket control will, together with the other measures taken within the charge controls set out in this Statement, secure the availability throughout the United Kingdom of a wide range of electronic communications services.

20.416 We have also had regard in designing the Ethernet basket control to, in particular:

- the desirability of promoting competition in the relevant market;
- the desirability of encouraging investment and innovation in the relevant market; and
- the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.

20.417 Finally, in performing our duty to further the interests of consumers, we have also had regard when designing the Ethernet basket control, in particular, to the interests of those consumers in respect of choice, price, quality of service and value for money.¹⁷⁴⁵

¹⁷⁴⁵ For more information on Ofcom's general duties, see Annex 2.

Section 21

Controls for AI services in the WECLA

Introduction

- 21.1 In Section 5, we have identified a geographic market covering an area that we refer to as the West, East and Central London Area (the WECLA) for wholesale low bandwidth alternative interface symmetric broadband origination (AISBO) at bandwidths up to and including 1Gbit/s (we will refer in this Section to services falling within that proposed market as 'AI services in the WECLA'). We are making a market power determination that BT has SMP in that market, based on our overall assessment of the economic characteristics.¹⁷⁴⁶ However, our view is that the prospects for competition in this market over the course of the forward-looking period are better than in other markets, noting especially that demand is expected to continue its rapid growth and a number of large operators have significant network infrastructure in the WECLA.
- 21.2 This Section sets out our conclusions with regards to the controls for AI services in the WECLA.
- 21.3 We discuss our decisions to include a fair and reasonable pricing obligation, but not to impose an additional cost orientation obligation in relation to AI and other services in Section 9.

Summary of our key decisions

- 21.4 As set out in Section 7, the risk of an adverse effect arising from price distortion by BT through its incentive and ability to charge excessive prices for AI services in the WECLA should be addressed by the imposition of an appropriate charge control.¹⁷⁴⁷ However, we have recognised in Section 7 that, due to the existence of alternative access infrastructure in the WECLA, there are better prospects for the development of competition in this market and this matter should be taken into account in our specific proposal for the appropriate price control.¹⁷⁴⁸
- 21.5 In light of the above analysis and having carefully considered consultation responses, we are imposing a safeguard cap of RPI-RPI on each relevant AI service in the WECLA. We consider a control based on a safeguard cap is the most appropriate way of addressing our concerns for the AI services in the WECLA. This is because it would provide a sufficient protection against excessive pricing, while also giving appropriate incentives for the further development of competition and innovation in light of the economic characteristics of this market.

The LLCC Consultation proposals

- 21.6 In the LLCC Consultation, we set out the options for controlling charges for AI services in the WECLA. A full discussion of the relevant considerations and our

¹⁷⁴⁶ See Section 7 of this Statement.

¹⁷⁴⁷ See Section 12 of this Statement.

¹⁷⁴⁸ See Figure 12.1 of this Statement.

assessment of the options is set out in paragraphs 8.5 to 8.46 of the LLCC Consultation.

- 21.7 We identified two options for controlling charges of the AI services in the WECLA, which we discussed in some detail. They were:
- *Option 1 – Full charge control:* under this option, we would apply a full RPI-X type control for relevant services such that the X is set to bring charges into line with the forecast level of costs (including a return on capital). This option included considerations of whether to make such services subject to an overall AI basket control, possibly together with any sub-caps applied to services within the AI basket.
 - *Option 2 – Safeguard cap:* under this proposal, we would apply a safeguard cap so that BT could not increase charges in nominal terms (i.e. safe-guard cap of RPI-RPI applied to each and every charge).
- 21.8 As set out in Section 2 of the LLCC Consultation, in proposing charge controls, we sought to balance a number of regulatory objectives. These included, among other things: preventing BT from setting excessive charges; promoting efficient and sustainable competition in the delivery of leased line services; and encouraging investment and innovation.¹⁷⁴⁹ The weight that we applied to different regulatory objectives in setting a charge varied depending on the particular circumstances and services we are dealing with and the likely concerns arising from the market analysis we have carried out.
- 21.9 We considered that the prospects for competition in relation to the AI services in the WECLA were better than in other markets. In our view, therefore, in choosing one of the above-mentioned options, we should have particular regard to the desirability of promoting competition in this market in a way that is most likely to provide other operators with appropriate incentives to develop their own networks, thus encouraging investment and innovation.
- 21.10 We noted that Option 1 (full RPI-X type control) would offer greatest protection against the risk of excessive pricing. Typically, such a charge control would require BT to reduce the price for AI services in the WECLA to cost, including a ROCE, by the end of the charge control period.
- 21.11 We noted that there was a potential risk, however, that allowing CPs to access BT's network at cost, could dampen other operators' incentives to invest in alternative infrastructure. Clearly, it should not be an objective of a charge control to keep a firm's charges artificially high, as this would not provide the right incentives to BT's competitors for efficient entry or investment in alternative infrastructure. On the other hand, it may be that competitors could face higher costs than BT in the short run, but might bring greater dynamic benefits to consumers in the long run. Therefore, if we were to apply an RPI-X% charge control, this could ultimately reduce the benefits to consumers in the long-run associated with greater competition, as further competitive entry could bring innovation and investment and so constrain BT's prices.
- 21.12 We therefore considered that this option would not be appropriate. While option 1 would be likely to address the risk of excessive pricing, it may not be effective at achieving our other regulatory objectives particularly with regard to encouraging other operators to invest, innovate and compete with BT.

¹⁷⁴⁹ See paragraph 2.45 of the LLCC Consultation.

- 21.13 On the other hand, a safeguard cap, based on constant prices, would recognise that the market for AI services in the WECLA is prospectively more competitive. This was because, unlike a full charge control (i.e. option 1), a safeguard cap would not require BT to bring its charges down to cost for AI services in the WECLA. If BT continued to charge up to the safeguard cap, this could provide a greater potential for profitable investment in competing infrastructure. Therefore, we considered that option 2 had the potential of providing CPs with greater incentives to develop their own networks.
- 21.14 We also considered that Option 2 also addressed the relevant competition problems we identified as the safeguard cap would act as an overall ceiling, thereby preventing BT from increasing prices.¹⁷⁵⁰ However, for the safeguard cap to be effective to achieve that aim, we considered it necessary that the cap applies to each service charge set for AI service in the WECLA. We noted that an alternative might have been a single safeguard cap covering the aggregate of AI services in the WECLA (such that the average price of all AI services cannot increase either in real or nominal terms). However, the number of services covered by a single safeguard cap would be very wide. While we considered that the WECLA was prospectively competitive, the emergence of competition may not be entirely uniform. The wide number of services and the variability in competitive conditions may have allowed BT to concentrate price increases on less competitive services or to price in a way that favoured its downstream retail arm. We considered that a sub-cap on each charge protected customers of services which may face less competition and therefore we considered that a safeguard cap applied to each charge provided the protection needed.
- 21.15 The next issue we considered was the particular level at which it would be appropriate to set the safeguard cap. Given the general trend for increased volumes of Ethernet services resulting in expected lower unit costs, we proposed that a nominal terms safeguard cap (RPI-RPI) rather than a real terms cap (RPI-0%) would be appropriate. We noted that, in applying a safeguard cap, our assessment that none of BT's starting charges for AI services were above the relevant DSAC threshold (see Annex 5 of the LLCC Consultation).¹⁷⁵¹
- 21.16 We considered that a safeguard cap in the form of RPI-RPI on each and every charge for AI services in the WECLA is likely to be more transparent, practicable and simple to monitor. In particular, both BT and CPs would have certainty around the maximum charges permitted under such a cap.
- 21.17 We also noted that in addition to the safeguard cap, BT would still be subject to other SMP obligations such as non-discrimination and the requirement to provide services on an equivalence of input basis (as proposed in the June BCMR Consultation). We considered that these remedies in combination with a safeguard cap would provide a proportionate set of remedies given the potential of some prospective competition for relevant AI services in the WECLA.
- 21.18 In light of our assessment above, we proposed that a safeguard cap of RPI-RPI should be imposed on BT with regard to AI services in the WECLA, i.e. we favour option 2 above. In particular, this proposal meant that BT would be precluded from increasing the charge of any AI service in the WECLA in nominal terms (i.e. safeguard cap of RPI-RPI would be applied to each charge). We noted that, in proposing this safeguard cap, we have also assessed that each of BT's starting

¹⁷⁵⁰ See paragraphs 11.161 to 11.171 of the June BCMR Consultation.

¹⁷⁵¹ See paragraph A5.164 of the LLCC Consultation.

charges are within the relevant DSAC/DLRIC thresholds at the start of the charge control.¹⁷⁵²

- 21.19 A cost orientation obligation on BT would require relevant charges associated with AI services in the WECLA to be reasonably derived from the costs of provision (where costs included in the charges are based on an appropriate mark-up over long-run incremental costs).¹⁷⁵³
- 21.20 We proposed not to impose a cost orientation obligation on BT for AI services in the WECLA. We considered that the competition problems we are here seeking to address with regard to pricing – i.e. excessive pricing – can be addressed by the safeguard cap and, consequently, we considered that an additional cost orientation obligation would be unnecessary and disproportionate.
- 21.21 We considered that the proposed safeguard cap gives a greater degree of certainty to stakeholders than cost orientation. Under the proposed safeguard cap, BT's customers and competitors know that prices will not increase in nominal terms. This provides stakeholders with certainty over the limits of any change in charges. We considered that cost orientation gives stakeholders relatively less certainty, as the levels of DSACs and DLRICs are known only with a lag to BT's customers and competitors.

Consultation responses

- 21.22 CWW, Virgin, Level 3 and [X] supported our proposal to impose a safeguard cap of RPI-RPI on AI services in the WECLA.
- 21.23 While BT and TalkTalk agreed in principle with the proposal for lighter controls in the WECLA, they both disagreed with the level proposed for the safeguard cap.
- 21.24 BT considered that the proposed safeguard cap is overly restrictive and does not allow the flexibility required for efficient pricing.¹⁷⁵⁴ BT argued that the range between the RPI-X control and the safeguard cap should be broad enough to allow flexibility to support efficient pricing. On the basis that the range in the last control was 12 points BT is looking for a range of at least 12 points again, and for some flexibility to increase prices. BT proposed setting the level of the safeguard cap at RPI-0%. In addition, BT requested that if Ofcom does not agree that the cap should be RPI-0% on all items, then it should apply to legacy products at the very least so as to allow BT to encourage migration using pricing incentives.
- 21.25 Conversely, TalkTalk argued that the level of the safeguard cap will be too lax.¹⁷⁵⁵ TalkTalk considered that unit costs in the WECLA are lower than the rest of the country but considered that prices are generally the same as the rest of the country. On this basis, they deduced that profits on the WECLA AI services are currently higher than non-WECLA AI services. Yet under the proposed charge controls in the

¹⁷⁵² In absence of the WECLA specific DSAC and DLRICs information, we assessed the level of starting charges based on national data. We took into account the assumed geographic unit cost differences between the WECLA and outside the WECLA as set out in Annex 5 of the LLCC Consultation.

¹⁷⁵³ For example, in the 2007/8 BCMR, BT was required to ensure that each and every charge was set on a cost-oriented basis, where the costs included in the charges are: the forward-looking long run incremental costs incurred by the regulated firm to provide the service to which the charge refers; an appropriate mark-up to allow the recovery of common costs; and a reasonable return on the capital employed.

¹⁷⁵⁴ See BT non-confidential response to the LLCC Consultation, page 32.

¹⁷⁵⁵ See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 3.38-3.41

WECLA AI service prices will fall at 0% per year whereas non-WECLA AI services will fall at 9% a year. The proposed charge controls would therefore tend to allow the difference in profits to increase. TalkTalk suggested an RPI-6% price cap for AI services in the WECLA.

- 21.26 Exponential-e disagreed with our proposal to impose a safeguard cap of RPI-RPI on BT's AI services in the WECLA as this would create a substantial differential as compared with the control of RPI-12% outside the WECLA area.¹⁷⁵⁶ Exponential-e also criticised Ofcom's analysis of the competitive pressures on BT in the WECLA area. It believed that BT had been able to maintain its pricing in London by the very nature of its SMP. We discuss this point in more detail in Section 7 of this Statement.

Our response and conclusions

- 21.27 We have considered the points made in response to the LLCC Consultation.
- 21.28 We are not persuaded by BT's arguments that we should set a looser safeguard cap of RPI-0% rather than RPI-RPI. This is because we do not agree that increases in nominal prices will be necessary to promote efficient migration from legacy AI services to newer, lower cost, services.
- 21.29 In the LLCC Consultation, we explained that the trend increase in the volumes of AI services in general meant that we expected unit costs to fall in real terms. We have found no new evidence that would lead us to change our view on this point. An RPI-0% cap could also mean that customers who continued to use legacy services would be much worse off than they would have been if new technology had not been developed.
- 21.30 It also appears to us that BT may have understated the degree of flexibility to vary relative prices which it will have. BT says that the differential between the main AI basket control (the proposed level of which was RPI-12%) and the safeguard cap should be at least 12 points, and that this implies an RPI-0% safeguard control. However, this differential does not appear to be very relevant to prices in the WECLA in any case, since the main RPI-12% control does not apply there. There would therefore be a risk that setting the safeguard cap in the WECLA at RPI-0% instead of RPI-RPI would simply mean that some customers would face higher charges than they would otherwise have done. This is because there would be no requirement for BT to offset the looser safeguard cap with larger reductions in other charges in the WECLA, since there is no control on average AISBO charges in the WECLA.
- 21.31 Even if the originally proposed RPI-12% basket control were also to apply in the WECLA, BT would have the freedom to reduce prices of new services by more than 12%. Indeed, if a safeguard cap were set at RPI-0% within an overall basket of RPI-12%, then it must be clear that, if the safeguard cap is binding on some prices within the basket, then other prices must be reduced by more than 12% in order to comply with the constraint on basket average prices, and possibly by very significantly more depending on the weights of the various services in the basket. In other words, the available differential which could be used to encourage migration could then be much more than the 12% BT suggests.
- 21.32 Both the TalkTalk and Exponential-e responses seem to reflect a view that the safeguard cap is likely to be the binding constraint on prices in the WECLA. This however is not the intention in setting a safeguard cap. The level of the safeguard

¹⁷⁵⁶ See Exponential-e non-confidential response to the LLCC Consultation, pages 11-12.

cap is intended to allow developing competition to become the main source of downward pressure on prices. TalkTalk propose a cap of RPI-6% which, in its view, “will still leave ample room for competition to develop”.

- 21.33 In principle, when setting a cap of the kind proposed by TalkTalk, an explicit assessment of the costs and benefits of greater competition could be carried out. Quantification of these costs and benefits, even in an approximate way, is very difficult and it is understandable that TalkTalk has not included such calculations in its response. Qualitatively, the benefits of promoting entry could include cost reductions due to the greater efficiency of the entrant, lower prices due to competitive pressure on profits and costs, including BT’s, and increased innovation. In addition, competition which permits the partial or complete withdrawal of regulation will allow the administrative costs of regulation to be saved and permit more flexible prices to be offered which can also benefit users. On the other hand, there may be costs, at least in the short term, due to losses of economies of scale and duplication of investment. However, in the WECLA, significant investment in competing networks has already taken place, reducing the need to incur additional costs in future.
- 21.34 The basis for TalkTalk’s RPI-6% proposal is not clear, but we note that it is midway between BT’s proposal for RPI-0% and our proposed control outside the WECLA of RPI-12%. Compared to an RPI-RPI safeguard cap, TalkTalk thus appears to put somewhat more weight on price reductions and less weight on promoting competition. However, the extent of the difference depends on the rate of inflation. In some circumstances, this difference could be relatively small, but if inflation were to be low, TalkTalk’s proposal could give significantly weaker incentives for entry whilst at the same time allowing prices to remain above projected cost levels. We consider that the proposal for an RPI- RPI cap strikes a better balance.
- 21.35 Exponential-e is concerned that BT’s SMP will allow it to raise prices. We agree that BT has SMP, and hence that the AISBO market in the WECLA is not yet effectively competitive, but this does not mean that a price control set to bring prices into line with costs would be necessary or proportionate. We regard the low bandwidth AISBO market in the WECLA as “prospectively competitive”, the term “prospectively competitive” indicating that the market is not yet effectively competitive, but that it is expected to become so. The low bandwidth AISBO market in the WECLA is not yet effectively competitive because market shares and other indicators suggest that BT still has SMP. However, these are at a level which suggests that only a relatively small expansion by OCPs would make the market effectively competitive, and this could be expected to occur within a reasonable time.
- 21.36 The decision to set a safeguard cap therefore reflects our view about the potential for competition to develop in future in this market, rather than the situation now. Even if, as Exponential-e points out, the general economic climate is not currently favourable, the AISBO market is expected to grow over the period of the control.¹⁷⁵⁷ Moreover, BT’s rivals have already invested in a substantial amount of infrastructure in the WECLA which can be used to support the further development of competition in AISBO with relatively limited need for additional capital.
- 21.37 For all the reasons set out above we consider it appropriate to impose a safeguard cap of RPI-RPI on each relevant AI service in the WECLA. This is because it would provide a sufficient protection against excessive pricing, while also giving appropriate incentives for the further development of competition and innovation in light of the economic characteristics of this market. As explained in Section 9, we do not

¹⁷⁵⁷ See Exponential-e non-confidential response to the LLCC Consultation, pages 11.

consider it is necessary to have an additional cost orientation obligation to address the risk of excessive pricing for AI services in the WECLA.

The safeguard cap meets the relevant tests under the Act

Powers under sections 87 and 88 of the Act

21.38 We are applying a charge control in the form of a safeguard cap of RPI-RPI to BT as an SMP condition under section 87(9) of the Act with regard to AI services in the WECLA.¹⁷⁵⁸

21.39 The SMP condition is set out at Annex 7 of this Statement.

21.40 Section 88 of the Act states that Ofcom should not set an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse effects arising from price distortion and it also appears that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on the end-users of the public electronic communications services.

