Section 17

Form and duration of the 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;[1351] 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.[1352] 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.[1353]

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

[1351] 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 22 of this Statement.

[1352] See paragraph 2.45 of the LLCC Consultation. Having considered consultation responses, the policy objectives – derived from our statutory duties – we have sought to balance in relation to the charge controls we are imposing remain consistent with those set out in the LLCC Consultation and are set out in Section 2 of this Statement.

[1353] 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.

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 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.[1354] 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.[1355]

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 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

[1354] See LLCC Consultation, Section 8.

[1355] 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.

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 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.[1356]

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.[1357]

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."*[1358]

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.[1359] 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*".[1360] It concluded that it was important to maintain *"consistency between the indexation of the price control and the basis for establishing the allowed return".* [1361] 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 capital[1362]. 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

[1356] 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.

[1357] See paragraph 4.9 of the WBA CC Statement:
http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf

[1358] 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

[1359] Details of Ofgem's RPI-X@20 review can be found here:

http://www.ofgem.gov.uk/Networks/rpix20/Pages/RPIX20.aspx

[1360] See paragraphs 5.9 of the consultation document:
http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/RPI-X@Recommendations.pdf

[1361] and paragraphs 5.3 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

[1362] See Annex 7 of the LLCC Consultation.

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.

17.14 We referred to how we have recently imposed a cap on the level that Royal Mail can charge for second class stamps[1363] and had proposed a cap on the prices for sending large letters and packets,[1364] 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, EE and MBNL, Virgin 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.[1365] 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.[1366] 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.[1367]

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

[1363] 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

[1364] See paragraphs 3.19 and 3.20 of the consultation document: http://stakeholders.ofcom.org.uk/consultations/postal-service-letters-packets/?a=0

[1365] See EE and MBNL non-confidential response to the LLCC Consultation, page 25.

[1366] See BT non-confidential response to the LLCC Consultation, paragraph 3, page 9.

[1367] See BT non-confidential response to the LLCC Consultation, paragraphs 3-4, pages 9-10

government. It additionally cited the Court of Appeal decision to uphold the use of CPI when it was challenged for the use of pensions as evidence that CPI is a more appropriate measure of inflation than RPI.[1368]

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. [1369]

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. [1370] 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.[1371] 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.

[1368] See Verizon non-confidential response to the LLCC Consultation, pages 14-16.

[1369] See Level 3 non-confidential response to the LLCC Consultation, page 19.

[1370] 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.

[1371] 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. Our model is based on RPI. To the extent that 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 neutral. 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.

17.29 In light of the above, and having considered the LLCC Consultation responses, we remain of the view that the RPI-X form of charge control we are imposing best meets the policy objectives we have sought to achieve, as set out in Section 2.

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.[1372] 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 our 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.

[1372] 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.

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.[1373] 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. [1374]

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 forward-looking period adopted for the market review.

[1373] See BT non-confidential response to the LLCC Consultation, paragraph 5, pages 10.

[1374] 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 only the summary of our principles below and discuss how these steps have been applied in our modelling in Sections 19 and 20 below.[1375] Our proposed approach to determining base year costs

[1375] 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.

(step 2) 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-optimise 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 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.[1376] 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.[1377] 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.[1378]

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".[1379]

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.

[1376] BT publishes its financial statements on its website and they are available at: http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/index.htm

[1377] See CWW response to the LLCC Consultation, paragraph 2.3, page 4.

[1378] See Level 3 non-confidential response to the LLCC Consultation, page 5 and page 20.

[1379] 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.[1380] 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. [1381]

- 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.[1382]

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).[1383] 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

[1380] 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.

[1381] An alternative to CCA would be HCA convention, where assets are valued and depreciated according to their historical purchase cost.

[1382] 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.

[1383] 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.[1384] 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.[1385]

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, 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

[1384] The Ofcom publications relating to the WLR LLU CC 2009 are available here: http://stakeholders.ofcom.org.uk/consultations/wlr/

[1385] 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.[1386] Therefore, we requested BT to provide information on the disaggregation of costs between the WECLA and the rest of the UK.[1387]

18.42 Both BT Wholesale and Openreach confirmed that there are cost differences between the WECLA and the rest of the UK[1388] and we proposed to use these geographically disaggregated costs.

Consultation responses

18.43 BT agreed with our approach to use geographically disaggregated cost data.[1389] 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.[1390]

18.47 If SLA/SLG costs are included within the cost stack for the purposes of modelling 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.

[1386] 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.

[1387] BT response to S.135 Notice of 1 July 2011.

[1388] BT Wholesale response to S.135 Notice dated 21 May 2012 [✂] and Openreach response to S.135 Notice dated 14 February 2013 [✂].

[1389] BT non-confidential response to the LLCC Consultation, paragraph 1, page 12.

[1390] http://stakeholders.ofcom.org.uk/consultations/wlr-cc-2011/

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. 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.[1391]

Our response and conclusions

18.50 The costs associated with SLAs and SLGs are 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.[1392] We consider that even an efficient operator would need to make some SLA 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 adjustments to the existing level of costs 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.[1393]

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.

[1391] See CWW response to the November BCMR Consultation, page 1.

[1392] See BT response to S.135 Notice of 28 September 2012, [✂].

[1393] 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

- **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.

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 Determination[1394] 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.

[1394] 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.[1395]

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.[1396]

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

[1395] 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.

[1396] 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.[1397]

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:

[1397] 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

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.[1398]

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.

[1398] 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 6.9% 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).[1399]

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.[1400]

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.[1401] Large common costs are a feature of the leased lines services BT provides.[1402] In choosing the appropriate benchmark against which to assess whether

[1399] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.74-5.79.

[1400] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.78.

[1401] As set out above, our other aims of promoting productive efficiency and dynamic efficiency guide our general preference for glide paths.

[1402] 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 Appeal[1403] and the PPC Judgement[1404] 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.

[1403] 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

[1404] 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;
- how to treat discounts in assessing compliance with charge control basket(s); and;

18.125 We explain our approach to these issues below.

Prior year weights

<u>The LLCC Consultation proposals</u>

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 a 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'.[1405] 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.[1406]

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

[1405] 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.

[1406] 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.[1407]

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.[1408] 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.[1409]

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*",[1410] 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

[1407] See Level 3 non-confidential response to the LLCC Consultation, page 20.

[1408] See CWW response to the LLCC Consultation, paragraphs 14.1-14.16, pages 62-65.

[1409] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.71-5.73, pages 49-50.

[1410] 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 control[1411] but considered that their use was not appropriate for the Ethernet basket control.[1412] 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.[1413]

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.[1414] 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.[1415]

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.[1416] 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 millions[1417] 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

[1411] See BT non-confidential response to the LLCC Consultation, paragraph 1, page 12.

[1412] See BT non-confidential response to the LLCC Consultation, paragraphs 15-20, pages 20-21.

[1413] The LLCC Consultation, paragraph 6.107

[1414] The LLCC Consultation, paragraph 6.109.

[1415] See BT non-confidential response to the LLCC Consultation, paragraph 17, page 20.

[1416] See BT non-confidential response to the LLCC Consultation, annex 1, page 52.

[1417] Openreach response to S135 Notice of 14 February 2013 [✂]

- using prior year weights with an adjustment using the LLCC model forecasts of the current year volumes.[1418]

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:

i) using current year weights;

ii) 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);

iii) 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;

iv) 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

[1418] See BT non-confidential response to the LLCC Consultation, annex 1, page 51-52.

v) 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 desirable 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 rental volumes at 30 September in the year before the start of the charge control year multiplied by the average price during the 12 months prior to the start of the charge control year so 30 September 2012 for the control year starting 1 April 2013.[1419] 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.

[1419] 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 2013.

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).[1420]

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.[1421] In many markets this is likely to be BT itself, allowing it to undercut competitors in downstream markets.[1422]

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. On the basis of this analysis we noted that, for the geographic markets where we have proposed SMP, the underlying

[1420] 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.

[1421] By volume discounts we referred to unit prices which vary with the number of circuits (of given bandwidth) purchased.

[1422] See paragraphs 10.88, 11.146 and 12.104 of the June BCMR Consultation.

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".*[1423]

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 we considered that they should be self-financing. Therefore, we proposed to allow BT

[1423] Page 10, BT response to the BCMR CFI: http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-inputs/responses/BT.pdf

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.[1424]

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.[1425]

[1424] We noted that the onus remains on BT to show that its discount schemes are not unduly discriminatory.

[1425] 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.[1426] 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.[1427]

Term discounts

18.180 In addition, BT argued that term discounts should count towards basket compliance.[1428] 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

[1426] See BT non-confidential response to the LLCC Consultation, paragraphs 9-11, page 13

[1427] See BT non-confidential response to the LLCC Consultation, paragraph 8, page 6 and paragraphs 5 to 8, pages 12-13.