21.41 In setting charge controls, section 88 also requires that we must take account of the extent of the investment in the matters to which the condition relates of the person to whom the condition it to apply – i.e. BT.

There is a relevant risk of adverse effects arising from price distortion

21.42 As set out in Section 12, and explained further above in this Section, we consider the relevant risk of adverse effects arising from price distortion is the risk that BT might so fix and maintain its prices for AI services in the WECLA at an excessively high level.

Promoting efficiency

21.43 We consider that the setting of the SMP condition is appropriate for the purpose of promoting efficiency. The above approach would ensure that BT's prices are not significantly in excess of its costs of provision of AI services in the WECLA. The safeguard cap also ensures that prices do not become excessive if competition fails to develop as expected.

21.44 Furthermore, in implementing a safeguard cap we have taken into account competition and investment incentives, which we consider would provide dynamic efficiency benefits to consumers (as discussed in paragraphs above).

¹⁷⁵⁸ SMP condition 5.2 at Annex 7 of this Statement.

Promoting sustainable competition and conferring the greatest possible benefits on end-users

- 21.45 We also consider that the setting of the SMP condition is appropriate to promote sustainable competition and to confer the greatest possible benefits on end-users of public electronic communications services.
- 21.46 A safeguard-cap would help promote sustainable competition and ensure benefits to consumers. In implementing a safeguard cap, we have taken into account the possible impact of a full charge control as set out in paragraph 21.9 – 21.12. As the safeguard cap would apply to each and every charge, it would also protect customers of AI services in the WECLA which may face less competition (see for example discussion in paragraphs 21.12-21.13). The control would enable greater choice of service for end users in terms of choice, price, quality of service and value for money.

Investment matters

- 21.47 In setting the safeguard cap of RPI-RPI we have also taken into account the need to ensure BT has the appropriate incentives to invest and innovate.
- 21.48 The requirement under the safeguard cap not to increase prices for AI services in the WECLA in nominal terms is consistent with the objective of providing BT with incentives to invest and innovate. We have checked that BT's starting charges for AI services in the WECLA are consistent with cost recovery (including a reasonable rate of return). The expected general trend for AI services in the WECLA is for continued growth resulting in expected lower unit costs. Therefore, if the safeguard cap were binding, it would provide a fairly conservative path for required price reductions in real terms.¹⁷⁵⁹ The safeguard cap would also be fixed for the duration of the charge control period, so this would provide BT with incentives to invest and innovate to bring about additional efficiency savings.

We have considered the tests under section 47 of the Act

- 21.49 Any SMP condition must also satisfy the tests set out in section 47 of the Act, namely that it must be:
- objectively justifiable in relation to the networks, services or facilities to which it relates;
 - not such as to discriminate unduly against particular persons or a particular description of persons;
 - proportionate as to what it is intended to achieve; and
 - in relation to what it is intended to achieve, transparent.
- 21.50 We consider these tests are satisfied.

¹⁷⁵⁹ Given forecast positive price inflation over the charge control period, the RPI-RPI price cap would result in price reductions in real terms. If RPI were to exceed 5%, we propose that the price cap instead reverts to RPI-5%.

The proposed SMP condition is objectively justifiable

21.51 We consider the SMP condition to be objectively justifiable. In Section 7, we set out our finding that BT has SMP for AI services in the WECLA. On this basis, we considered it necessary to impose some form of charge control on BT's services. Nevertheless, given the prospects for competition are relatively better for AI services in the WECLA (relative to AI services in the rest of the UK (excluding Hull)), we have taken this into account by applying a safeguard cap.

The proposed SMP condition does not discriminate unduly

21.52 The charge controls will not discriminate unduly against a particular person or particular persons because any CP (including BT itself) can access the services based on charges set up to the maximum permitted by the safeguard cap. The charges are set to ensure a fair return and charges level for all customer groups and the safeguard caps apply to each and every AI service in the WECLA. In any event, Ofcom considers that the SMP condition relating the AI services in the WECLA do not discriminate unduly against BT as the controls address BT's market position, including its ability and incentive to set excessive charges for these services.

The proposed SMP condition is proportionate

21.53 We consider that the SMP condition is proportionate as it is likely to address concerns over BT pricing excessively, but it also takes into account the better prospects for competition for AI services in the WECLA relative to other AI and TI services where we have applied a full RPI-X% control.

21.54 For the reasons set out above, therefore, we consider the SMP condition is:

- appropriate to achieve the aim of addressing BT's ability and incentive to charge excessive prices for AI services in the WECLA;
- necessary in that it does not, in our view, impose controls on the prices BT may charge for AI services in the WECLA that go beyond what is required to achieve the aim of addressing BT's ability and incentive to charge excessive prices for these services;
- in our view, the least onerous of the options set out above whilst addressing BT's ability and incentive to charge excessive prices for AI services in the WECLA; and
- such that it does not, in our view, produce adverse effects which are disproportionate to the aim pursued which is to address BT's ability and incentive to charge excessive prices for AI services in the WECLA.

The proposed SMP condition is transparent

21.55 Finally, for reasons discussed above, we consider the SMP condition is transparent. Its aims and effect are clear and it has been drafted so as to secure maximum transparency. The proposed text of the SMP condition is published with this Statement.. Its intended operation is also aided by our explanation. We have also set out the likely impact of the safeguard cap of RPI-RPI on charges for the duration of the control.

We have considered sections 3 and 4 of the Act

- 21.56 We also consider that the safeguard cap of RPI-RPI furthers our duties under sections 3 and 4 of the Act.
- 21.57 For the reasons set out above, we consider that the safeguard cap of RPI-RPI will promote competition in the relevant market¹⁷⁶⁰ and will therefore further the interests of citizens in relation to communication matters and the interests of consumers in the downstream retail markets.
- 21.58 We consider the safeguard cap will, together with our other charge controls that we are implementing, secure the availability throughout the United Kingdom of a wide range of electronic communications services.
- 21.59 We have also had regard in implementing the safeguard cap to, in particular:
- the desirability of promoting competition in the relevant market;
 - the desirability of encouraging investment and innovation in the relevant market; and
 - the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.
- 21.60 Finally, in performing our duty to further the interests of consumers, we have also had regard in applying the safeguard cap of RPI-RPI, in particular, to the interests of those consumers in respect of choice, price, quality of service and value for money.

¹⁷⁶⁰ Wholesale market for low bandwidth alternative interface symmetric broadband origination in the WECLA, at bandwidths up to and including 1Gbit/s.

Section 22

Controls for accommodation and Excess Construction Charges

Introduction

- 22.1 In order to use the regulated wholesale services that BT provides in the leased lines markets, CPs must also purchase certain accommodation services or, on occasion, request construction work. Accommodation services such as space and power in BT's local exchanges are an important technical element of the regulated services. Similarly, ECCs pay for extensions to the access network that are specific to an individual customer's needs. As both types of services are an essential part of the overall provision, we consider it necessary to subject them to price controls.¹⁷⁶¹
- 22.2 In this Section we set out our conclusions on the charge control framework for accommodation services and ECCs.¹⁷⁶² In particular, we discuss:
- issues around the accounting treatment of ECCs and their level;
 - regulation of ECCs going forward; and
 - our approach to regulating accommodation services.
- 22.3 We discuss our decisions to include a fair and reasonable pricing obligation, but not to impose an additional cost orientation obligation in relation to these services in Section 9.

Summary of our key decisions

- 22.4 In response to the BCMR CFI, several CPs raised concerns regarding ECCs. We have reviewed the accounting treatment of ECCs and the level of ECCs. As a result of our analysis, we are implementing a reduction of ECC through a starting charge adjustment of approximately 28%.
- 22.5 We are imposing a separate control on ECCs. ECCs are based on underlying trends in input costs within the construction industry. We consider that it is more appropriate to use the General Building Cost Index (GBCI), which is a national index that measures the costs of construction work including materials and labour. In our view, the GBCI provides a reasonable proxy for cost movement in ECCs. We consider that the use of the GBCI in this case does not raise the issue of circularity that can be caused by sector-specific indices.¹⁷⁶³
- 22.6 We are imposing a cap of GBCI-0% on each ECC used for leased line services. These services are listed within SMP Condition 5.6 in Annex 7 of this document. In the WLR LLU Charge Control (WLR LLU CC), Ofcom maintained charge controls on accommodation services that CPs require to locate their equipment at BT's local

¹⁷⁶¹ See sections 11, 12, 13 and 14 of this Statement.

¹⁷⁶² For the avoidance of doubt, where we discuss ECCs, we refer to ECCs specific to leased line services.

¹⁷⁶³ See discussion in Section 18 of this Statement.

exchanges.¹⁷⁶⁴ Those products have been included in the Co-mingling ancillary services basket.¹⁷⁶⁵ Since the Co-mingling ancillary services basket includes accommodation services which are used by CPs for leased line products as well as LLU, our view is that they should be subject to the same regulation. We therefore require Openreach to price accommodation products used for leased lines purposes the same as for LLU Co-mingling products.

- 22.7 With regard to the Access Locate Administration Fee¹⁷⁶⁶ and Cablelink, which are mainly leased line specific accommodation products, we have concluded that these products should be subject to a price cap of RPI-0%. These services are listed within SMP Condition 5.5 in Annex 7 of this document.

Excess Construction Charges

Background

- 22.8 Openreach levies ECCs whenever customer-specific network construction work is required in association with an order.¹⁷⁶⁷ ECCs cover activities such as a site survey, the installation of new duct, new blown fibre and drilling through walls.¹⁷⁶⁸ Although most ECCs are charged by Openreach, BT Wholesale also levies some ECCs for the provision of new TISBO circuits. These are mostly a pass-through of Openreach charges.
- 22.9 ECCs are charged in addition to normal connection charges and apply whether the service requested is fibre or copper. The ECCs paid by CPs recover the full costs incurred by BT, plus an additional mark-up over costs.

Accounting treatment of ECCs

The LLCC Consultation proposals

- 22.10 In the LLCC Consultation we analysed the accounting treatment of ECCs. In particular, we explained that BT capitalises ECCs expenditure and adds this to its asset base. This approach allowed BT to earn a return on capital on this capitalised expenditure in a situation where the full costs of ECCs are recovered upfront through charges to CPs.
- 22.11 In our view, there was a risk that BT recovers the costs of excess construction upfront, and in addition recovers these from rental charges over time. Although BT made an adjustment in the accounts to remove depreciation related to ECCs from

¹⁷⁶⁴ See the WLR LLU CC Statement http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc/statement/LLU_WLR_CC_statement.pdf

¹⁷⁶⁵ For a definition of Co-mingling services see page 215 of the Wholesale Local Access market review Statement; http://stakeholders.ofcom.org.uk/binaries/consultations/wla/statement/WLA_statement.pdf

¹⁷⁶⁶ This product has been developed to enable LLU CPs to use their existing POPs to locate switching equipment for aggregating their Openreach Ethernet services.

¹⁷⁶⁷ Only those elements that are unique to a single end-user site are chargeable as ECCs. Construction work that forms part of Openreach's common network (i.e. can serve more than one end-user site) falls outside the scope of ECCs. ECCs are also incurred if the customer requests a method of delivery which is not Openreach's first choice or if an additional circuit is required for resilience purposes.

¹⁷⁶⁸ Details of ECCs are available at: <http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=ZdqG%2Fzv%2FjSuBEEITnogh5uNOEWQ2%2FKws5WBAVcIlchoIMnGHsqdC0vzO163bJmh34D91D7M0q8u%2F%0AIIsgtIFAKw%3D%3D>.

the costs of other services, there was no equivalent adjustment for the Mean Capital Employed (MCE) attributable to ECCs, which remained allocated to services. In order to avoid this double-recovery, we proposed to remove capitalised ECCs from the asset base.

- 22.12 To estimate the amount of MCE applicable to ECCs, we calculated the proportion of depreciation attributable to these services.¹⁷⁶⁹ On the basis of our analysis, we proposed to adjust our base year costs to remove £28m of AI services MCE and £39m of low bandwidth TI services MCE.¹⁷⁷⁰

Consultation responses

- 22.13 Telefonica supported our proposals to address the double recovery of ECCs by adjusting the base year costs to remove capitalised ECCs from BT's asset base.¹⁷⁷¹
- 22.14 TalkTalk also agreed with our adjustment. It argued, however, that BT would still benefit through excessive rental prices in 2013/14 and 2014/15 (due to the way the glidepath operates). It was of the view that there needs to be a separate (and additional) adjustment to reflect the double recovery as:
- the one-off reduction in ECC prices does not address or mitigate the over-recovery; and
 - any adjustment for double recovery should correctly come through a reduction in leased line rental charges since these are the charges that have been excessive.¹⁷⁷²
- 22.15 In addition, TalkTalk considered that ECCs should be allocated some common costs and that the FAC allocation to other services should be reduced.¹⁷⁷³
- 22.16 Conversely, BT disagreed with our proposals with regard to the removal of ECCs from the MCE.¹⁷⁷⁴ It argued that we gave “no consideration to the incentives arising from the removal of working assets from BT's regulated asset base. BT considered that it would be disproportionate to require Openreach to serve all reasonable customer requests without allowing it to recover reasonable returns that reward its risks and cover all its costs. It was concerned that by removing ECCs from the working asset base, its incentives to build and manage such a portfolio of assets efficiently may be hampered.¹⁷⁷⁵
- 22.17 BT said that serving a customer requiring dedicated assets comes with risks as the assets could become stranded if the customer were to cease its service. It argued that, by taking such assets out of the regulatory asset base, this led to the perverse

¹⁷⁶⁹ Based on BT's reported numbers, we have calculated the percentage of all depreciation attributable to ECCs, separately for AI and TI services. We then applied this percentage to the total MCE for each service on the assumption that all assets were depreciated on the same basis. The resulting MCE number has been split across all services in proportion to MCE reported for those services.

¹⁷⁷⁰ For Multiple Interface services, BT has not reported any ECCs for those services.

¹⁷⁷¹ See Telefonica non-confidential response to the LLCC Consultation, page 41.

¹⁷⁷² See TalkTalk confidential “TTG BCMR LLCC - additional thoughts” page 14.

¹⁷⁷³ See TalkTalk non-confidential response to the LLCC Consultation, page 47, 48.

¹⁷⁷⁴ See BT non-confidential response to the LLCC Consultation, page 29.

¹⁷⁷⁵ See BT non-confidential response to the LLCC Consultation, page 29.

short-term incentive of repudiating or disposing of the assets as soon as practicable might arise, especially if no immediate future usage of the asset could be envisaged. BT argued that network assets of this nature should be included in the general working asset base, even if not currently in use, given option values for future use.¹⁷⁷⁶

Our response and conclusions

- 22.18 As set out in the LLCC Consultation, we consider it inappropriate to allow BT to capitalise ECCs expenditure and add this to its asset base.
- 22.19 In response to BT's argument that by removing ECCs from the working asset base the incentives to build and manage such a portfolio of assets efficiently may be hampered, we note that the full cost of extending BT's network is covered by the CPs upfront. BT acquires the ownership of the assets created and also receives further benefits from ECCs. In particular, once the customer is connected to BT's network, BT receives connection and rental charges that CPs pay for serving this customer. Given that the full costs of ECCs are recovered upfront through charges to CPs, capitalising those assets would mean that BT additionally recovers ECC costs from other charges over time. We remain of the view that is appropriate to address the double recovery of ECCs by adjusting the base year costs to remove capitalised ECCs from BT's asset base.
- 22.20 Since the LLCC Consultation, we have requested the data necessary to undertake our financial analysis and cost modelling based on the 2011/12 RFS in order to rebase our model. As part of this exercise we also asked BT to confirm its accounting treatment of ECCs.
- 22.21 In comparison to the accounting treatment of ECCs in 2010/11, BT has now made an adjustment in its cost allocation system in 2011/12 to remove an estimate of MCE and depreciation associated with ECCs from other services, across TI and Ethernet. BT determined the MCE by estimating ECC capital expenditure and depreciation for the last 10 years. The resulting adjustment is then split across services in proportion to service volumes. The total adjustment is [X] of MCE and £3m of depreciation for TI and [X] of MCE and £5m of depreciation for AI.¹⁷⁷⁷ These adjustments are larger than those we proposed in the LLCC Consultation.
- 22.22 We consider that the adjustments made by BT are sufficient to adjust base year costs to remove MCE from the Ethernet and TI services. We therefore conclude that no further base year adjustment is necessary.
- 22.23 We have considered TalkTalk's points carefully and, in particular, whether any further adjustment beyond those proposed in the LLCC Consultation would be appropriate.
- 22.24 We recognise that if under the previous charge controls a similar adjustment to the accounting treatment of ECCs had been made, in theory BT may have needed to make slightly steeper reductions to charges within the AI and TI baskets. It is because the LLCC 2009 Statement did not mandate a change to the accounting treatment of ECCs that the asset base included capitalised ECCs. This made it possible for BT to recover these costs through rental or other charges within the main services baskets.

¹⁷⁷⁶ See BT non-confidential response to the LLCC Consultation, page 29.