[1428] 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 UKCTA[1429], CWW[1430], TalkTalk[1431], Sky[1432], Colt[1433] and EE and MBNL[1434] 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.[1435]

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.[1436] 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.[1437]

[1429] See UKCTA response to the LLCC Consultation, pages 18-20.

[1430] See CWW response to the LLCC Consultation, page 67.

[1431] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.64 to 5.70, pages 48-49.

[1432] See Sky non-confidential response to the LLCC Consultation, paragraphs 52 to 58, pages 12-13.

[1433] See COLT non-confidential response to the LLCC Consultation, section 3.2, pages 8-9.

[1434] See EE and MBNL non-confidential response to the LLCC Consultation, page 26.

[1435] See BT non-confidential response to the LLCC Consultation, paragraph 1, page 12.

[1436] 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.

[1437] 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".[1438]

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.

[1438] See UKCTA response to the LLCC Consultation, page 20.

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 to allow BT to offer term discounts, but not to count term discounts in assessing compliance under charge control caps.[1439]

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 to 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.

18.199 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

[1439] We noted that the onus remains on BT to show that its discount schemes are not unduly discriminatory.

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.

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+2.25%

19.4 We will charge control TI services within a single basket (TI basket), capped at RPI+2.25%. This control has changed from RPI+2.50% as set out in the draft Statement following the announcement of the Budget 2013 by the Chancellor resulting in a change of the tax rate used in our WACC calculation. 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.[1440]

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.

[1440] 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 controls[1441]

Services within scope	Basket cap	Sub-cap and sub-basket constraints
Connection and rental charges for: Wholesale low bandwidth TISBO (up to and including 8Mbit/s) Wholesale medium bandwidth TISBO (above 8Mbit/s up to and including 45Mbit/s) outside the WECLA Wholesale high bandwidth TISBO (above 45Mbit/s up to and including 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+2.25%	Point of handover services (sub-basket set at RPI-0%) RBS, Netstream 16 Longline and SiteConnect (sub-basket set at RPI+2.25%) Ancillary services, equipment and infrastructure (sub-cap set at RPI+2.25% 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

[1441] 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.[1442] 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 Ethernet services. 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 45Mbit/s) outside the WECLA – connection and rental (standard maintenance and enhanced maintenance);
- wholesale high bandwidth TISBO (above 45Mbit/s up to and including 155Mbit/s) outside the WECLA – connection and rental (standard maintenance and enhanced maintenance);

[1442] 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 Consultation,[1443] 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.

[1443] 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.[1444] 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 Consultation[1445]

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%	• 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 and including 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 competitors[1446]. 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

[1444] See paragraphs 7.62 to 7.179 of the June BCMR Consultation.

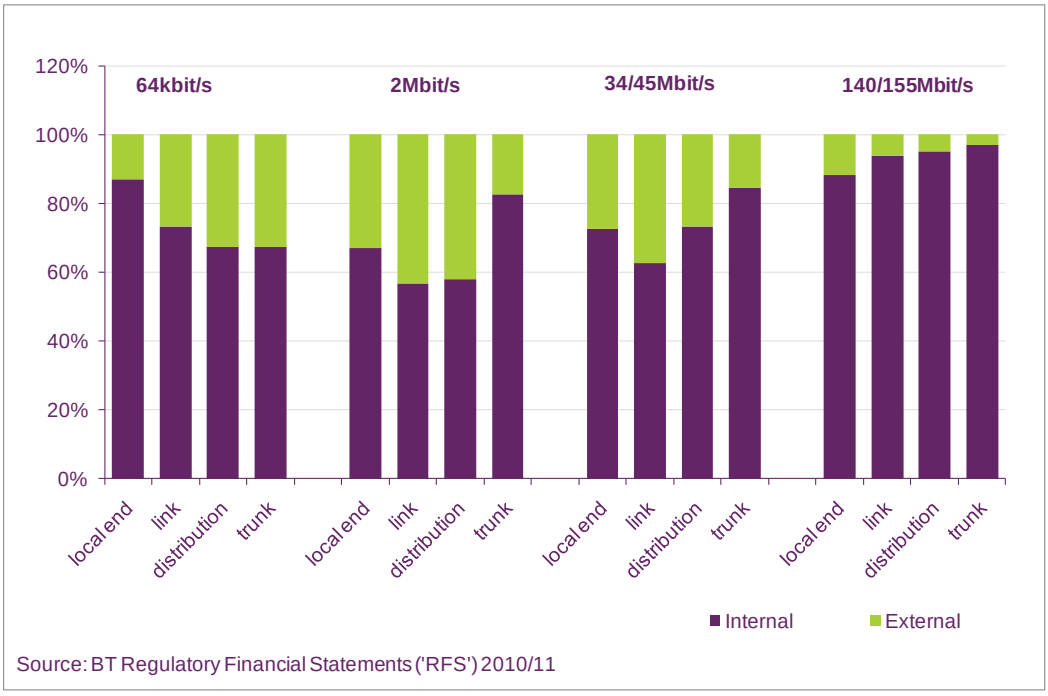
[1445] See Tables 48, 51 and 56 in Section 7 of the June BCMR Consultation.

[1446] 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.

circumstance, BT may face an incentive to concentrate price reductions on those 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



Source: BT Regulatory Financial Statements ('RFS') 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.[1447] 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

[1447] See paragraph 10.104 of the June BCMR Consultation.

incentive to set prices and recover common costs efficiently. In contrast, if we were 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 appropriate for BT to have some limited flexibility in how 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.[1448] 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.[1449]

19.28 In the June BCMR Consultation, we proposed to deregulate national trunk routes, the market for which we proposed to be effectively competitive.[1450] 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.[1451]

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.[1452]

[1448] The relevant trunk market is the proposed wholesale market for regional trunk segments in the UK.

[1449] See Table 81 at page 397 of the June BCMR Consultation.

[1450] See paragraphs 7.434 to 7.486 of the June BCMR Consultation.

[1451] 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.[1453]

19.34 Telefónica UK was, in general, supportive of our charge control proposals, in particular in relation to RBS backhaul.[1454]

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.[1455] 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.[1456]

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

[1452] See CWW response to the LLCC Consultation, paragraph 15.13, page 68.

[1453] See Level 3 non-confidential response to the LLCC Consultation, page 20.

[1454] See Telefónica UK response to the LLCC Consultation, page 32, 33.

[1455] See The AlixPartners report, UKCTA response to the LLCC Consultation, page 27.

[1456] 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.[1457]

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.[1458]

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.[1459]

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.[1460]

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

[1457] See The AlixPartners report, UKCTA response to the LLCC Consultation, page 28-29.

[1458] See CWW response to the LLCC Consultation, paragraph 4.15, page 10-11

[1459] See The AlixPartners report, UKCTA response to the LLCC Consultation, page 25.

[1460] 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, [✂] of 2Mbit/s local ends were purchased internally in 2011/12 compared to [✂] of 34/45Mbit/s local ends and [✂].[1461] 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.

[1461] 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
Low bandwidth TISBO up to and including 8Mbit/s	86%	88%	+2%
Medium bandwidth TISBO above 8Mbit/s and up to and including 45Mbit/s outside WECLA	74%	77%	+3%
High bandwidth TISBO above 45Mbit/s and up to and including 155Mbit/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.[1462] 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 opposed 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.

[1462] 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.[1463]

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.[1464] In 2010/11, PPCs made up 64%[1465] of total TI market revenues in 2010/11 and RBS made up a further 19%.[1466] 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.

[1463] Note that high bandwidth services are included outside the WECLA area only.

[1464] See paragraphs 7.62 to 7.179 of the June BCMR Consultation.

[1465] Total TI market revenues include SDSL. See BT's RFS for 2010/11. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2011/CurrentCostFinancialStatements2011.pdf.

[1466] 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.[1467] 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.[1468] 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,[1469] 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)[1470], 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.[1471] 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.[1472] Our assessment of these charges was described in Annex 6 of the LLCC Consultation.

[1467] This was based on the mid-point of our consultation range.

[1468] 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.

[1469] £8m out of £898m. See BT's RFS for 2010/11.

[1470] LLCC PPC Points of Handover pricing review, 21 September 2011 http://stakeholders.ofcom.org.uk/consultations/revision-points-handover-pricing/final-statement/

[1471] 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.

[1472] 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.[1473] 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.

[1473] 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.[1474]

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

[1474] 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.[1475] 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.[1476,1477] Telefónica

[1475] 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.

[1476] See Telefónica UK non-confidential response to the LLCC Consultation paragraphs 62 (pp. 24) and 65-68 (pp. 26).