¹⁷⁷⁷ Openreach and BT Wholesale response to S135 Notice of 14 February 2013. [X]

- 22.25 We note that each charge control involves determining all costs relevant to providing charge controlled services. In order to establish the relevant cost base, we typically have to decide whether it is appropriate to exclude or include various types of costs. We also review our approach on those issues when setting new charge controls. More specifically, in the current review, we have assessed our approach to a number of factors that impact the calculation of BT's costs in providing leased line services, in some cases adopting a different approach to that taken in the LLCC 2009. Had these approaches been taken in the LLCC 2009, different overall reductions in charges may have been applied in that control. Such changes in regulatory approach between charge controls are not likely to be biased in favour of one direction or another. We do not consider it proportionate to make a starting charge in this charge control to correct for a different regulatory approach in the previous charge control.
- 22.26 In considering TalkTalk's point we have also had regard to our general preference for glide paths. The reasons for this preference and the circumstances when we would consider making starting charge adjustments are set out in Section 18. We consider that our current adjustments together with a glide path sufficiently addresses issues we identified in the current review. More specifically:
- the one-off reductions to ECCs will bring them in to line with the underlying costs and prevent over-recovery of costs associated with the provision of ECCs; and
 - the MCE adjustment to the cost base addresses double-recovery of ECC costs from the TI and Ethernet services and the glide path we set for TI and Ethernet services basket will bring BT's expected revenues in line with forecast costs by the end of the charge control period.
- 22.27 Although the present case is not one which falls into the circumstances we set out in Section 18 describing when starting charges may be appropriate, we have considered whether the particular circumstances relating to the change in approach to ECCs justify us departing from this general approach.
- 22.28 Taking account of all the factors set out above, we do not consider in this particular case that it is appropriate to have a further adjustment to address the change of accounting treatment of ECCs.
- 22.29 As to the point raised by TalkTalk, we note that overheads are allocated to ECCs. In terms of TalkTalk's proposal to reduce the FAC allocation to other services, we consider that BT is better placed to make the appropriate decisions on allocations to recover common costs efficiently.

The level of ECCs

The LLCC Consultation proposals

- 22.30 In the LLCC Consultation we set out our analysis of the cost of ECC provision. In order to estimate the costs of ECC provision we examined information on the costs of ECC supply for a sample of Ethernet projects provided by Openreach.¹⁷⁷⁸ For this sample of projects, Openreach compared the ECC price list with its own contractors' charges for the same type of work. Openreach also explained that it faces other

¹⁷⁷⁸ This included data on the level of ECCs incurred for all projects between 24 and 30 September 2011. Openreach response to S135 Notice of 25 May 2012. [X]

costs in ECC provision in addition to the contractor costs and it estimated that overhead costs added [§] to ECC work.¹⁷⁷⁹

- 22.31 Our analysis indicated that, across all charges in the sample, Openreach's weighted average margin was 30%.¹⁷⁸⁰ This margin covered Openreach's incremental costs of provision including a contribution to overheads (common costs).
- 22.32 We considered whether this margin was an appropriate return on capital employed and proposed to reduce the level of ECCs. In considering the appropriate level, we took into account:
- the level of Openreach capital employed in the provision of ECCs; and
 - the impact on BT and customers of different approaches.
- 22.33 The data we received suggested that Openreach deploys minimal capital expenditure in the provision of ECCs.¹⁷⁸¹ In particular, we said that the capital employed may relate to working capital used by Openreach to fund any gap in payment between when Openreach pays its contractors and when CPs pay Openreach. On that basis, we considered that no margin above the recovery of incremental costs and a contribution to overheads is justified.
- 22.34 We also noted the level of ECCs has significant impact on customers and competition as it can represent a significant increase in the cost of a circuit.
- 22.35 Given the above, we considered that ECCs should be set on the basis of forward-looking incremental costs and an appropriate mark-up for the recovery of common costs. As noted in the LLCC Consultation, to the extent that BT employs any capital in the provision of ECCs, then it should also be allowed an appropriate return on that capital. At the time of consultation we were not provided with any evidence of any significant capital employed by BT.
- 22.36 We proposed to implement the change to ECC prices through a starting charge adjustment. We did not consider that there were sufficiently strong reasons to justify a glide path. In the case of ECCs, the high returns did not result from efficiency by BT as they are based on a pass-through of BT's contractor costs plus a mark-up.
- 22.37 On the basis of the data received, we compared individual ECC charges with our estimate of costs for many of the individual charges. Where we estimated the costs for a specific charge, we proposed to apply a specific reduction to the Openreach price to bring it into line with our estimate of cost. For the remaining charges, we proposed to apply a blanket 30% reduction to the price. The start charges we proposed are set out in Figure 22.1 below.

¹⁷⁷⁹ [§].

¹⁷⁸⁰ This margin is a weighted average margin derived from the overall incidence of ECC charges.

¹⁷⁸¹ Openreach response to S135 Notice of 25 May 2012. [§]

Figure 22.1 Proposed start charges ex-VAT in the LLCC Consultation

	Proposed start charge £
Survey Fee	250
Drilling each external wall	235
Drilling each internal wall non concrete	45
Drilling each internal wall concrete	140
Cable installed into duct, buried or installed on poles including any jointing required per metre	4.30
Blown Fibre per metre	3.05
Blown fibre tubing in duct per metre	2.75
Internal cabling (including internal blown fibre tubing) per metre	5.00
New ductwork (including wayleave costs)	
- under soft surface per metre	20
- under foot way per metre	40
- under carriage way or roads per metre	80
Trunking & traywork within customer's curtilage per metre	28
New footway box small (surface area up to 0.5 sqm)	690
New footway box medium (surface area between 0.5 and 1sqm)	1,525
New footway box large (surface area greater than 1sqm)	2,630
Provision of a Small carriageway box (surface area up to 1sqm)	2,410
Provision of a medium carriageway box (surface area between 1 and 1.25 sqm)	3,000
Provision of a small carriageway box (surface area above 1.25 sqm)	3,375

*There are four items in the ECC price list (Provision of pole, Copper cable, Directly buried cable and Moleploughing cable or fibre in subduct) which are not included in our proposed start charge adjustments. These items are used only rarely for leased line purposes, and over 90% of their use comes from other markets. Of these items, only the provision of a pole features in our ECC sample, and then only in 1% of orders). We proposed, in the LLCC Consultation, also to exclude these items from the ECC basket.

Consultation responses

- 22.38 Of the nine stakeholders who responded to our consultation in relation to the level of ECCs, eight (CWW, Virgin , Colt, EE, MBNL, TalkTalk, Level 3, and Telefonica) welcomed Ofcom's proposals to make start charge adjustments.
- 22.39 CWW said that "[w]hen looking at the cost of a single circuit it is evident that ECC can increase the standard published price by a considerable margin, adding up to a third of additional costs. We are very pleased at the focus that Ofcom has given this matter and believe it will have a beneficial impact for customers and competition." It also agreed that a starting price reduction is better than a glide path and added that retaining "ECCs at the current level for longer than necessary would be detrimental to consumers".¹⁷⁸²

¹⁷⁸² See CWW non-confidential response to the LLCC Consultation, paragraph 9.48,15.24 and 15.25.

- 22.40 Virgin considered that “ECC charges significantly increase the cost of provision whilst allowing “connection” charges to remain apparently modest (and within their charge control)”.¹⁷⁸³
- 22.41 EE and MBNL, Colt and Level 3 also supported the proposed reduction to the level of ECCs. Colt told us that uncertainty as to whether they will be required and their level prevents CPs competing for business as aggressively as they otherwise might. Colt also suggested keeping ECCs under review.¹⁷⁸⁴
- 22.42 Level 3 noted an issue over “the historic excessive pricing of ECCs within BT”.¹⁷⁸⁵ TalkTalk also wanted Ofcom to explain why there was an over recovery, especially given that the RFS were audited and Ofcom has the ability to scrutinise them. In addition, it pointed out that we should consider whether there should be repayment of the overcharge (by means of, say, reducing the allowed cost base in 2015/16).¹⁷⁸⁶
- 22.43 BT disagreed with Ofcom's proposals with regard to the starting price adjustment to ECC charges. BT said that disallowing any margin and implementing the starting charge adjustments is disproportionate, and argued that Ofcom should use a glide path to the target price over time. It argued that this approach was not consistent with the position set out in Section 4 of the LLCC Consultation¹⁷⁸⁷, where Ofcom set out two circumstances where start price adjustments may be appropriate. In particular, BT argued that:
- the current charges have harmed allocative efficiency and that they do not distort competition as they have covered all costs related to ECCs and provided a reasonable return for ECC-specific risk factors;
 - ECCs have been subject to a charge control for the last three years, as ECCs have been part of the ancillaries basket with a price cap of RPI-0. In addition, in this and the previous market reviews, process improvements have been made by Openreach to improve transparency and certainty over ECCs; and
 - while ECCs can represent a significant price increase for an individual customer in the first year, these costs are only a small fraction of all charges paid by CPs to Openreach (e.g. ECCs account for less than [X] of Ethernet-related revenue for Openreach).¹⁷⁸⁸
- 22.44 BT argued that there is some working capital employed associated with the provision of ECCs on which Openreach should be allowed a margin. In particular, it stated that we underestimated the timescales involved in providing ECCs during which working capital is tied up. It estimated that on average it typically takes six months or longer between an ECC order being placed and ECCs to be paid by customers.¹⁷⁸⁹
- BT considered that Openreach adds value when supplying ECCs by, for example, arranging a tailored infrastructure provision to the customer or

¹⁷⁸³ See Virgin non-confidential response to the LLCC Consultation, page 27;

¹⁷⁸⁴ See Colt non-confidential response to the LLCC Consultation, page 1.

¹⁷⁸⁵ See Level 3 non-confidential response to the LLCC Consultation, page 21.

¹⁷⁸⁶ See TalkTalk non-confidential response to the LLCC Consultation, page 47.

¹⁷⁸⁷ As repeated in this Statement at Section 18.

¹⁷⁸⁸ See BT confidential response to the LLCC Consultation, page 30.

¹⁷⁸⁹ See BT non-confidential response to the LLCC Consultation, page 28.

negotiating with contractors on behalf of its customers if required, which is likely to generate some savings due to the volumes generated by Openreach. In BT's view, it would be normal to earn a margin for value-added services that is over and above a contribution to common costs, even where there is little or no capital used; and

- there is an opportunity cost involved in providing ECCs instead of other services that would earn a return.¹⁷⁹⁰

22.45 BT also argued, in opposing the removal of margin from ECCs, that Ofcom did not take into account some specific risks incurred in the provision of ECCs, namely:

- if, for example, ECCs are incurred in serving pioneering customers and driving out network footprint, there are specific risks associated with failing to achieve good capacity utilisation for these assets in the long-run (if other customers fail to come). BT therefore considered it reasonable to allow a return on these assets due to these risks, and "that an appropriate hurdle rate for ECC projects should be in excess of BT's cost of capital."¹⁷⁹¹
- other specific cost risks faced by Openreach in the provision of ECCs that it needs to cover through a margin over and above a contribution to common costs. BT said that orders for Ethernet circuits are cancelled slightly more frequently where ECCs are involved [X]. In some cases, it continued, Openreach has already incurred ECC-related costs that it cannot recover. BT estimated that for c.15% of all Ethernet orders a survey would have already been conducted, and for approximately 1-2% of all Ethernet orders Openreach has already incurred some costs at its own risk; and
- in some cases, the estimated costs for ECCs that are contractually agreed with the customer are below the actual costs in which case Openreach takes the full risk of actual costs exceeding planned costs.¹⁷⁹²

22.46 BT also argued that it is counter-intuitive to depress ECC prices as it is likely to discourage investment by competitors. Where ECCs are incurred, they typically signal that for these services, BT has a smaller than average cost advantage from its existing network over CPs (because BT also has to build out its network to serve the customer), and therefore on average faces greater competitive constraints than where ECCs are not incurred.¹⁷⁹³

Our response and conclusions

22.47 Following careful consideration of responses to the LLCC Consultation, we remain of the view that the level of ECC should be adjusted to reflect the underlying costs. We explained in the LLCC Consultation the circumstances that might warrant start charge adjustments. We expressed a general preference for glide paths as it approximates more closely to the workings of a competitive market in which excess profits are gradually eroded as rivals improve their efficiency. Therefore, our preferred approach has been to focus any starting charge adjustments only where

¹⁷⁹⁰ See BT non-confidential response to the LLCC Consultation, page 28.

¹⁷⁹¹ See BT non-confidential response to the LLCC Consultation, page 29.

¹⁷⁹² See BT non-confidential response to the LLCC Consultation, page 30.

¹⁷⁹³ See BT non-confidential response to the LLCC Consultation, page 30.

there are particular regulatory concerns that might outweigh the benefits of the glide path approach.

- 22.48 In the context of ECCs, it is useful to understand the circumstances under which we considered one-off reductions. Our analysis indicates that ECC charges remain too high when compared to the level of unit costs of providing a service. In case of ECCs, high returns do not result from innovation in new products and cash savings in new technologies to justify applying a glide path approach. Due to the importance of ECCs to the provision of standard Ethernet services we have sought ways in which BT could minimise the costs of providing these services.
- 22.49 In our view, the one-off reductions are consistent with allocative efficiency arguments for bringing prices into line with cost sooner. This ensures that all consumers who value a product at more than its cost are able to purchase it. We considered it important that the level of ECCs does not create a disincentive for CPs to connect the customer, as would be the case if Openreach continued to earn high margins on ECCs. Notably, ECCs constitute a significant up-front cost for a new circuit. This is reflected in the higher rate of cancellations for orders with ECCs. If the ECCs are reduced to cost, then we would expect fewer cancellations.
- 22.50 We therefore consider there are strong efficiency arguments for bringing the ECCs prices in line with costs sooner. It would not be appropriate to allow Openreach to benefit from a glide path as this would embed an over-recovery in the charge controls. In addition, this could distort decisions around extending a network in order to serve a customer ECCs significantly increase the cost of providing a circuit. We are concerned that CPs would be put at disadvantage because they do not have the option of looking for alternative suppliers or taking their business elsewhere.
- 22.51 In light of the efficiency arguments mentioned, we have concluded that the appropriate course is not to prefer a glide path approach in this case, but instead to bring charges into line with costs more quickly via the starting charge adjustments we have made.
- 22.52 As set out in the LLCC Consultation, in our view, BT should be allowed a return on the capital it employs. BT has provided us with evidence that there is some delay between the time when work on ECCs is performed and BT receives a payment. We therefore consider it reasonable to include within our estimate of ECC margin a return on working capital costs.
- 22.53 Openreach argued that given the time between when the work is undertaken and the time of payment, BT has ECC-related resources (e.g. direct labour, overheads, stores, advance contractor payments) tied up on average for [X].¹⁷⁹⁴ In our view, this delay would only apply to some types of ECC works, specifically survey work and roding/tubing that are typically carried out early in the work process. This work is required in order to give the customer an estimate for the ECC work. We have assumed that other ECC work such as actual construction work would be carried out shortly before invoicing the customer, and as such would be subject only to the delay involved in raising a bill and receiving payment.
- 22.54 Openreach argued that survey and roding/tubing work would be subject to a [X] delay in receiving payment. This consists of [X] delay due to the fact that such work is done very early on in the process of ECC build. BT also said that there is a delay

¹⁷⁹⁴ Openreach response to S135 Notice of 14 February 2013. [X]

of two months for billing and payment. The two months delay also applies for all other ECC work.¹⁷⁹⁵

22.55 BT recovers the costs of excess construction upfront. This is the same to how BT recovers its connection charges. We consider that billing and payment for ECC work should be consistent with payment terms for connections, allowing one and a half month delay.¹⁷⁹⁶ It does not seem reasonable that billing for ECCs takes half a month longer than for connection services. We therefore assumed a [X]¹⁷⁹⁷ delay in payment for survey and roding/tubing services and one a half month delay for other ECC work.

22.56 Based on data provided by Openreach, we have estimated that surveys and roding/tubing account for approximately [X] of ECCs revenues.¹⁷⁹⁸ We took [X] of ECC revenues for Ethernet from the 2011/12 RFS (£57m) and calculated working capital on the basis of these revenues and a [X] month delay. We then calculated working capital for the remainder (i.e. [X]) of the ECC revenues with one and a half month delay. This results in a total working capital for 2011/12 of £9.8m. The amount that forms part of the ECC cost stack is the cost of capital, so around £0.7m.¹⁷⁹⁹ This increases BT's costs for ECCs by just under 2%.

22.57 The figure below contains our final start charges.¹⁸⁰⁰

¹⁷⁹⁵ Openreach response to S135 Notice of 14 February 2013 [X].

¹⁷⁹⁶ BT response to S135 Notice of 1 July 2011 and 28 September 2012 [X].

¹⁷⁹⁷ [X].

¹⁷⁹⁸ Openreach response dated 30 November 2012, Table 1 and response to S135 Notice of 25 May 2012. [X]. We have used the figure on the share of all ECC revenues attributable to surveys from the latter response, and then assumed that roding and tubing is in constant proportion to surveys.

¹⁷⁹⁹ This is calculated as follows:

Working capital for surveys and roding/tubing = [X]

Working capital for other ECC work = [X]

Using the real cost of capital of 7%, the resulting ECC cost of capital = [X]

[X].

¹⁸⁰⁰ In some cases, the previous charges were slightly higher than those that we are implementing. This is due to inconsistent rounding rule that we applied at the consultation stage. For our final ECC charges, we have applied the following rounding rules. For unit cost below £10, we have rounded upwards to one decimal place; for unit cost between £10 and £1000, we have rounded to the nearest £1 and for unit costs above £1000 we have rounded to the nearest £10. In each case the rounding is upwards to ensure that BT can recover its costs.

Figure 22.2 Our conclusions on start charges ex-VAT

	Implemented start charge £
Survey Fee	252
Drilling each external wall	235
Drilling each internal wall non concrete	43
Drilling each internal wall concrete	142
Cable installed into duct, buried or installed on poles including any jointing required per metre	4.40
Blown Fibre per metre	3.10
Blown fibre tubing in duct per metre	2.80
Internal cabling (including internal blown fibre tubing) per metre	5.00
New ductwork (including wayleave costs)	
- under soft surface per metre	20
- under foot way per metre	40
- under carriage way or roads per metre	80
Trunking & traywork within customer's curtilage per metre	29
New footway box small (surface area up to 0.5 sqm)	695
New footway box medium (surface area between 0.5 and 1sqm)	1,530
New footway box large (surface area greater than 1sqm)	2,650
Provision of a Small carriageway box (surface area up to 1sqm)	2,450
Provision of a medium carriageway box (surface area between 1 and 1.25 sqm)	3,000
Provision of a small carriageway box (surface area above 1.25 sqm)	3,430

** There are four items in the ECC price list (Provision of pole, Copper cable, Directly buried cable and Moleploughing cable or fibre in subduct) which are not included in our proposed start charge adjustments. These items are used only rarely for leased line purposes, and over 90% of their use comes from other markets. Of these items, only the provision of a pole features in our ECC sample, and then only in 1% of orders). We exclude*

- 22.58 As set out in paragraphs above, BT commented on the specific risks they incur in the provision of ECCs. Our response to this is set out below.
- 22.59 As far as risks associated with failing to achieve good capacity utilisation in the long run, we disagree that BT should be allowed an additional risk return on these assets. BT recovers its full costs of ECC provision upfront from CPs. Therefore there is no risk involved.
- 22.60 Openreach argued that the orders for ECCs are cancelled more frequently where ECCs are involved and it had already incurred ECC-related costs that it could not recover. We agree that BT should be allowed to recover the costs associated with cancelled orders. However, we requested assurance that the costs associated with cancelled orders were not already recovered from other services e.g. in the Ethernet basket. On the basis of the information Openreach provided, we understand that BT already recovers the costs of cancelled orders from other services.
- 22.61 Openreach said that all the costs associated with the ECC orders, irrespective of whether they are cancelled or not, are booked to the Class of Work for the relevant

activity.¹⁸⁰¹ Openreach said that [X].¹⁸⁰² Our expectation is that Openreach already recovers them from Ethernet and TI services. We therefore do not consider that it is necessary to make any additional provisions for these costs to be recovered.

22.62 We accept that there may be cases where the estimated costs for ECCs that are contractually agreed with the customer are below the actual costs and this risk should be taken into account in setting the level of the charges. Openreach does not separately identify underestimated quotes on a systemic basis.¹⁸⁰³ We requested data from Openreach on underestimated quotes. This data suggested that the costs of underestimated orders are negligible. On the basis of the sample of ECCs orders from April 2012, we note that of the [X] orders with ECCs quoted, there were only [X] orders associated with underestimated quotes of which [X] were cancelled. As such there was [X].¹⁸⁰⁴ In addition, as with cancelled ECCs, we would expect that the costs relating to underestimated quotes would already be captured in our base year costs.

22.63 In response to some CPs' concerns over the historical levels of ECCs, we note that this is not within the scope of this market review to address this issue, rather this market review is to address prospective competitive concerns. .

A separate control on ECCs with a sub-cap of GBCI-0% on each ECC charge

The LLCC Consultation proposals

22.64 In arriving at our proposal, we considered the following basket design options for ECCs:

- option 1 - a combined Ethernet basket including ECCs; and
- option 2 – a separate control on ECCs.

22.65 We recognised that option 1 would give the greatest pricing flexibility to Openreach. However, we considered that this would not be the most appropriate approach for ECCs for three reasons:

- firstly, ECCs share very few common costs with other Ethernet and TI services, as they are essentially construction costs rather than circuit costs;¹⁸⁰⁵
- secondly, the anticipated future trend of the costs is different to other Ethernet and TI services; and
- thirdly, we noted that ECCs represent a low value compared to the overall Ethernet basket (£32m in the 2010/11 RFS) and placing them in a combined basket would not in itself result in an effective control of their prices, without an additional sub-cap.

¹⁸⁰¹ Openreach response to information request dated 30 November 2012 [X] and to s135 Notice of 14 February 2013 [X]

¹⁸⁰² Openreach response to information request dated 30 November 2013.

¹⁸⁰³ It is because at KCI3 stage Openreach confirms the price for ECCs to the CP and honours the price given back. Openreach response to s135 Notice of 14 February 2013. [X]

¹⁸⁰⁴ [X] BT response to information request dated 30 November 2012.

¹⁸⁰⁵ The only common costs are the overhead costs allocated relating to the administration of ECCs.

- 22.66 Given the above, we proposed a separate control on ECCs that would apply both to TI and Ethernet services.
- 22.67 We also proposed to use a sub-cap of GBCI-0% on each ECC charge. We were concerned that the use of RPI may be inappropriate for ECCs as a significant proportion of the cost is simply passed through from the contractor, and thus these costs may follow a different cost trend from Openreach's overall costs. As discussed in the LLCC Consultation, the use of an RPI-0% cap may place Openreach at risk of not recovering its costs, if its contractors' cost or Wayleaves costs rise faster than RPI. We therefore considered two alternatives:
- the use of an alternative index which specifically reflects construction costs; or
 - the regulation of BT's mark-up over its construction costs.
- 22.68 Whilst BT's actual charges have been largely based on a pass-through of input costs, we proposed to reject regulating the mark-up over construction costs as such cost pass-through mechanisms have very poor incentives for cost minimisation because BT would not retain the benefit of doing so. In addition, we were concerned that regulating a mark-up may reveal commercially sensitive information, such as the level of BT's input costs.
- 22.69 Overall, our view was that the GBCI index is more appropriate for the ECC basket than the RPI index or regulating BT's mark-up over contractor charges. We considered that the GBCI would be a better indication of the cost trend for ECC than RPI. As set out in the LLCC Consultation, the risk that BT may affect the index is low as ECCs are likely to constitute a small proportion of the overall GBCI. The overall index should be independent of BT's actual ECC costs.
- 22.70 Although we had not identified any anti-competitive incentive on Openreach to discriminate between different ECCs, we proposed to apply the constraint of GBCI-0% on each and every charge. This was because demonstrating compliance with an overall ECC basket would require data on prior year revenue weights for ECCs and BT indicated that this data is difficult to provide. We said that we would consider reverting to a basket structure if the difficulties relating to compliance with a basket could be resolved.
- 22.71 Given our proposed adjustment to starting charges and a cap of GBCI-0% to each charge in the basket, we considered that this approach would be effective at constraining the level of the ECC charges and as such, we did not see the need to apply a cost orientation obligation.

Consultation responses

- 22.72 BT agreed with Ofcom proposal to control ECCs through separate price controls with a price cap of GBCI-0% on each individual charge. It also supported our proposal not to apply a cost orientation obligation in addition to the price control. BT agreed that GBCI is appropriate in this instance as these costs are construction-related. BT also added that the use of a control on each and every charge will support their ability to demonstrate compliance in an area with limited existing data on volumes and revenues.¹⁸⁰⁶

¹⁸⁰⁶ See BT non-confidential response to the LLCC Consultation, page 27.

- 22.73 In contrast, EE and MBNL argued that the use of the GBCI is inappropriate and Ofcom should use RPI instead. They also considered a cost pass through mechanism a reasonable approach. EE and MBNL stated that the proposed cap is weaker than a simple cost pass through and does not incentivise BT to constrain its costs in line with general inflation. Although EE and MBNL recognised that passing through these costs with no control would not provide BT with efficiency incentives, both argued that using the GBCI in order to provide such an incentive is inappropriate. Both were concerned that BT's actual construction costs are not likely to move in line with an industry average and noted that the GBCI includes the costs of materials as well for all types of construction. They were not in favour of using a price index which is likely to increase at a higher rate than BT's own construction costs.¹⁸⁰⁷
- 22.74 Level 3 welcomed the move to a separate control.¹⁸⁰⁸ Level 3 doubted whether the proposed GBCI index would prove more accurate than RPI or CPI in reflecting the true cost of constructing fibre network facilities. It accepted, however, that there may be a merit in Ofcom's proposal if the civil engineering costs form the largest proportion of ECC elements.¹⁸⁰⁹
- 22.75 Telefonica also supported our proposal to have a separate control on each ECC charge (rather than include them in the general Ethernet basket) and to use the GBCI rather than the RPI index.¹⁸¹⁰

Our response and conclusions

- 22.76 In light of the comments received by stakeholders, we have concluded it is appropriate to have a separate control on each ECC charge.
- 22.77 We note stakeholders' comments on the use of GBCI index and consider whether there is a justification for changing the inflation index from the one we proposed in the LLCC Consultation.
- 22.78 We recognise that there are alternative measures of inflation that could be used such as the RPI measure of inflation or the CPI which focuses to a greater extent on household consumption of goods than RPI does. However, these do not account for construction-specific trends.
- 22.79 ECCs allow customer-specific network extensions and cover activities such as the installation of new duct, new blown fibre and drilling through walls. We would expect those costs to move in line with BT's actual construction costs. The GBCI index reflects costs of labour and materials. We accept that BT's actual construction costs may not necessarily move in line with an industry average, however the GBCI index is likely to be a more accurate reflection of costs trends for ECC work, than retail prices in general.
- 22.80 In our view GBCI remains an appropriate means by which to index-link ECCs. This is more relevant to construction work than the RPI or CPI and thus more likely to follow costs for ECC construction. The GBCI indexation applied is the amount of the change in the GBCI in the period of twelve months ending on 30 September

¹⁸⁰⁷ See Combined non-confidential response of EE and MBNL, page 21 and 22.

¹⁸⁰⁸ See Level 3 non-confidential response to the LLCC Consultation, page 21.

¹⁸⁰⁹ See Level 3 non-confidential response to the LLCC Consultation, page 19.

¹⁸¹⁰ See Telefonica non-confidential response to the LLCC Consultation, page 41.

immediately before the beginning of a Relevant Year, expressed as a percentage (rounded to two decimal places).

- 22.81 Given our implemented adjustment to starting charges for ECCs to bring them in line with costs and a cap of GBCI-0% to each charge in the basket, we do not see the need to apply a cost orientation obligation. We consider that this approach would be effective at constraining the level of the ECC charges as it does not allow BT much flexibility on pricing individual charges and as such it should be sufficient to ensure prices will not move out of line with the underlying costs.

Accommodation products

Background

- 22.82 Accommodation services are used by CPs for Local Loop Unbundling (LLU) as well as leased line purposes. Openreach currently provides two types of accommodation services; Co-mingling and Access Locate. Co-mingling is exclusively provided in support of LLU whilst Access Locate enables CPs to put site-specific communications equipment in BT's exchanges. Access Locate and LLU Co-mingling services are currently charged at the same price.¹⁸¹¹
- 22.83 As set out in Section 14, the availability of accommodation in BT exchanges is an important enabler in encouraging the use of disaggregated services in TISBO, AISBO and MISBO markets and there is a need to regulate the price of accommodation products.
- 22.84 In addition to the accommodation products described above, Openreach also provides a further accommodation product in support of interconnection services called Cablelink. As explained in Section 14, it is an essential element of the accommodation services given that it allows, for example, CPs to connect their Point of Presence within the BT exchange with its fibre outside the exchange.

The LLCC Consultation proposals

- 22.85 As explained in the LLCC Consultation, the WLR LLU CC implemented a separate basket for Co-mingling ancillary services with a charge control of 1.8% for 2012/2013 and an RPI-3.6% for 2013/2014.¹⁸¹²
- 22.86 We identified 44 Openreach accommodation products which CPs may use for leased lines that are also regulated as part of the WLR LLU CC in the Co-mingling ancillary services basket.¹⁸¹³ These overlapping products are identical except that under Access Locate terms CPs can house a wider range of equipment than under LLU.¹⁸¹⁴

¹⁸¹¹ See Openreach Price list

<http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=Hj5ChEayJAPNdhm0ASx5w1Q7mlHQ7knfZecxPaxSmFxZ6rNZujnCs99NbIKJZPD9hXYmijxH6wr%0ACQm97GZMyQ%3D%3D>

¹⁸¹² See Figure 1.1 in the 2012 WLR LLU CC Statement -

<http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf>

¹⁸¹³ The relevant products are listed in Annex 7.

¹⁸¹⁴ Accommodation products used for leased lines allow CPs to locate equipment listed under <http://stakeholders.ofcom.org.uk/telecoms/policy/bt-undertakings/annex4>.

- 22.87 Also, there is an Access Locate Administration Fee¹⁸¹⁵ of £215 (per exchange site) that is payable by LLU operators who want to convert their Revised agreement for Access Network Facilities to Access Locate terms and conditions.
- 22.88 Given that the accommodation products are already charge controlled under the WLR LLU CC, we were concerned that if we were to implement a separate regulation on the overlapping products in the LLCC, this may lead to a different level of control for those products and create compliance issues for Openreach, especially as the LLCC starting and end dates are not aligned.
- 22.89 In order to avoid a situation where BT may breach one set of SMP conditions in order to comply with the other set of SMP conditions, our view was that the overlapping products should be subject to one charge control only. Since the majority of volumes in relation to Co-mingling services are associated with the provision of LLU services, we considered it appropriate that the WLR LLU CC should determine their level. Given the widespread deployment of LLU, we said that the incremental costs of providing Co-mingling space in support of Ethernet and TI products should be minimal and, where those costs are incurred, should be recovered in a manner similar to the existing LLU Co-mingling product.
- 22.90 We proposed that the pricing for Co-mingling in support of Ethernet and TI products should be no more than the pricing of Co-mingling in support of LLU, and its prices transparent and non-discriminatory.¹⁸¹⁶
- 22.91 With regard to the Access Locate Administration Fee¹⁸¹⁷ and Cablelink which are not regulated under the WLR LLU CC, we proposed that these charges should be subject to a cap of to RPI-0%.
- 22.92 Given the relatively small size of Access Locate Administration Fee, we considered this proposal was proportionate and appropriately balances the need for cost recovery with the need to ensure that CPs have transparency over future prices and are protected from excessive price rises.
- 22.93 In terms of Cablelink, we noted that the volumes attributable to Cablelink are small, and the revenues in 2010/11 accounted for significantly less than 1% of the total Ethernet basket. In addition, Cablelink prices remained the same since May 2005.¹⁸¹⁸ Given the size of this service as a proportion of the market, we believed it would be disproportionate to set an explicit charge control on Cablelink. However, recognising a potential risk that Openreach could increase its prices significantly, we considered it would be appropriate to impose a cap of RPI-0%. We believed that this should provide BT with flexibility to cover its costs, and is consistent with our approach to other comparable services where BT has SMP.

¹⁸¹⁵ The exact name of this charge is Contract conversion From RANF to Access Locate.
<http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=Hj5ChEAYJAPNdhm0ASx5w1Q7mIHQ7knfZecxPaxSmFxZ6rNZujnCs99NbIKJZPD9hXYmijxH6wr%0ACQm97GZMyQ%3D%3D>

¹⁸¹⁶ We also note that in setting the charge controls for accommodation services, the LLU analysis has taken into account the use of these services by non-LLU customers (e.g. Ethernet services).

¹⁸¹⁷ This charge covers the costs of administration such as receipt of order, notifying the CP that the transfer is actioned, updating the billing and reporting systems.

¹⁸¹⁸ See
<http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=kgnGm8XSPQZEY5UMJxGwO9yDfzZeTWgW5o%2F%3D%3D>

22.94 Since we proposed to apply a cap of RPI-0% to the Access Locate Administration Fee and individual Cablelink charges, we considered that an additional cost orientation obligation would not be proportionate.

Consultation responses

22.95 CWW agreed with Ofcom's proposals to regulate accommodation services. It pointed out, however, that there are knock on risks that we need to consider. Specifically, CWW referred to the fact that BT had increased the cost of space offsetting this increase with a decrease in the cost of tie cables. This has an effect of increasing the cost of BCMR services as CPs do not purchase tie cables in this market.¹⁸¹⁹

22.96 It further urged Ofcom to consider this matter further to try both prevent and expose any potential competitive distortion in this area by "improving accounting transparency and limiting BT's ability to load cost onto services purchased by external customers."¹⁸²⁰

22.97 Level 3 agreed with Ofcom's general approach towards regulating the charges for accommodation services. However, it believed there should be adjustments made because of the lack of equivalence, particularly in terms of tie cable usage.¹⁸²¹

22.98 Telefonica said that given the importance of accommodation and power, it supports Ofcom's proposal to apply specific caps on these services, more specifically:

- to require Openreach to price leased lines accommodation products the same as Co-mingling; and
- a specific price cap on the Access Locate fee and Cablelink of RPI-0%.¹⁸²²

22.99 BT said that if the items identified in the Accommodation basket need to be charge controlled, it is appropriate to control these in a separate basket. It added that these items would have different cost drivers to other Ethernet services and movement of their costs over time will differ from those applicable to the other Ethernet services.¹⁸²³

22.100 BT welcomed our proposal on regulating accommodation services. It noted that as a matter of good regulatory practice, products should be regulated only through one charge control and that it would be difficult for Openreach to comply with both charge controls on the same products, as the timing and the level of price changes were different.¹⁸²⁴

22.101 In addition, BT noted that the WLR LLU CC SMP conditions explicitly state that the WLR LLU CC for the LLU comingling basket cover all comingling services irrespective of their use.

¹⁸¹⁹ See CWW response to the LLCC Consultation, paragraph 15.26.

¹⁸²⁰ See CWW response to the LLCC Consultation, paragraph 15.27.

¹⁸²¹ See Level 3 non-confidential response to the LLCC Consultation, page 21.

¹⁸²² See Telefonica non-confidential response to the LLCC Consultation, page 41.

¹⁸²³ See BT non-confidential response to the LLCC Consultation, page 31.

¹⁸²⁴ See BT non-confidential response to the LLCC Consultation, page 31.

22.102 BT also agreed with the proposed RPI-0% control for Access Locate Administration Fee and Cablelink.

22.103 BT said that it agreed that a cost orientation obligation should be removed from accommodation services.¹⁸²⁵

Our response and conclusions

22.104 Given the broad support from stakeholders for our approach, we remain of the view that aligning regulation of accommodation products with WLR LLU CC and a price cap for the Access Locate Administration Fee and Cablelink as proposed in the Consultation is appropriate.

22.105 We note that the leased line volumes are captured in the compliance assessment of the Co-mingling basket for WLR LLU.¹⁸²⁶ This means that the accommodation products for leased lines are already part of that charge control. The introduction of an additional requirement as part of this charge control would mean that those products would be subject to two different charge controls. We consider that this would not be appropriate.

22.106 We recognise stakeholders' concern on rebalancing individual charges within the Co-mingling basket services. We note that Ofcom has commenced a review to examine competitive conditions in fixed access markets, and assess appropriateness of charge control remedies for WLR and LLU products for the period after the expiry of the current charge controls on 1 April 2014. As part of this review, the WLR LLU market review project will be considering, among other issues, the appropriate basket design.