[1477] 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.[1478]

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.[1479]

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.[1480]

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.[1481]

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

[1478] See Telefónica UK non-confidential response to the LLCC Consultation, page 34.

[1479] See EE non-confidential letter dated 4 September 2012.

[1480] See CWW response to the LLCC Consultation, paragraphs 15.34-15.35, pp. 72-73.

[1481] 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+2.25%.

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. Having regard to the reasons set out in this section and BT's investment in this area, we consider that this is likely to be the most effective way of benefiting end-users of public electronic communications services by promoting efficiency and sustainable competition, whilst also addressing the risk of excessive pricing.

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 and is therefore likely to be, having regard to both the reasoning set out in this section and BT's investment in this area, the most effective way of benefiting end-users of public electronic communications services given that is will also address the risk of excessive pricing and promoting efficiency and sustainable competition.

Ancillary services and equipment and infrastructure

19.102 For the reasons set out in this section, 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. This addresses the risk of excessive pricing whilst promoting efficiency and sustainable competition and we consider it is likely to be the most effective way of benefiting end-users of public electronic communications services.

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. Furthermore, having regard to all the reasons set out in this section and BT's investment in this area, we consider that the sub-cap is likely to be the most effective way of benefiting end-users of public electronic communications services and promoting competition and sustainable competition, whilst also addressing the risk of excessive pricing.

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.[1482] 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 to 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.[1483] 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.[1484] We explained that the development of 21CN technology (including next generation of SDH technology) in the core was

[1482] See paragraphs 3.87 to 3.172 of the June BCMR Consultation.

[1483] See paragraphs 4.21 to 4.51 of the June BCMR Consultation.

[1484] See Section 2 of the June BCMR Consultation on relevant technical background.

progressing and that BT had migrated some internal services to be delivered over the 21CN core.[1485] 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:

- 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.[1486]

19.118 Similarly, EE and MBNL said that an anchor pricing approach seems, in principle, to be reasonable.[1487]

[1485] 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

[1486] See CWW response to the LLCC Consultation, paragraph 15.8.

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".[1488]

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.[1489] These are dealt with in paragraphs below on base year adjustments.

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.[1490]

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

[1487] See EE and MBNL non-confidential response to the LLCC Consultation, page 20.

[1488] See Level 3 non-confidential response to the LLCC Consultation, page 5.

[1489] See BT non-confidential response to the LLCC Consultation, page 15.

[1490] 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.

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 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.[1491] 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.[1492] 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.[1493]

19.132 Based on information provided by BT, we estimated that the valuation of assets created under excess construction is £39m.[1494] 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:

[1491] BT Wholesale response to S135 Notice of 21 May 2012.

[1492] This is a legacy product which BT does not intend to support beyond spring 2014.

[1493] See Table A5.17 in Annex 5 of the LLCC Consultation for an explanation of accounting terms used.

[1494] BT Wholesale response to S135 Notice of 21 May 2012.

- 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;[1495] 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.[1496] We therefore proposed in the 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.[1497]

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;[1498]

- equipment related costs, which include power and maintenance and are considered to vary in relation to the equipment at the local exchange;[1499] and

- other costs, which are mainly admin costs that are not considered to vary by geography.[1500]

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

[1495] See Annex 5 of the LLCC Consultation for a description of the cost forecasting approach used.

[1496] See Table 46, Section 7 of the June BCMR Consultation.

[1497] BT Wholesale response to S135 Notice of 21 May 2012.

[1498] Access costs include copper, fibre and duct.

[1499] Equipment related costs include land, network equipment, buildings, motor transport, provision and installation, and maintenance.

[1500] These include finance and billing, customer service and other overhead type activities.

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.[1501]

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 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.[1502] 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.[1503]

[1501] 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.

[1502] 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.

[1503] 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.

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.

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.[1504] We removed these costs from the cost base as we do not model costs and revenues for ancillary services.

[1504] BT Wholesale response to s135 Notice of 21 May 2012.

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.

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.[1505] 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.1506 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.[1507]

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

[1505] BT Wholesale response to s135 Notice of 14 February 2013 [✂]

[1506] See Table 46, Section 7 of the June BCMR Consultation.

[1507] BT Wholesale response to S135 Notice of 21 May 2012.

19% to 31% 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:

- 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'.[1508]

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

[1508] BT Wholesale's response to Ofcom's information request issued on 21 May 2012.