22.107 With regards to the issue over compensating for the lack of equivalence in terms of product usage, in particular the fact that tie cables are not used for leased line purposes, we consider that it may not be proportionate to make further adjustments at this stage. The current charge controls on Co-mingling basket expire in March 2014. In addition, such an adjustment would result in a different level of price changes for the same products depending whether they used for leased lines or LLU purposes. It would be therefore difficult for Openreach to comply with both charge controls on these products.

22.108 Given that we are implementing a cap of RPI-0% Access Locate Administration Fee and Cablelink, we do not see the need to apply a cost orientation obligation to these services. We consider that our approach would be effective at constraining the level of these charges as it already significantly limits BT's flexibility on pricing.

¹⁸²⁵ See BT non-confidential response to the LLCC Consultation, page 31.

¹⁸²⁶ See Annexes to LLU WLR CC statement page 127 where we say "For the avoidance of doubt, for the purpose of calculating the Percentage Change for the basket specified in paragraph FAA4(A).1(c), the revenues accrued for Co-Mingling Services shall be taken to include all revenue accrued from selling Co-Mingling Services and/or other services irrespective of their use."
<http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/annexes/wlr-cc-annexes.pdf>

The ECC and accommodation services control meets the relevant tests under the Act

Powers under sections 87 and 88 of the Act

22.109 We are imposing a charge control on BT by means of an SMP condition¹⁸²⁷ under section 87(9) of the Act. In respect of ECC services, we propose to apply a sub-cap of GBCI-0% on each individual charge. In respect of Accommodation services, we impose a sub-cap of RPI-0% on both Cablelink services and the Access Locate Administration Fee.

22.110 The controls for ECC and Accommodation services apply to specific services relating to the provision of TI and Ethernet services within the scope of the TI and Ethernet basket. The relevant ECC and Accommodation services are listed in Annex 7 of this Statement.

22.111 Section 88 of the Act states that Ofcom should not set an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse effects arising from price distortion and it also appears that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on the end-users of the public electronic communications services.

22.112 In imposing charge controls, section 88 also requires that we must take account of the extent of the investment in the matters to which the condition relates of the person to whom the condition it to apply – i.e. BT.

There is a relevant risk of adverse effects arising from price distortion

22.113 As set out in the SMP analysis in Section 10, 11, 12 and 13 above, and explained further above in this Section, we consider the relevant risk of adverse effects arising from price distortion is the risk that BT might fix and maintain its prices for the specific services we include in the price control in the relevant wholesale markets at an excessively high level.

Promoting efficiency

22.114 We consider that imposing the SMP condition is appropriate for the purpose of promoting efficiency since, in the absence of competitive pressures, we believe that BT could seek to impose charges not related to the costs of providing the services. By bringing prices more in line with the underlying costs, our charge control proposals will increase efficiency.

¹⁸²⁷ SMP Condition 5.6 and 5.6 at Annex 7 of this Statement.

Promoting sustainable competition and conferring the greatest possible benefits on end-users

22.115 We also consider that the charge controls are appropriate to promote sustainable competition and to confer the greatest possible benefits on end-users of public electronic communications services.

22.116 The market analysis we have conducted as set out in Section 11, 12, 13 and 14 suggests that there is a sufficient risk that BT might fix or maintain its charges for the services within the scope of the controls on ECC and Accommodation services at an excessively high level, which would be to the detriment of competition. Preventing excessive pricing via a sub-cap promotes sustainable competition, which we consider is likely to be the most effective way of benefiting end-users of public electronic communications services. It enables greater choice of services for end users in terms of choice, price, quality of service and value for money.

22.117 In addition to reducing the level of ECCs, we have included appropriate safeguards in the form of sub-caps on individual ECC and Cablelink charges to ensure that Openreach does not price in an anti-competitive manner to the detriment of any end-user.

Investment matters

22.118 In deciding to impose the ECC and Accommodation control we have also taken into account the need to ensure Openreach has the correct incentives to invest and innovate. In particular, we have sought to ensure that Openreach will be able to recover its costs. In relation to ECC services, the GBCI index provides better indication of the trend increase in the cost of ECC provision.

We have considered the tests under section 47 of the Act

22.119 Any SMP condition must also satisfy the tests set out in section 47 of the Act, namely that it must be:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or a particular description of persons;
- proportionate as to what it is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

22.120 We consider these tests are satisfied.

The SMP condition is objectively justifiable

22.121 In sections 11 to 14 we have set out that BT has SMP in the markets covered by our ECC and Accommodation services controls. In the absence of any charge control, this would allow BT to set charges unilaterally, leading to a risk of excessive pricing. This would have an adverse impact on both the ability of companies to compete in the downstream provision of leased lines services and on consumer choice and value for money. Our charge controls have been designed to address this risk while

allowing BT the ability to recover its costs, including a reasonable return on investment.

The SMP condition does not discriminate unduly

22.122 The charge controls do not discriminate unduly against particular persons or a particular description of persons, since any CP (including BT itself) can access the services at the regulated level of charges. We consider that the charge controls do not discriminate unduly against BT as the controls address BT's market position, including its incentive and ability to set excessive charges for services falling within the scope of the controls.

The SMP condition is proportionate

22.123 The charge controls are proportionate because they directly address the risk of excessive pricing identified by this market review and are focused on ensuring that there are reasonable prices for the services in question. Openreach's obligations apply to the minimum set of charges required for the delivery of bottleneck services. They are focused on ensuring that there are reasonable prices for those access services, which are critical to the development of a competitive market. Openreach is also allowed to recover its costs. The charge controls provide Openreach with the incentives to invest and develop its network.

22.124 For the reasons set out above, therefore, we consider the SMP condition is:

- appropriate to achieve the aim of addressing BT's ability and incentive to charge excessive prices for ECC and accommodation services;
- necessary in that it does not, in our view, impose controls on the prices BT may charge for ECC and accommodation services that go beyond what is required to achieve the aim of addressing BT's ability and incentive to charge excessive prices for these services; and
- such that it does not, in our view, produce adverse effects which are disproportionate to the aim pursued which is to address BT's ability and incentive to charge excessive prices for ECC and accommodation services.

The SMP condition is transparent

22.125 Finally, for reasons discussed above, we consider the SMP condition is transparent. Its aims and effect are clear and it has been drafted so as to secure maximum transparency. We consulted on the proposed text of the SMP condition. Its intended operation is also aided by our explanation in this statement.

We have considered sections 3 and 4 of the Act

22.126 We also consider that the ECC and Accommodation services control fits with our duties under sections 3 and 4 of the Act.

22.127 For the reasons set out above, we consider that the control will, in particular, further the interests of citizens and of consumers in relevant markets by the promotion of competition in accordance with section 3 of the Act. In particular, we have had regard to the development of effective competition in downstream markets.

- 22.128 We have had particular regard to the requirement to promote competition and to secure efficient and sustainable competition for the benefit of consumers, which are relevant to both sections 3 and 4 of the Act. We have placed particular emphasis on the promotion of competition, which we consider is likely to be the most effective way of furthering citizen and consumer interests in the relevant markets.
- 22.129 We have also had regard in deciding the control on ECC and Accommodation services to the desirability of encouraging investment and innovation in the wholesale markets in which we found we should impose a charge control.

Section 23

Price controls for retail analogue services

Introduction

- 23.1 In Section 7 we identified the retail very low bandwidth TI leased lines market in the UK excluding the Hull area and we proposed that BT has SMP in this market. This market encompasses retail analogue leased lines and retail digital leased lines at bandwidths below 2Mbit/s. An unusual feature of this market is that because of the legacy nature of analogue services BT does not supply upstream wholesale inputs of these services.
- 23.2 In relation to analogue services we found that BT's share of retail sales was very high and almost unchanged since the BCMR 2008 at 96%. We identified a risk of excessive pricing based on BT's position of entrenched SMP, the legacy nature of analogue services, and their impending withdrawal.
- 23.3 In this Section we set out the price controls that we have decided to apply to retail analogue services provided by BT.

Summary of our key decisions

- 23.4 To address the risk of excessive pricing, we have decided that a safeguard cap should be applied to rental charges for retail analogue services and that it should be set at the same level as the controls applied to TI services. The charge control will comprise:
- a cap of RPI+2.50% on services within the retail analogue basket; and
 - a cap of RPI+10% on each charge within the retail analogue basket.

The LLCC Consultation proposals

- 23.5 As discussed in Section 10, in the June BCMR Consultation we identified a risk that BT may use its position of SMP to charge excessive prices. Given the circumstances, we considered a specific charging constraint in the form of a safeguard cap would be appropriate. Safeguard caps are designed to protect end users from excessive price rises, generally by requiring that prices must not rise in real terms by more than a specified amount.
- 23.6 Unlike conventional charge controls, safeguard caps are not generally imposed to bring charges into line with the forecast level of costs at the end of the charge control period. We considered that the retail level safeguard cap should allow BT to recover a reasonable amount of its retail and network costs from retail analogue leased lines, and to allow changes in these costs to be reflected in retail prices in order to encourage efficient migration to newer services, whilst at the same time protecting customers from excessive pricing.
- 23.7 We considered that setting the retail cap at the same level as the basket cap on wholesale TISBO and trunk charges would be consistent with our objectives set out above. Thus, if the basket cap on wholesale TISBO and trunk charges were RPI+x% we would propose that the retail cap should also be RPI+x%. This is sufficient to

allow recovery of costs, as we explain below, and provide appropriate signals for migration.

- 23.8 Setting the safeguard cap to reflect the charge control we propose for digital wholesale TISBO and trunk services would allow recovery of an appropriate amount of network costs since analogue services and sub-2Mbit/s wholesale digital services are supported by the same platform. The costs of providing sub-2Mbit/s wholesale digital services are included in the base year costs we use in our charge control model and the charges for these services would be subject to an RPI +/- x% wholesale basket cap.
- 23.9 Setting the cap in this way would also allow BT to recover a reasonable amount of retail costs. Most retail costs are determined by the total level of BT retail activity, rather than the volume of an individual service, and BT allocates retail costs between services largely on the basis of revenues. Hence, we consider that the amount of retail costs which needs to be recovered from each retail leased line (the unit retail cost) will not rise more rapidly than the increase in unit network costs allowed for in the sub-cap on wholesale charges.¹⁸²⁸ For these reasons, it has not been necessary explicitly to model BT's retail costs.
- 23.10 In addition, the wholesale TISBO and trunk charge control have been set taking into account the desirability of encouraging efficient migration to new services. Setting the retail safeguard cap at the same level means that price signals from the wholesale level can be transmitted to retail customers, who will then be given an appropriate incentive to switch to a newer alternative.
- 23.11 Given the legacy nature of these services, we consider that there is likely to be relatively little demand for new connections. Therefore, in order to be proportionate in terms of the burden of regulation on BT, in the LLCC Consultation we proposed that the safeguard cap should apply only to rental charges for analogue services.
- 23.12 For the proposed wholesale TISBO and trunk charge control, we had proposed a basket control with a cap of RPI+0% to RPI+6.5%, with our base case of RPI+3.25%. We therefore proposed a safeguard cap for retail analogue rental services of RPI+3.25%.
- 23.13 In addition, within the wholesale controls, we proposed to set a cap on each rental charge at RPI+10%, to protect against sharp price rises for particular customers or groups of customers. We proposed to apply a comparable cap on each and every charge as part of the safeguard cap for retail analogue services.

Consultation responses

- 23.14 Three respondents commented on our proposal for a safeguard cap for retail analogue services. CWW supported the proposed safeguard cap and considered that it would strike the right balance between the need to protect consumers and the practical issue of the impending withdrawal of analogue services. Level 3 also supported the proposed safeguard cap.

¹⁸²⁸ We explained the way that BT's retail costs are determined in our consultation on the NTS retail uplift. See <http://stakeholders.ofcom.org.uk/binaries/consultations/nts-retail-uplift/summary/nts-retail-uplift.pdf>, in particular paragraph 5.123 onwards. We set a cap of RPI+1.25% to allow recovery of a reasonable amount of retail costs through the uplift.

23.15 In its response BT argued that Ofcom should not have found SMP in the retail low bandwidth TI market.¹⁸²⁹ Without prejudice to this view, BT supported the proposed safeguard cap on retail analogue services in the event that Ofcom did conclude that BT had SMP in this market. In BT's view, the safeguard cap recognises the need for BT to recover a reasonable amount of its retail and network costs from retail analogue leased lines and also allows changes in these costs to be reflected in retail prices in order to encourage efficient migration to newer services.

Our response and conclusions

23.16 We note that to the limited extent that respondents commented on our proposal to apply a safeguard cap, they agreed with them. BT's comments in relation to SMP are addressed in Section 7.

23.17 In light of the limited and broadly positive responses we received, we have decided to implement proposals from the LLCC Consultation. BT will therefore be subject to a safeguard cap that will be applied to rental charges for retail analogue services and which will be set at the same level as the controls applied to TI services. The charge control will comprise:

- a cap of RPI+2.50% on services within the retail analogue basket; and
- a cap of RPI+10% on each charge within the retail analogue basket.

The safeguard cap meets the relevant tests under the Act

Powers under sections 87 and 88 of the Act

23.18 We are imposing a charge control on BT in the form of a safeguard cap of RPI+2.50% on services within the retail analogue basket, and of RPI+10% on each charge within that basket, as an SMP condition under section 87(9) of the Act.¹⁸³⁰

23.19 The safeguard cap applies to retail analogue services in the retail market for very low bandwidth traditional interface leased lines in the UK excluding the Hull Area, at bandwidths below 2Mbit/s.¹⁸³¹

23.20 The specific services, and the market to which the safeguard cap applies, are set out in the SMP condition in Annex 7.

23.21 Section 88 of the Act states that Ofcom should not set an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse effects arising from price distortion and it also appears that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on the end-users of the public electronic communications services.

¹⁸²⁹ We discuss BT's comments on this point in our market power assessment, Section 7 above.

¹⁸³⁰ SMP condition 5.4 at Annex 7 of this Statement.

¹⁸³¹ As identified in the Section 7 of this Statement.

- 23.22 In proposing charge controls, section 88 also requires that we must take account of the extent of the investment in the matters to which the condition relates of the person to whom the condition is to apply – i.e. BT.

There is a relevant risk of adverse effects from price distortion

- 23.23 As set out in Section 10 and in this Section, we consider the relevant risk of adverse effects arising from price distortion is the risk that BT might so fix and maintain its prices for analogue services in this retail market at an excessively high level.

Promoting efficiency

- 23.24 We consider that imposing the SMP condition is appropriate for the purpose of promoting efficiency. It would allow BT to recover an appropriate level of network and retail costs. It would also allow changes in these costs to be reflected in retail prices thereby giving end-users an appropriate incentive to switch to newer alternatives.

Promoting sustainable competition and conferring the greatest possible benefits on end-users

- 23.25 As set out in the in Sections 7 and 10, amongst other things our market analysis has shown:
- BT has a 96% share of retail sales of analogue services, almost unchanged since the 2007/8 Review, and volumes are in steady decline as end-users migrate to more modern services; and
 - there are currently no upstream wholesale analogue services available to CPs and given the legacy nature of analogue services and their impending withdrawal, there is little prospect that retail competition would increase even if we were to require BT to offer wholesale services to CPs.
- 23.26 As a result of this we consider that given the very poor prospects for retail competition we consider it appropriate to give less weight to measures designed to promote competition entry. The introduction therefore of a safeguard cap on retail analogue services should be seen in the context of this market analysis set out in Section 7 and 10. As such we consider that the setting of the SMP condition is appropriate to promote sustainable competition in this market as a whole insofar as its scope is limited to retail analogue services where there is a virtual absence of competition, and it does not apply to other services in this market where, in light of our market analysis, we consider reliance on wholesale competition through the regulated provision of upstream wholesale inputs should be sufficient to address the risk of excessive pricing.
- 23.27 We consider that the setting of the SMP condition is also appropriate to confer the greatest possible benefits on end-users of public electronic communications services since it addresses the risk we have identified of end-users having to pay excessive prices for BT's retail analogue services where otherwise the virtual absence of competition for these services would fail to do so.

Investment matters

- 23.28 For the safeguard cap on BT's retail analogue services we have also taken into account the need to ensure BT has the correct incentives to invest and innovate.

23.29 The costs of the retail analogue platform are included in our TI basket. We have set the value of the TI basket to bring prices into line with costs, including a return on capital by the end of the charge control period. This is consistent with appropriate incentives for investment. We also note that the values of X for the retail analogue services, are consistent with encouraging customer migration to more modern services.

We have considered the tests under section 47 of the Act

23.30 Any SMP condition must also satisfy the tests set out in section 47 of the Act, namely that it must be:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or a particular description of persons;
- proportionate as to what it is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

23.31 We consider these tests are satisfied.

The SMP condition is objectively justified

23.32 Our rationale for setting the safeguard cap is that, on the basis of our market analysis, in the absence of such a control there is a risk BT would price its retail analogue services excessively. In our view the safeguard cap addresses this risk and, based on the reasoning set out above in this section, we consider the SMP condition is objectively justifiable.

The SMP condition does not discriminate unduly

23.33 The SMP condition will not discriminate unduly against a particular person or particular persons. It applies only to BT to address the risk of BT engaging in excessive pricing for its retail analogue services arising from the position of SMP which, on the basis of our market analysis in Section 7, we have found in this market.

The SMP condition is proportionate

23.34 For the reasons set out above, therefore, we consider that the SMP condition is:

- appropriate to achieve the aim of addressing BT's ability and incentive to charge excessive prices for its retail analogue services in this market;
- necessary in that it does not impose controls on the prices BT may charge for its retail analogue services that go beyond what is required to achieve the aim of addressing BT's ability and incentive to charge excessive prices for these services; and
- such that it does not produce adverse effects which are disproportionate to the aim pursued which is to address BT's ability and incentive to charge excessive prices for its retail analogue services in this market.

The SMP condition is transparent

23.35 Finally, for reasons discussed above, we consider that the SMP condition is transparent. Its aims and effect are clear and it has been drafted in the proposed SMP condition so as to secure maximum transparency. The text of the SMP condition has been published with this statement. Its intended operation is also aided by our explanation in this statement.

We have considered sections 3 and 4 of the Act

23.36 We also consider that the safeguard cap on BT's retail analogue services fits with our duties under sections 3 and 4 of the Act.

23.37 For the reasons set out above, we consider the safeguard cap, together with the other SMP conditions we are imposing, will promote competition in this market and will therefore further the interests of citizens in relation to communication matters and the interests of consumers in this market.

23.38 We consider the safeguard cap will, together with our other charge controls set out in this Statement, secure the availability throughout the United Kingdom of a wide range of electronic communications services.

23.39 We have also had regard in imposing the safeguard cap to the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.

23.40 Finally, in performing our duty to further the interests of consumers, we have also had regard in imposing the TI basket control of RPI+2.50%, in particular, to the interests of those consumers in respect of choice, price, quality of service and value for money by ensuring that the prices reflect the underlying costs.

Section 24

Implementation of the new charge controls

Introduction

24.1 This Section sets out our conclusions with regards to the implementation of the leased line charge controls, specifically:

- the structure of the new SMP conditions;
- the charge control formulae;
- how the charge controls deal with changes in the services offered by BT;
- how compliance with the charge controls will be measured;
- the interaction between charge controls and other remedies;
- the notification periods required ahead of price changes; and
- the mechanism for dealing with any future ‘material changes’ by BT to the services covered by the charge controls.

We are imposing new SMP conditions relating to charge controls

Structure of the new Conditions

24.2 The new SMP conditions are specified in the statutory notification, published at Annex 7 to this Statement. We have already set out the main effect of those conditions in the preceding Sections of this Statement but we provide further explanations in this Section.

24.3 The SMP conditions follow a ‘market-by-market’ structure. Specifically:

- SMP condition 5.1 covers relevant products/services falling within the three wholesale TI markets and within the wholesale market for regional trunk segments (we refer to them collectively as the ‘TI services’).
- SMP condition 5.2 covers relevant products/services falling within the wholesale market for AI in the WECLA at bandwidths up to and including 1Gbit/s (we refer to them collectively as the ‘AI WECLA services’).
- SMP condition 5.3 covers relevant products/services falling within the wholesale markets for AI outside the WECLA at bandwidths up to and including 1Gbit/s, and for MI across the UK (we refer to them collectively as the ‘Ethernet services’).
- SMP condition 5.4 covers relevant products/services falling within the retail market for low bandwidth TI (‘Retail analogue services’).

- SMP condition 5.5 covers Accommodation services in all the relevant wholesale markets identified to find that BT has SMP ('Accommodation services').
- SMP condition 5.6 covers relevant Excess Construction Charges ('ECC') in all the relevant wholesale markets identified to find that BT has SMP.

24.4 We will implement the price controls through formulae within SMP conditions which will constrain how BT sets its prices for individual services ('price points') and for groups of services ('baskets'). The formulae mechanics for these charge controls are discussed in more detail later in this Section. They will apply for the duration of the charge controls, which is three years starting on 1 April 2013.

24.5 These controls are summarised in Figure 24.1 below along with the controlling percentage for each control.

Figure 24.1: Summary of the form and level of controls

Basket or group of services	Overall cap	Additional sub-caps and sub-baskets
TI basket	RPI+2.50%	Point of handover services (RPI-0%) – a sub-basket control TI Mobile services - RBS, Netstream 16 Longline and SiteConnect (RPI+2.50%) – a sub-basket control Ancillary services, equipment and infrastructure – (RPI+2.50%) - sub-cap on each charge Sub-cap on all charges (RPI+10%)
AI WECLA services	RPI-RPI on each charge	None
Ethernet basket	RPI-11%	Interconnection services (RPI-11%) – a sub-basket control EAD 1Gbit/s services (RPI-11%) – a sub-basket control Sub-cap on all charges (RPI-RPI)
Retail analogue services basket	RPI+2.50%	Same as TI sub-cap on each charge (RPI+10%)
Accommodation services	RPI-0% on each charge	None
ECC basket	GBCI-0% on each charge	None

Approach to services falling within the scope of the control

- 24.6 Each SMP condition is supported with an Annex listing all of the services which fall into the various baskets, sub-baskets and sub-caps. In addition, SMP Condition 5.6 contains an Annex setting out the start charge adjustments we require BT to make in relation to ECC services.
- 24.7 Figure 24.2 below identifies which SMP conditions captures which groups of specific services that will be subject to each respective control. The definition of the specific services is with reference to BT's Carrier Price List (CPL). The table indicates where within the SMP conditions each of the lists of services is defined.

Figure 24.2: Services within the scope of the charge controls

<i>SMP condition</i>	<i>Groups of services included within the condition</i>	<i>Reference for full list of services</i>
TI services (SMP condition 5.1)	Wholesale low bandwidth TISBO (≤ 8 Mbit/s) – connection and rental; Wholesale medium bandwidth TISBO (> 8 Mbit/s and $\leq 34/45$ Mbit/s) outside the WECLA – connection and rental; Wholesale high bandwidth TISBO ($> 34/45$ Mbit/s and $\leq 140/155$ Mbit/s) outside the WECLA – connection and rental; Regional trunk (all bandwidths) – rental Equipment and infrastructure services; Interconnection services; Ancillary services; and RBS backhaul, NetStream 16 Longline and SiteConnect	Annex to SMP condition 5.1
AI WECLA (SMP condition 5.2)	Wholesale low bandwidth AISBO services (≤ 1 Gbit/s) inside the WECLA	Annex to SMP condition 5.2
Ethernet Services (SMP condition 5.3)	Wholesale low bandwidth AISBO services (≤ 1 Gbit/s) – outside the WECLA – connection and rental; Wholesale above 1 Gbit/s Ethernet services outside the WECLA – connection and rental; Interconnection services; and Ethernet ancillary services (excluding ECCs)	Annex to SMP condition 5.3

Retail analogue services (SMP condition 5.4)	All retail analogue services	Annex to SMP condition 5.4
Accommodation services (SMP condition 5.5)	Access Locate Accommodation Administration Fee Cablelink	Annex to SMP condition 5.5
ECCs (SMP condition 5.6)	All excess construction charges	Annex A to SMP condition 5.6

24.8 As part of its response to the LLCC Consultation, BT submitted a number of corrections and amendments to the service list. These have now been incorporated into the service list. The service list has also been updated to reflect BT's CPL as at 20 February 2013.

We have mandated new starting charges

24.9 We are only implementing starting charge adjustments to services falling within the ECC basket. The details of the start charge adjustments are set out in more detail in Section 22. As a result, SMP condition 5.6 requires the adjustments such that BT will need to reduce its ECC charges. We list at Annex B to SMP condition 5.6 the list of charges ('Starting Charge Adjustment Values') to which the adjustment will apply in the first year of the charge control.

24.10 For all other services falling within the scope of these charge controls, where we have not mandated starting charge adjustments, the relevant price will be the one included in BT's CPL at the point these charge controls come into effect.

24.11 The following wording in paragraph (b) of SMP condition 5.6 gives effect to the starting charge adjustment we are mandating for the services falling within the ECC basket:

"In the First Relevant Year of the charge control, p_0 for a specific product or service shall be the "Starting Charge Adjustment Value" as specified in Annex B to this Condition 5.6".

The charge control formulae

The LLCC Consultation proposals

The basket control

24.12 As noted above, there are three controls on groups of services which we proposed to implement as baskets. These included:

- a basket covering all TI services within the scope of draft SMP condition 5.1 with a controlling percentage of 3.25% (i.e. RPI+3.25%);

- a basket covering all Ethernet services within the scope of draft SMP condition 5.3 with a controlling percentage of -12% (i.e. RPI-12%); and
- a basket covering all Retail analogue services within the scope of draft SMP condition 5.4 with a controlling percentage of 3.25% (i.e. RPI+3.25%).

24.13 In the LLCC Consultation, we proposed to use the following formula in implementing the controls for those baskets.

$$\sum_{i=1}^n \left[W_1 R_i \frac{(p_{1,i} - p_{0,i})}{p_{0,i}} + W_t R_i \frac{(p_{t,i} - p_{0,i})}{p_{0,i}} \right] \leq TRC$$

where:

n is the number of products and services in the specified category (i.e. the basket in question);

$p_{0,i}$ is, save for the First Relevant Year of the control, the published charge made by the Dominant Provider¹⁸³² for the specific product or service, i, at the beginning of the Relevant Year excluding any discounts offered by the Dominant Provider;

$p_{1,i}$ is the published charge after the first change in charge made by the Dominant Provider for the specific product or service, i, in the Relevant Year excluding any discounts offered by the Dominant Provider;

$p_{t,i}$ is the published charge made by the Dominant Provider for the specific product or service, i, at time, t, during the Relevant Year excluding any discounts offered by the Dominant Provider;

R_i is the sum of the revenue accrued during the Relevant Financial Year in respect of the specific product or service, i, and the revenue accrued during the Relevant Financial Year in respect of equivalent products or services provided by the Dominant Provider to itself, calculated to exclude any discounts offered by the Dominant Provider;

W_1 is the proportion of the Relevant Year that the first charge change applies, calculated by the number of days that the charge was in effect and dividing by 365 (366 in a leap year);

W_t is the proportion of the Relevant Year that each subsequent charge, p_t , is in effect, calculated by the number of days that the charge is in effect and dividing by 365 (366 in a leap year); and

TRC is the target revenue change required in the Relevant Year to achieve compliance with [the charge control formula above], calculated by the Controlling Percentage multiplied by the revenue accrued during the Relevant Financial Year.

24.14 We proposed that the Percentage Change for the purpose of the TI Basket, Ethernet basket and Retail analogue basket should be calculated by employing the following formula:

$$C_t = \frac{\sum_{i=1}^n \left[R_i \frac{(p_{t,i} - p_{0,i})}{p_{0,i}} \right]}{\sum_{i=1}^n R_i}$$

¹⁸³² Dominant Provider is defined as BT.

where:

C_t is the Percentage Change in the aggregate of charges for the products and/or services in the specified category (i.e. the basket in question) at a particular time, t , during the Relevant Year;

n is as defined above;

R_i is as defined above;

$p_{0,i}$ is as defined above and

$p_{t,i}$ is as defined above.

24.15 In each basket, we proposed that the Controlling Percentage be defined in accordance with paragraph 24.13 above.

Sub-basket controls

24.16 As set out in Table 10.1 in the LLCC Consultation, we are proposed to impose three sub-basket controls covering:

- TI POH services within the scope of SMP condition 5.1, with a controlling percentage of 0% (i.e. RPI-0%);
- TI RBS, Netstream 16 Longline and Siteconnect services within the scope of SMP condition 5.1, with a controlling percentage of 3.25% (i.e. RPI+3.25%); and
- Ethernet Interconnection services within the scope of SMP condition 5.3, with a controlling percentage of -12% (i.e. RPI-12%).¹⁸³³

24.17 In the LLCC Consultation, we proposed to use the same controlling formulae as described above for these sub-basket controls.

The sub-cap control

24.18 We proposed imposing sub-cap controls for the following specific groups of services:

- TI ancillary services and equipment and infrastructure services within the scope of draft SMP condition 5.1, with a controlling percentage of 3.25% (i.e. RPI+3.25%);
- All TI other within the scope of draft SMP condition 5.1, with a controlling percentage of 10% (i.e. RPI+10%);
- AI WECLA services within the scope of draft SMP condition 5.2, with a controlling percentage of 0% in nominal term, i.e. RPI-RPI¹⁸³⁴;

¹⁸³³ See LLCC Consultation. Table 10.1, page 169-170.

¹⁸³⁴ Given forecast positive price inflation over the charge control period, the RPI-RPI price cap would result price reductions in real terms. If RPI were to exceed 5%, we propose that the price cap instead reverts to RPI-5%.

- All other Ethernet services within the scope of draft SMP condition 5.3, with a controlling percentage of 0% in nominal terms (i.e. RPI-RPI)¹⁸³⁵;
- Accommodation services within the scope of draft SMP condition 5.5, with a controlling percentage of 0% (i.e. RPI-0%);
- ECCs within the scope of draft SMP condition 5.6, with a controlling percentage of 0% relative to a defined Building and Construction Index (i.e. GBCI-0%)

24.19 We proposed in the LLCC Consultation that, in implementing the sub-cap controls, we will be using the following formula:

$$C_t = \frac{(p_t - p_0)}{p_0}$$

where:

C_t is the Percentage Change in charges for the products and services in the sub-basket in question at a particular time t during the Relevant Year;

P_t is the published charge made by the Dominant Provider for the specific product or service prevailing at the end of the Relevant Year, excluding any discounts offered by the Dominant Provider;

P_0 save for the First Relevant Year of the control, p_0 is the published charge made by the Dominant Provider for the specific product or service i at the beginning of the Relevant Year excluding any discounts offered by the Dominant Provider.

Consultation responses

24.20 In relation to the compliance formula, BT asked us to clarify what P_0 means in the first relevant year and to change the definition of P_0 from the beginning of the relevant year to just before the start of the relevant year to allow it to take account of prices changes at the start of the control. BT also suggested that the definitions of W_t and W_1 do not take account of the short first year which could take place under the options we consulted upon.¹⁸³⁶

24.21 CWW noted that the compliance formulae are complex and may lead to unintended consequences.¹⁸³⁷

Our response and conclusions

24.22 We can confirm that, in the LLCC Consultation, we anticipated that the definition of P_0 would have the same meaning as in previous charge controls, and we had understood that this had been correctly understood by BT and others in the past. In the LLCC 2009 BT had correctly applied the compliance formula to the effect that P_0 had been interpreted to mean the period immediately prior to the start of the relevant

¹⁸³⁵ Similarly to AI WECLA services, if RPI were to exceed 5%, we propose that the price cap instead reverts to RPI-5%.

¹⁸³⁶ See BT's non-confidential response to the LLCC Consultation, paragraph 2, page 35.

¹⁸³⁷ See CWW's response to the LLCC Consultation, paragraph 15.30, page 72.

year. However, in response to BT's request and in order to address any ambiguity, we are amending the wording of p_0 as follows:

$p_{0,i}$ is the published charge made by the Dominant Provider for the specific product or service, i , on the day immediately before the beginning of the Relevant Year excluding any discounts offered by the Dominant Provider

- 24.23 We reviewed BT's point relating to the definition of W_t and W_1 in the context of this charge control. We have amended the definition of W_1 and W_t to account for the eventuality of a short first year. The new definitions are:

W_1 is the proportion of the Relevant Year in which the first charge change applies, calculated by the number of days during which the charge was in effect and dividing by the total number of days in the Relevant Year; and

W_t is the proportion of the Relevant Year in which each subsequent charge, p_t , is in effect, calculated by the number of days during which the charge is in effect and dividing by the total number of days in the Relevant Year.

- 24.24 CWW were concerned that the compliance formulae were complex. We discussed the mechanics of the compliance mechanism with them. We looked at how compliance principles work on the basis of a worked example for a typical product, including the use of prior year weights and the carry forward provision. CWW said that the example helped them understand the mechanism and did not raise any further concerns.

- 24.25 We have made an amendment to the definition of R_i such that it is now defined as:

R_i is the Accrued Revenue in the Relevant Year in respect of the specific product or service, i , including in respect of equivalent products or services provided by the Dominant Provider to itself, calculated to exclude any discounts offered by the Dominant Provider

- 24.26 We have also made an amendment to the definition of TRCs such that it is now defined as:

TRC is the target revenue change required in the Relevant Year to achieve compliance with paragraph (a), calculated by the Controlling Percentage multiplied by the Accrued Revenue in the Relevant Year.

- 24.27 The sub-basket controls as described above will now apply to the additional sub-basket control for EAD 1Gbit/s services. Therefore these controls now comprise the three set out in paragraph 24.16 above and additionally Ethernet EAD 1Gbit/s services within the scope of SMP condition 5.3.

- 24.28 Finally, the sub-cap controls will now apply all services within the TI basket and all services in the Ethernet basket. This reflects the extension of these controls from previously applying only to all services *not* captured in a sub-basket or sub-cap control within each respective basket. This extension of these controls is discussed in more detail in Section 19 and Section 20 of this document.

24.29 For clarity, the final controls are set out below.

24.30 The basket controls apply to:

- a basket covering all TI services within the scope of SMP condition 5.1 with a controlling percentage of 2.50% (i.e. RPI+2.50%);
- a basket covering all Ethernet services within the scope of SMP condition 5.3 with a controlling percentage of -11% (i.e. RPI-11%); and
- a basket covering all Retail analogue services within the scope of SMP condition 5.4 with a controlling percentage of 2.50% (i.e. RPI+2.50%).

24.31 The sub-basket controls apply to:

- TI POH services within the scope of SMP condition 5.1, with a controlling percentage of 0% (i.e. RPI-0%);
- TI RBS, Netstream 16 Longline and Siteconnect services within the scope of SMP condition 5.1, with a controlling percentage of 2.50% (i.e. RPI+2.50%);
- Ethernet Interconnection services within the scope of SMP condition 5.3, with a controlling percentage of -11% (i.e. RPI-11%); and
- Ethernet EAD 1Gbit/s services within the scope of SMP condition 5.3, with a controlling percentage of -11% (i.e. RPI-11%).