- 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 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

19.163 In the 2005 Review, we decided the basis that we would adopt in valuing BT's access assets.[1509] 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.

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.[1510] 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

[1509] http://stakeholders.ofcom.org.uk/binaries/consultations/copper/statement/statement.pdf

[1510] http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf

- 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 Consultation[1511] 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.

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.[1512] 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 28 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.

[1511] The LLCC Consultation paragraph 5.121.

[1512] BT response to S.135 Notice dated 20 March 2013 [✂]

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.[1513]

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.[1514]

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 in unjustified".[1515] 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.[1516]

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).[1517]

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.

[1513] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.17-5.19.

[1514] See CWW response to the LLCC Consultation, paragraphs 15.15-15.16.

[1515] See BT non-confidential response to the LLCC Consultation, paragraph 7, page 5.

[1516] See BT non-confidential response to the LLCC Consultation, paragraph 8.a, page 6.

[1517] See BT non-confidential response to the LLCC Consultation, page 15.

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.[1518]

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".[1519]

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 (£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".[1520]

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 to 6.136). We said 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

[1518] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.62.

[1519] See BT non-confidential response to the LLCC Consultation, paragraph 11.b, page 8.

[1520] See BT confidential response to the LLCC Consultation, paragraphs 10-12, page 16-17.

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.[1521]

19.193 In the response to the LLCC 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 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%.[1522]

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.[1523]

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

[1521] LLCC Consultation paragraph 5.124.

[1522] BT's response to S135 response dated 19 October 2012.

[1523] From BT's RAV model.

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 [✂][1524] 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 [✂] 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. [✂].[1525] 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.

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 LLCC 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.

[1524] BT response to S135 Notice of 14 February 2013 [✂]

[1525] BT presentation dated 19 October 2011 [✂]

Figure 19.5 Impact of adjustments on the TI basket[1526]

Adjustment	Revenues (£m)	Operating costs (£m)	Capital costs[1527] (£m)	Mean capital employed (£m)	ROCE (%)
RFS 2011/12 All TISBO and TI trunk markets	**738**	**278**	**201**	**1231**	**21.0%**
Ancillary services					
Points of handover[1528]	-6	-4	-3	-11	
Resilience circuits, separation & diversity, ECCs[1529] and third party infrastructure costs	-37	-3	-35	-59	
Additional protected paths costs	-	-1	-1	-4	
Additional separation & diversity costs	-	-2	-1	-5	
TISBO and TI trunk core services	***695***	***269***	***162***	***1,152***	***23.0%***
SDSL	-8	-1	-0	-4	
TISBO and TI trunk core services excluding SDSL	***687***	***268***	***161***	***1,147***	***22.4%***
Geographic disaggregation					
Exclude services delivered within the WECLA	-25	-5	-4	-43	
TISBO and TI trunk core services outside the WECLA	***662***	***263***	***157***	***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**	**24.4%**

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

[1526] 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.

[1527] Capital costs include depreciation and holding losses (gains).

[1528] 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.

[1529] ECC revenues are excluded from the TI basket and ECC costs are not adjusted 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.[1530]

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.

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 reported charges for TI services are below DSAC in the first year of the control.