24.32 The sub-cap controls apply to:

- TI ancillary services and equipment and infrastructure services within the scope of draft SMP condition 5.1, with a controlling percentage of 2.50% (i.e. RPI+2.50%);
- All TI services within the scope of SMP condition 5.1, with a controlling percentage of 10% (i.e. RPI+10%);
- AI WECLA services within the scope of SMP condition 5.2, with a controlling percentage of 0% in nominal term, (i.e. RPI-RPI);¹⁸³⁸
- All Ethernet services within the scope of SMP condition 5.3, with a controlling percentage of 0% in nominal terms (i.e. RPI-RPI);¹⁸³⁹
- Accommodation services within the scope of SMP condition 5.5, with a controlling percentage of 0% (i.e. RPI-0%);
- ECCs within the scope of SMP condition 5.6, with a controlling percentage of 0% relative to the General Building and Construction Index (i.e. GBCI-0%)

¹⁸³⁸ Given forecast positive price inflation over the charge control period, the RPI-RPI price cap would result in price reductions in real terms. If RPI were to exceed 5%, we propose that the price cap instead reverts to RPI-5%.

¹⁸³⁹ Similarly to AI WECLA services, if RPI were to exceed 5%, we propose that the price cap instead reverts to RPI-5%.

Flexibility to deal with any changes in the services offered by BT

24.33 As discussed above, we have set controls by reference to a particular set of products currently offered by BT. However, BT may wish to amend or remove services, or to bring in new services within the duration of the charge controls. We discuss below how we have addressed in the SMP conditions the possibility of BT making such variations to its service offering. We have set out an update on Synchronous Ethernet services in Section 20.

Variations, and new services which wholly or substantially replace existing services, are within the scope of the proposed charge controls

The LLCC Consultation proposals

- 24.34 We set out in the LLCC Consultation that we proposed to define the specific services falling into the scope of these charge controls by reference to BT's price lists. Those lists only include BT's services that we expect to exist when the charge controls commence.
- 24.35 We proposed to deal with potential new services that are not currently on those lists that BT may subsequently launch as replacements or variants of the services specified in the SMP conditions.
- 24.36 Telecoms markets are subject to ongoing product development and innovation. We therefore anticipate that BT may wish to develop products/services that wholly or substantially replace the products/services defined in the Annexes to each SMP Condition.
- 24.37 To reflect that consideration, we included a provision in the draft SMP conditions to deal with this matter. That provision would ensure that, if BT would introduce a new service that wholly or substantially replaces an existing service (using for example a new more efficient technology), the replacement service would fall within the scope of the proposed charge controls. It provided that:

Where the Dominant Provider makes a material change (other than to a charge) to any product or service which is subject to this Condition [xx] or to the date on which its financial year ends or there is a material change in the basis of the Retail Prices Index, paragraphs [charge control paragraphs] shall have effect subject to such reasonable adjustment to take account of the change as Ofcom may direct to be appropriate in the circumstances.

For the purposes of this paragraph, a material change to any product or service which is subject to this Condition [xx] includes the introduction of a new product or service wholly or substantially in substitution for that existing product or service.

- 24.38 We explained that new services that fall within scope of relevant Ethernet or TI basket caps should remain subject to that same overall basket cap for the duration of the charge control period, irrespective of the underlying technology that BT uses to provide those services. We considered that this provision would ensure that BT is incentivised to introduce new more efficient services.

Consultation responses

24.39 BT sought our clarification on its understanding of how the SMP Conditions work with changes in the product list. BT wanted us to confirm:

- that replacement services will use the prior year weights of the service they are replacing subject to this being agreed with Ofcom when the product is withdrawn but that if the replacement product falls outside of the charge controlled products, it should be treated as a withdrawal with no replacement;¹⁸⁴⁰
- that where new products are introduced with enhanced features, these fall out of the control until the next review period;¹⁸⁴¹ and
- products that are withdrawn with no replacement should have a zero weighting immediately after withdrawal otherwise they will have to over comply the control with the other products.¹⁸⁴²

24.40 Following the publication of the LLCC Consultation, Openreach announced a withdrawal from new supply of the WES, WEES and BES services (2.5 Gbit/s and 10Gbit/s variants). BT suggested that this will take effect in August 2013 at the earliest. As set out in Section 13 a number of respondents raised concern over BT's decision to withdraw these services.

24.41 Exponential-e welcomed our proposal to extend the charge control to single-service Ethernet above 1Gbit/s, but it expressed concern that Openreach could, in the light of its announced withdrawal of its legacy higher bandwidth WES and BES products, choose not to supply a single service OSA solution or argue the OSA based solution is a multi-interface capable and therefore able to circumvent the obligations of the charge control.¹⁸⁴³

Our response and conclusion

24.42 We have reviewed BT's understanding of how the SMP conditions work. Its understanding that, where new products are introduced with enhanced features, these fall out of the control until the next review period, is correct. However, we will review on a case by case basis how replacement and withdrawal of services will count towards the basket control.

24.43 We noted in Section 13 that Openreach has indicated that its OSA, OSEA and EBD products will meet the ongoing needs of its customers who will no longer be able to purchase WES, WEES and BES (2.5 Gbit/s and 10Gbit/s variants). In light of this:

- ii) we confirm that EBD is a single-service Ethernet product within the charge control;
- iii) BT is obliged to provide 2.5 Gbit/s and 10 Gbit/s single-service Ethernet access and backhaul; and

¹⁸⁴⁰ See BT's non-confidential response to the LLCC Consultation, paragraphs 6-7, page 36.

¹⁸⁴¹ See BT's non-confidential response to the LLCC Consultation, paragraph 8, pages 36-37.

¹⁸⁴² See BT's non-confidential response to the LLCC Consultation, paragraph 9, page 37.

¹⁸⁴³ See Exponential-e non-confidential response to the LLCC Consultation, Section 10, pages 14-15.

- iv) where BT provides OSA or OSEA (in response to an order for a single service Ethernet circuit that falls into the obligation set out in the preceding subparagraph ii. above) this service falls within the scope of the charge control.

24.44 At the point of withdrawal of these services, BT is required to inform us of the replacement service for the purpose of assessing compliance.

24.45 There has been no change to the wording of the material change condition set out in paragraph 24.36 above following consultation.

Measuring compliance with the charge controls

Compliance will be monitored by calculating a weighted average change in the charges for each basket

The LLCC Consultation proposals

24.46 We proposed to constrain BT's freedom to set charges for the services controlled by the main charge control baskets (and the sub baskets), so that the average charge in each basket at the start of the control year cannot be increased by more than RPI adjusted by the relevant value of X set out in the SMP conditions. RPI (i.e. the controlling value of RPI) is the term used to represent the percentage change in the Retail Prices Index in the 12 months up to May preceding the start of the relevant charge control year (the relevant year). As set out in Section 7 of the LLCC Consultation, we proposed that ECCs would be the exception to this, as we instead proposed using a construction index (GBCI) and not a general inflation index.

24.47 In order to calculate the average change in the prices proposed by BT and to assess BT's compliance with the controls, we needed to determine the appropriate basket weights. Regulators applying this form of control have generally used one of two main methods of calculating these weights – 'prior year revenue weights' or 'current year revenue weights'. We proposed to use the prior year revenues of services in a basket to determine the appropriate weights.

24.48 We also proposed the imposition of a different charge control within the WECLA to the rest of the UK. There are a very limited number of leased lines where one end is in the WECLA and one is outside. BT treated such lines as being within the comparable London area (the CELA)¹⁸⁴⁴ for the purposes of compliance with the previous TI wholesale charge control, and we expected that this would continue on a consistent basis in the future.

Consultation responses

24.49 Level 3, CWW, TalkTalk, Sky and BT all expressed concerns with our proposal to use prior year revenue weights to assess compliance with the basket controls. Full details of the concerns raised are set out in Section 18 of this document.

24.50 BT noted that we proposed that the May RPI index be used for compliance. It indicated it would be "very difficult to implement price changes with suitable notice", therefore the April index should be used instead. However, BT additionally said that

¹⁸⁴⁴ The Central and East London Area.

should the start of the charge control shift, they suggested “using the month which is six months prior to the start date”.¹⁸⁴⁵

24.51 Three respondents commented on our proposal to adopt the GBCI index for the control of ECC services. Level 3, EE and MBNL all disagreed with our proposal. We have discussed this in more detail in paragraphs Section 22 of this document.

24.52 BT sought a number of clarifications on the practical application on compliance:

- on the issue of demonstrating compliance with the non-WECLA control, BT suggested using the volume split for WECLA and non-WECLA revenues by deriving a mid-month view of volumes from its inventory base, or, deriving this from its billing systems;¹⁸⁴⁶ and
- where the charge for shifts and cancellations is linked to the price of another product (i.e. 95% of a connection charge, for example), compliance should be inherent on the product it is linked to being compliant.¹⁸⁴⁷

Our response and conclusions

24.53 Details of our approach to prior year weights is set out in Section 18. In summary, we are adopting a ‘snapshot’ approach for TI rental revenues such that revenue weights would be calculated based on actual rentals at 30 September in the year before the start of the charge control year multiplied by the average price during the period (so 30 September 2012 for the control year starting 1 April 2013).¹⁸⁴⁸ For other products and services the relevant volumes would be the cumulative volumes in the year to 30 September 2012.

24.54 We have included the following explanation in Condition 5.1:

In this Condition 5.1, “Accrued Revenue” means, in any Relevant Year, the revenue deemed to be accrued in that Relevant Year in respect of a specific product or service calculated: (i) in respect of a rental product, by multiplying the volume of rentals as at 30 September preceding the start of the Relevant Year by the average charge (weighted according to the number of days during the Relevant Year on which that charge applied) exclusive of discounts in the Relevant Year; and (ii) in respect each product or service other than a rental product, by multiplying volumes supplied in the 12 months up to and including 30 September preceding the start of the Relevant Year by average actual charges exclusive of discounts in the Relevant Year.

24.55 For Ethernet we are adopting a more hybrid approach as set out below:

- i) For the first year of the control (starting 1 April 2013) the revenue weights will be calculated as forecast volumes per the LLCC model multiplied by average prices over the year to March 2014.

¹⁸⁴⁵ See BT non-confidential response to LLCC Consultation, paragraph 4, page 36.

¹⁸⁴⁶ See BT non-confidential response to the LLCC Consultation, paragraph 19, pages 38-40.

¹⁸⁴⁷ See BT non-confidential response to the LLCC Consultation, paragraph 29, page 41.

¹⁸⁴⁸ We are using 30 September volumes as collection of volume data is a complex process and this is the time when BT already collects volume data for the purposes of producing financial statements.

- ii) For subsequent years, the approach will be the same as for TI with snapshot volumes for rentals and cumulative volumes for connections for the reasons described above. However, because the charge control will only allow BT to cut Ethernet product prices, the maximum notification period it will be subject to for such products will be 28 days. Therefore compliance will be based on volumes at 31 December or up to 31 December in the year prior to the start of the control (i.e. 31 December 2013 for the control year starting 1 April 2014).

24.56 We have included the following explanation in Condition 5.3:

In this Condition 5.3, “Accrued Revenue” means:

(1) in the First Relevant Year, the revenue deemed to be accrued in the First Relevant Year in respect of a specific product or service calculated: (i) in respect of a rental product, by multiplying the forecast volume of rentals in the First Relevant Year as set out in Annex 12 to this Draft Statement by average charges exclusive of discounts in the First Relevant Year; and (ii) in respect of each product or service other than a rental product, by multiplying forecast volumes supplied as set out in Annex 12 to this Draft Statement by average charges exclusive of discounts in the First Relevant Year. Where services are aggregated in the forecast volumes in Annex 12, the aggregated volume forecast will apply to each aggregated product.

(2) in any Relevant Year except the First Relevant Year, the revenue deemed to be accrued in that Relevant Year in respect of a specific product or service calculated: (i) in respect of a rental product, by multiplying the volume of rentals as at 31 December preceding the start of the Relevant Year by the average charge (weighted according to the number of days during the Relevant Year on which that charge applied) exclusive of discounts in the Relevant Year; and (ii) in respect of each product or service other than a rental product, by multiplying volumes supplied in the 12 months up to and including 31 December preceding the start of the Relevant Year by average actual charges exclusive of discounts in the Relevant Year.

24.57 We have considered BT’s point in relation to the appropriate month on which to base the RPI. We agree that it is reasonable to adopt the RPI for the 12 months to 30 September (rather than to 31 May as proposed in the LLCC Consultation) as this is six months prior to the start of the charge control therefore providing BT sufficient time to implement price changes within the appropriate notification periods. We have changed the definition of “RPI” in the charge controls accordingly.

24.58 We have considered responses on the appropriateness of using the GBCI for ECC services recognising that there are alternative measures of inflation that could be used. We have set out our decision in more detail in Section 22 of this document, however, to summarise, we will continue to use the GBCI for the control of ECCs. Similarly to the RPI, we believe it is reasonable to adopt the September (rather than May) GBCI for the reasons set out in the paragraph above, and have adjusted the definition of “GBCI” accordingly.

24.59 We have reviewed the methodologies that BT proposed for the WECLA and non-WECLA volume and revenue split. We think that the inventory approach suggested

by BT meets our requirements for compliance purposes. This will consist of the following steps.

- iii) BT will use its inventory system to determine circuits by postcode to get the rental volumes within WECLA at each month end (the volumes will be multiplied by price per circuit type to get revenues for WECLA).
- iv) This allows for the revenue split between WECLA and non-WECLA.
- v) The same product percentage split will be then applied to other charges, such as connections.

- 24.60 Openreach confirmed that its system collects each circuit local end by postcode so it will be able calculate which circuits comply with our definition of the WECLA area. For avoidance of doubt, we require Openreach to use month end volumes for the calculation.
- 24.61 A more detailed description of how we have defined which circuits are in WECLA is set out in Section 11 of this document for TI services and in Section 12 and 13 for Ethernet services.
- 24.62 BT argued that where a charge is linked to another product (e.g. it is a percentage of another charge), the linked charge complies automatically if the main charge is part of the control. However, compliance is only automatic if the main charge complies and the linking percentage between the two charges is fixed. The percentages have been stable in the past, however if the percentage moves BT would be able to raise the price of a linked product and this would not be captured if we only assess compliance on the main charge. We do not intend to change compliance where a charge is linked to another product, in other words compliance will need to be demonstrated both on the main charge and the linked charge.

Certain discounts will not contribute towards BT meeting its charge control obligations

The LLCC Consultation proposals

- 24.63 In the LLCC Consultation our proposal that none of the volume, term and geographic discounts offered by BT would count towards meeting its charge control obligations. Specifically, within the charge control formula, the prices which BT needs to include when assessing compliance are prices excluding any discounts, reflecting the published price list.

Consultation responses

- 24.64 The majority of stakeholders who responded on the treatment of discounts in the charge controls supported our proposal to not allow discounts to count towards meeting the charge control obligations.
- 24.65 BT disagreed with our proposal. We explain and deal with BT's concerns in Section 18 but, in summary, BT argued:
- we should allow geographic discounts as the level of costs in some geographic areas can be demonstrated to be lower than elsewhere within the basket;

- the use of a geographically averaged price will be inefficient if this encourages inefficient market entry; and
- we should allow term discounts as these are demanded by customers and therefore not allowing them to count toward compliance would penalise BT when they are trying to meet customer requirements.¹⁸⁴⁹

Our response and conclusions

24.66 Having carefully considered BT's concerns, we have concluded, in line with the LLCC Consultation proposals, that allowing geographic discounts to count towards compliance may incentivise BT to comply with the charge controls by concentrating discounts in areas where it faces more competition. Term discounts are likely only to be adopted by BT where they are self-financing irrespective of whether customers demand them or not.

24.67 We have therefore maintained our position as set out in the LLCC Consultation that none of geographic, term or volume discounts will be allowed to count towards compliance. We have explained this in more detail in Section 18. For the avoidance of doubt, we note that special offers, by which we mean a temporary price reduction for a particular product or service, applicable to all customers on a non-discriminatory basis, which is stated to apply for a limited and predefined period and where the price immediately on expiry of that period is no higher than the price immediately before the start of that period, will be allowed to count towards compliance.

BT will be allowed to carry over differences in the average charge for a basket to the next charge control year

The LLCC Consultation proposals

24.68 For the TI, Ethernet and Retail Analogue baskets we proposed that BT would be able to carry over any price reductions it makes in excess of the requirements of the charge controls for that year.

24.69 We proposed that, if BT's average charge for these baskets at the end of the Relevant Year is lower than required by the associated RPI-'X' constraint, it would be able to carry over the difference into the next charge control year. If so, this would mean that the benchmark for assessing BT's compliance with the control in the following year would be the level of charges BT was required to achieve, rather than the level it actually achieved. Conversely, if its average charge is higher than the required level, it would have to take the excess into account in the following year.

24.70 The use of a mechanism to correct for prices higher than those assumed by the charge control formula does not imply that BT should set prices which is expects will be above those assumed by the charge controls. Indeed, to do so would be a breach of its charge control obligations which require it to take all reasonable steps to secure that charges and resulting revenues are within the controlling percentage. What the mechanism does is to protect both BT and the customers of the charges controlled from the impact of fluctuations in the factors included in the charge control formula resulting in a difference between forecast and actual compliance with the control. The mechanisms allow for corrections to be applied without the need for additional

¹⁸⁴⁹ See BT non-confidential response to the LLCC Consultation, paragraphs 4-15, pages 12-14.

enforcement in cases of under-compliance, and for BT not to be penalised for over-compliance (i.e. making price reductions earlier than it might otherwise).

Consultation responses

- 24.71 BT considered the application of the carry forward provision should be extended to apply to sub-baskets. Currently the provision applies to the main basket controls only.¹⁸⁵⁰

Our response and conclusion

- 24.72 We have assessed the advantages and disadvantages of applying the carry forward provision to the sub-baskets within the main baskets.
- 24.73 We consider that there are potential benefits to customers from price reductions being made sooner than implied by the charge controls to increase the merits of these proposals. We also agree that BT should not be penalised for making price reductions sooner rather than later. However, we have reservations about the level of complexity this may introduce to the compliance regime, further reducing the stakeholders' understanding of the compliance process. We also note that a key aim of sub-baskets is to have an additional level of constraint in respect of certain groups of services.
- 24.74 The conventional form of sub-basket controls limit the flexibility of a smaller group of services but tend to have a wider control than the overall basket control, for instance, the sub-basket X is not normally as low as the overall basket X.
- 24.75 In the Ethernet basket, unusually, however, we have set the sub-basket control at the same level as the main basket control for the both the interconnection and EAD 1Gbit/s sub-baskets further narrowing the pricing level flexibility of these services.
- 24.76 The absence of a carry forward provision combined with the identical controls for the overall basket and these two sub-baskets results in a tighter control than we intend to apply. For instance, if BT were to reduce EAD 1Gbit/s prices by more than the level of the control in year one, over the three years of this charge control it would have over-complied with the sub-basket control. This is likely to act as disincentive to BT to reduce EAD 1Gbit/s prices by more than the level of the sub-basket control in years one or two, something it may wish to do to encourage migration in the first two years of this charge control. It is not our intention to discourage BT from reducing prices early in the charge control for these services.
- 24.77 We have therefore decided that, notwithstanding the added complexity this will bring to the compliance process, in the case of both the interconnection and EAD 1Gbit/s sub-baskets only, for the reasons set out above the carry forward provision will apply. We have now included the following working in Condition 5.3 to deal with this change:

Where the Percentage Change in any Relevant Year is less than the Controlling Percentage, then for the purpose of each of: (i) the Ethernet Services Basket specified in paragraph (a); (ii) the Ethernet Interconnection Services Sub-basket specified in paragraph (e); and (iii) the EAD 1Gbit/s Services Sub-basket specified in paragraph (f), the Controlling Percentage for the following Relevant Year shall be

¹⁸⁵⁰ See BT non-confidential response to the LLCC Consultation, paragraph 11, page 37.

determined in accordance with paragraph (d), but increased by the amount of such deficiency.

Where the Percentage Change in any Relevant Year is more than the Controlling Percentage, then for the purpose of each of: (i) the Ethernet Services Basket specified in paragraph (a); (ii) the Ethernet Interconnection Services Sub-basket specified in paragraph (e); and (iii) the 1Gbit/s EAD Services Sub-basket specified in paragraph (f), the Controlling Percentage for the following Relevant Year shall be determined in accordance with paragraph (d), but decreased by the amount of such excess.

BT will be able to change charges at any time, and the formula takes into account the timing of those changes

24.78 We have designed the charge control formula so that it takes into account the timing of any price changes BT makes. As set out above, the SMP conditions setting out the charge controls would require BT not to increase charges for a basket of services by more than the RPI-X in each year. This means that BT would have a degree of flexibility within the basket (subject to any sub-caps) over the changes it applies to individual services. The basket requires that prices on average do not increase by more than the basket control. BT can also change charges for services at any time during a particular year. However, the charge control formula explicitly takes into account *when* changes to charges occur. It is also sufficiently flexible to take account of increases and / or decreases including time limited special offers.

24.79 If BT were to introduce a charge reduction on the last day of a particular relevant year, it would be better off (in revenue terms) relative to a charge reduction on the first day of the formula year¹⁸⁵¹. Therefore, the compliance formula outlined above and used within SMP conditions 5.1, 5.3 and 5.6 takes the timing of charge changes into account¹⁸⁵². If BT were to delay a decrease (relative to making any charge adjustments on or of the anniversary of the control coming into force in each subsequent year), it would need to reduce charges by a larger amount later in the relevant year to achieve compliance with the basket control. We note that time limited special offers are allowed to count towards compliance. Please see Section 18 for more details.

¹⁸⁵¹ For example, assume that BT changes its charges for two services, say by 10%, on the first day of the Formula Year and kept them at that level for the whole year. Other things being equal, then these charge reductions should result in its revenues declining by 10% (relative to the prior year). However, if BT delayed a reduction in the charges by six months and introduced the reduction in the second part of the year, then BT could be better off in revenue terms as it would have a six month period where charges were unchanged and only a six month period where charges were 10% lower. Other things being equal, this would result in BT's overall revenues would be 5% lower relative to the prior year.

¹⁸⁵² The formula calculates the percentage reduction for that service as a weighted average of the changes in charges (relative to the start charge for the Formula Year). The weights applied would be based on the duration of the Formula Year a particular charge was applicable. For example, a charge that applied for half a year (182 days) would have a c.50% weight (182/365). So, if the basket requirement were to decrease charges by, say, 10% and BT kept charges unchanged for six months, then it would need to decrease charges by 20% in the final part of the year to achieve the required reduction in charges for that Formula Year. In this instance, the calculated charge reduction would be: 50% x (0% price change) + 50% x (20% price change) = 10%.

Provision of compliance data

The LLCC Consultation proposals

24.80 In the LLCC Consultation, we proposed that BT should record, maintain and supply to Ofcom in an electronic format, no later than three months after the end of each Relevant Year, the data necessary for Ofcom to monitor compliance with the charge controls (as described in more detail within the ‘General Provisions and interpretation’ section of each of the SMP conditions).

Consultation responses

24.81 BT requested an ex-post “sign-off” from Ofcom to formally verify charge controls are being met one month after compliance data is submitted.¹⁸⁵³

Our response and conclusions

24.82 We recognise BT’s request for us to formalise the compliance data they submit. We will not be adopting this policy. It is up to BT to demonstrate compliance with its charge control obligations.

The control works alongside other remedies

Non-discrimination

24.83 We have imposed an ex-ante obligation on BT not to discriminate unduly in the provision of wholesale services for which it has been found to have SMP.

24.84 Therefore, in meeting its charge control obligations, BT would still be required to ensure that each and every charge does not discriminate unduly in favour of particular companies or parties.¹⁸⁵⁴

Accounting separation and cost accounting

24.85 We are imposing amendments to the current ex-ante financial obligations on BT. We will require BT to prepare and publish financial information in respect of the relevant wholesale AISBO and TISBO and trunk services in the markets in which Ofcom finds BT has SMP, in order for it to demonstrate its compliance with its non-discrimination obligations. This is set out in more detail in Section 16 of this document. The financial information also helps enable Ofcom make determinations on specific charges or to assess whether BT has breached competition rules. The basis of preparation of this financial information is set out within BT’s Accounting Documents and as expanded within its secondary accounting documents available on BT’s website.¹⁸⁵⁵

24.86 Given the charge control obligations, we require regulatory reporting to be capable of providing reliable data in respect of each wholesale service within the leased line markets in which BT has been found to have SMP.

¹⁸⁵³ See BT non-confidential response to the LLCC Consultation, paragraph 34, page 41.

¹⁸⁵⁴ Specifically, BT “shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters concerned with Network Access.”

¹⁸⁵⁵ <http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/index.htm>

BT needs to follow the required Notice period for changes to charges

LLCC Consultation proposals

24.87 We proposed imposing requirements on BT relating to the notification period for changes to any charges (for services provided by BT within the markets in which it has been found to have SMP), such that there should be:

- 28 days' notice for prices, terms and conditions relating to new service introductions;
- 28 days' notice for price reductions and associated conditions (for example conditions applied to special offers); and
- 90 days' notice for all other changes to prices terms and conditions.

24.88 Given the previous charge controls expired in October 2012, we considered whether a shorter than 90 days' notice period is appropriate for implementing the new controls.

24.89 In assessing this issue, we balanced the need for there to be sufficient time for industry to adapt to new prices (e.g. for business planning and implementing new charges in downstream contracts), with the need to ensure that the efficient charge changes can be made as quickly as possible, especially given that the first period of the control may be shorter than a year depending on the start date of the charge control.

24.90 We proposed to allow the first charge changes made under the new controls to be reduced to 28 days' notice. This timing would enable charges to be adjusted more quickly. We recognised that this is significantly shorter than the 90 day period. In reaching this view, we have taken into account that the industry will be able to anticipate possible new charges through the consultation process.

Consultation responses

24.91 Both CWW and Level 3 supported the reduced notification period of 28 days for price changes to allow the charge controls to come into affect sooner. However, this is subject to the proposed price changes BT will make. CWW suggest "If we [CWW] have the benefit of seeing Ofcom's EU consultation proposals that will give us extra time to prepare for a shorter 28 day notice period once the final decision is made".¹⁸⁵⁶

24.92 BT requested an eight week period for implementation of the charge controls following our final decision. This is to allow for internal governance of price changes to take place in addition to the 28 day price notification period.¹⁸⁵⁷

24.93 BT also asked us to confirm the notification period for price increases of 90 days will not to apply price increases following special offers reverting back to a higher price.¹⁸⁵⁸

¹⁸⁵⁶ See CWW response to the LLCC Consultation, paragraph 15.31, page 72.

¹⁸⁵⁷ See BT non-confidential response to the LLCC Consultation, paragraph 12, page 37.

¹⁸⁵⁸ See BT non-confidential response to the LLCC Consultation, paragraph 13, page 37.

Our response and conclusions

- 24.94 In response to CWW and Level 3's response, we can confirm that, as is normal practice, the draft Statement will be published when we notify our statement to the EC.
- 24.95 BT requested an eight week period for implementation of the charge control. We endeavour to give BT sufficient time to prepare for start of the charge control, however we would not delay the start of the control to allow for the full eight week period requested. We note BT will have been able to use the consultation period with EC to initiate the necessary internal governance processes in the interest of notifying price changes sooner.
- 24.96 As clarified in condition 7.4, we confirm that the 28 day notice period will apply to special offers.

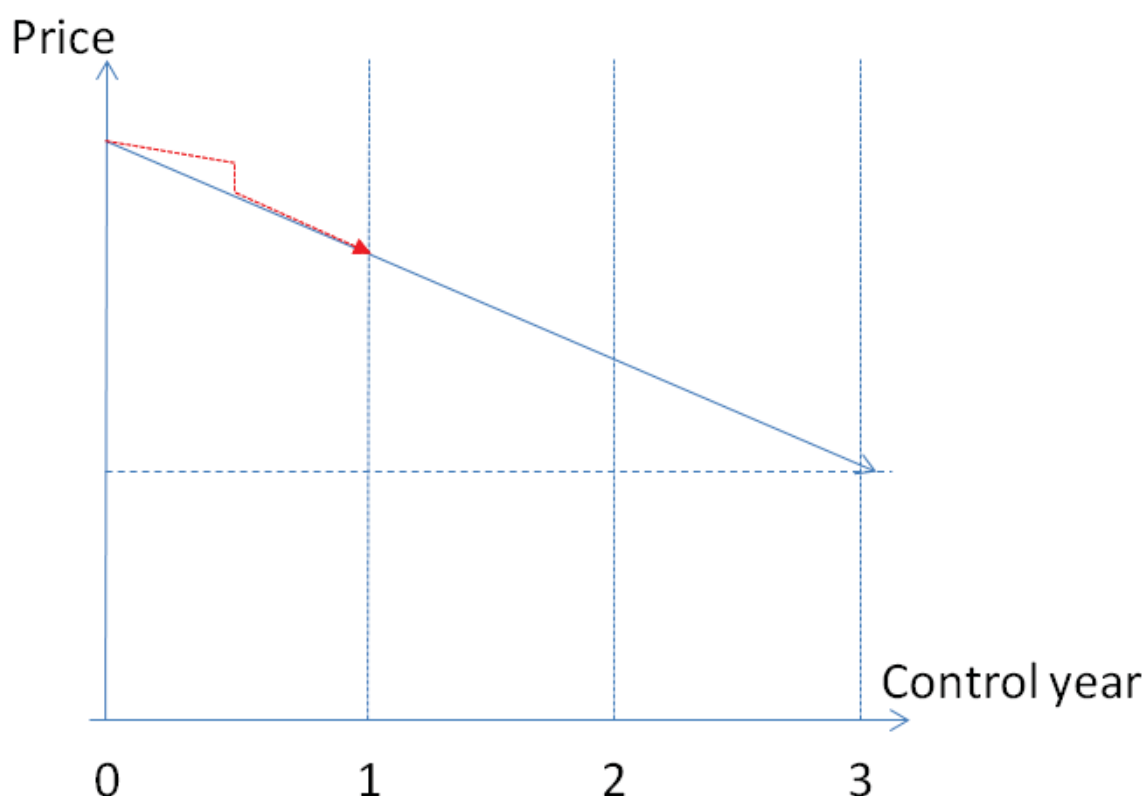
We include provisions concerning 'material changes' to charge controlled services

- 24.97 As part of our SMP conditions setting out the charge controls, we have included general provisions related to material changes that could impact on the effectiveness of the charge controls. These provisions, which are included in each of the SMP conditions, cover any material changes (other than to a charge) including:
- a material change to any product or service (which can include the introduction of a new product or service wholly or substantially in substitution for that existing product or service);
 - the date on which BT's financial year ends; and
 - the basis of the Retail Prices Index.
- 24.98 We would give regulatory effect to such changes by giving a direction under these conditions, following any consultation under the relevant procedures under the Act.

Our approach to reflect the impact of a deferred start of the proposed charge controls

The LLCC Consultation proposals

- 24.99 The previous charge controls expired on 30 September 2012. In the LLCC Consultation, we put forward two options to reflect the impact of a deferred start to these charge controls.
- 24.100 The first option would have required that charges would revert immediately to the levels assumed within the proposed charge controls to allow a smooth path between current charges and those allowed at the end of the period. This is illustrated by Figure 24.3 below, which assumes that prices in the interim period (the dotted line) diverge from those which we would eventually impose in our decision later on.

Figure 24.3: Correcting prices to reflect the difference during an interim period

24.101 In practice, the illustration in Figure 24.3 above is not an accurate reflection of how prices change over time. BT Wholesale and Openreach tend to change prices irregularly – most commonly once a year. Therefore, the best correction would be to ensure that prices match the above path at the end of the first year and during each year thereafter.

24.102 The second option was to implement three year charge controls commencing on the date of publication of our decisions. We stated that we would choose this option to reflect a lengthy interim period, or if the charges implemented by BT Wholesale and Openreach in this period materially differ from our expectations.

Consultation responses

24.103 TalkTalk, CWW, Virgin, EE, UKCTA, Verizon, Level 3 and Telefonica all expressed concern with Ofcom’s ability to impose concurrent charge controls and build in the necessary safeguards to bridge any potential gaps in the future. Stakeholders were concerned with the interim arrangements in place, expressing dissatisfaction with the need to seek voluntary commitments from BT.

24.104 TalkTalk expressed concern about the “limited impact” of the interim prices compared with what prices could have been if the charge came into effect on time. TalkTalk noted “[A]ssuming a six month interim period BT’s external AISBO revenues will be about £13m¹⁸⁵⁹ higher than would have been allowed under the charge control”.¹⁸⁶⁰

¹⁸⁵⁹ External AISBO revenues in 2011/12 were £280m (see RFS p51). Assuming that the delay is six months when there should have been a 9% reduction but there was no reduction means that BT’s revenue is about £24m higher ($= £280 \times 9\% \times 6 / 12$) than it should have been.

¹⁸⁶⁰ See TalkTalk non-confidential response to the LLCC Consultation, page 52, paragraph 6.2.

TalkTalk additionally re-iterated its concerns that the interim arrangements appeared to keep prices constant and not at RPI-7% which would be consistent with the previous charge controls.¹⁸⁶¹

24.105 Verizon expressed its disappointment at the interim arrangement suggesting “[I]n relation to Ethernet services, BT appears to be reducing Ethernet prices only for niche or rarely used products (e.g. WES 155 and 622), whereas it is making no changes for products where there is material demand, such as EAD 10 and 100”.¹⁸⁶²

24.106 EE and MBNL asked us for clarification over how quickly the new charge controls will come into force, and for how long.¹⁸⁶³ CWW noted the prices at the end of Year one should be the same as if the charge controls had come into effect on time.¹⁸⁶⁴

24.107 Both UKCTA and Verizon argued we should remove the expiry date associated with charge controls. UKCTA “proposes that Ofcom whilst modelling the control on a three year adoption does not explicitly include an end date for the controls enabling them to continue if necessary until the new controls or other remedies take effect”.¹⁸⁶⁵

24.108 EE and MBNL suggested “Ofcom should consider whether it should build in potential interim arrangements into the SMP Conditions up front which it could invoke if required at the end of the proposed charge controls. This would provide greater certainty for all parties than the current approach of seeking voluntary undertakings from BT”.¹⁸⁶⁶

24.109 Virgin argued that, where gaps between the end of the last control and the start of the next control arise, Ofcom should consider the imposition of more generic pricing obligations such as including charges within the fair and reasonable access condition and applying a cost orientation obligation to all services within a market.¹⁸⁶⁷

Our response and conclusions

24.110 Following the decision to re-base our data to 2011/12 and the length of the delay to the publication of this Statement, we have decided to move the start date of the charge controls from 1 October 2012 to 1 April 2013. The charge controls will run for no longer than three years.

24.111 In relation to CP’s concerns over the potential gap between charge controls, we first note that, for SMP determinations made after 25 May 2011, section 84A(3) of the Act generally requires (subject to limited exceptions) markets subject to an SMP determination, must be reviewed within three years. This requirement reduces the risk of a regulatory gap. Additionally, we consider that a three year period for our forward look and for the controls themselves is appropriate in these markets given their dynamic nature (in terms of decline in relation to some products and rapid growth for others). We do not consider it to be appropriate, as Verizon and UKCTA suggest, to remove the expiry date of the charge controls within the SMP conditions.

¹⁸⁶¹ Email from TalkTalk – 26 October 2012.

¹⁸⁶² See Verizon non-confidential response to the LLCC Consultation, page 3.

¹⁸⁶³ See EE and MBNL combined non-confidential response to the LLCC Consultation, page 19.

¹⁸⁶⁴ See CWW response to the LLCC Consultation, paragraph 15.31, page 72.

¹⁸⁶⁵ See UKCTA response to the LLCC Consultation, page 28.

¹⁸⁶⁶ See EE and MBNL combined non-confidential response to LLCC Consultation, page 26.

¹⁸⁶⁷ Virgin non-confidential response to the LLCC Consultation, page 26.

This would not be consistent with the period we have considered as appropriate in these markets, and nor do we consider it necessary given the new requirements in relation to reviewing SMP determinations.