[1530] 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

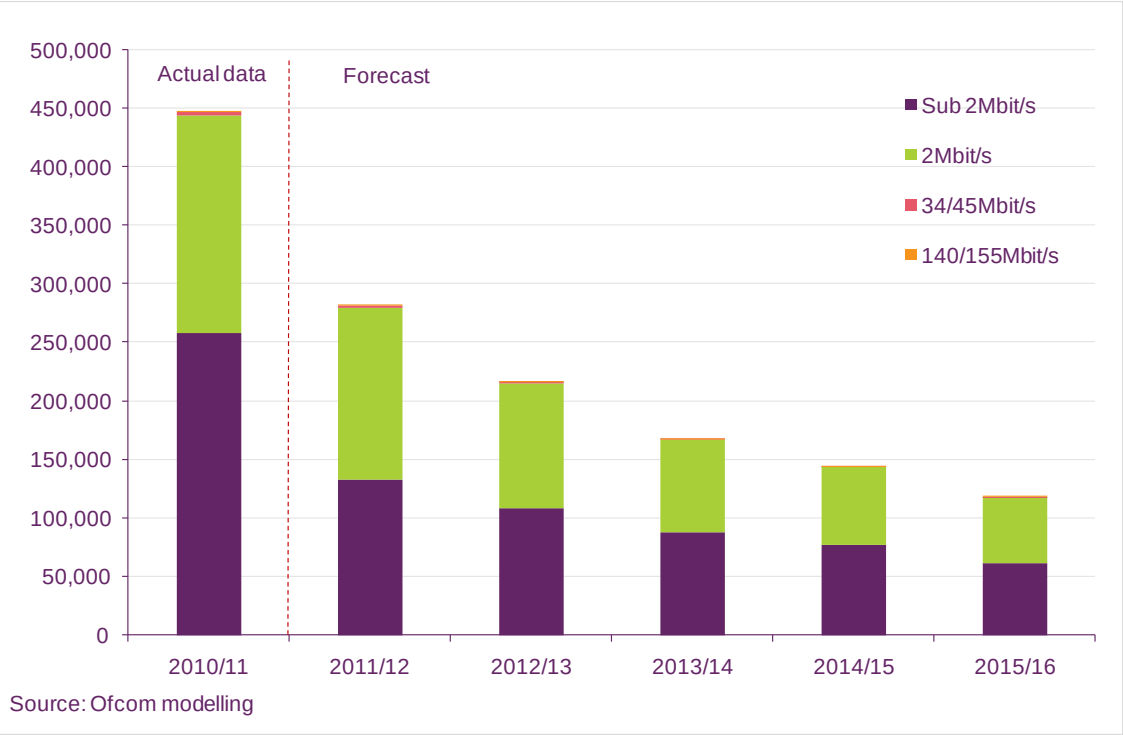
The LLCC Consultation proposals

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)



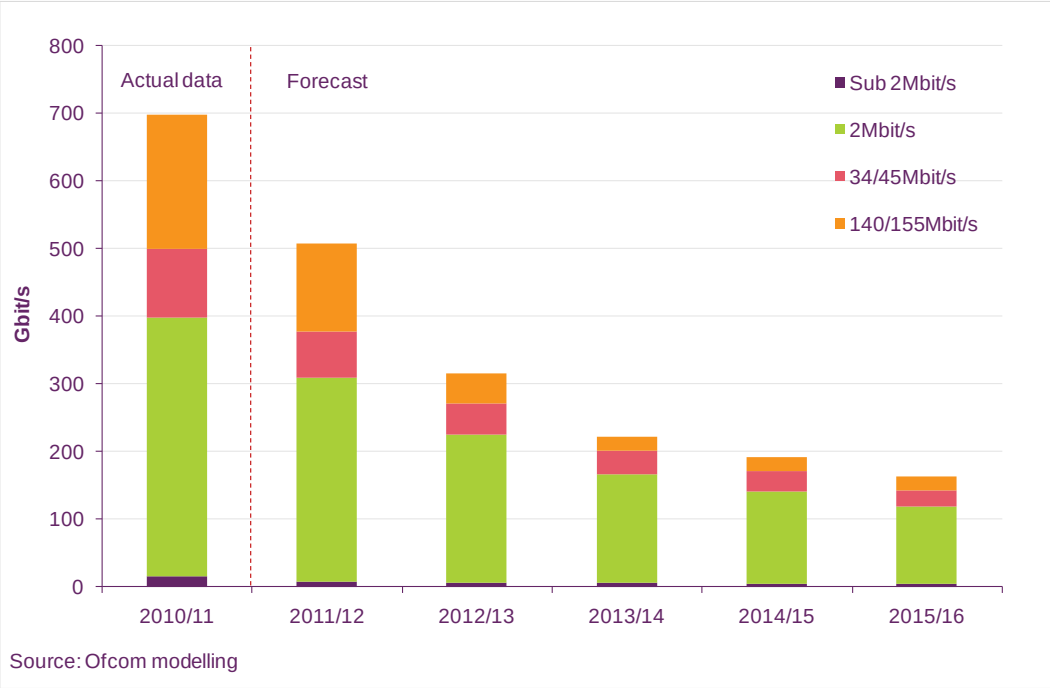
Source: Ofcom modelling

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



Source: Ofcom modelling

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.[1531]

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.[1532]

[1531] See CWW response to the LLCC Consultation, paragraphs 15.10-15.11.

[1532] 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.[1533]

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).[1534] We note that this decline is larger than that stated by Virgin. We note that for 2011/12 [✂] had forecast a faster rate of decline than the outturn and, in contrast, that [✂] 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. [✂].[1535]

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. [✂]. 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.

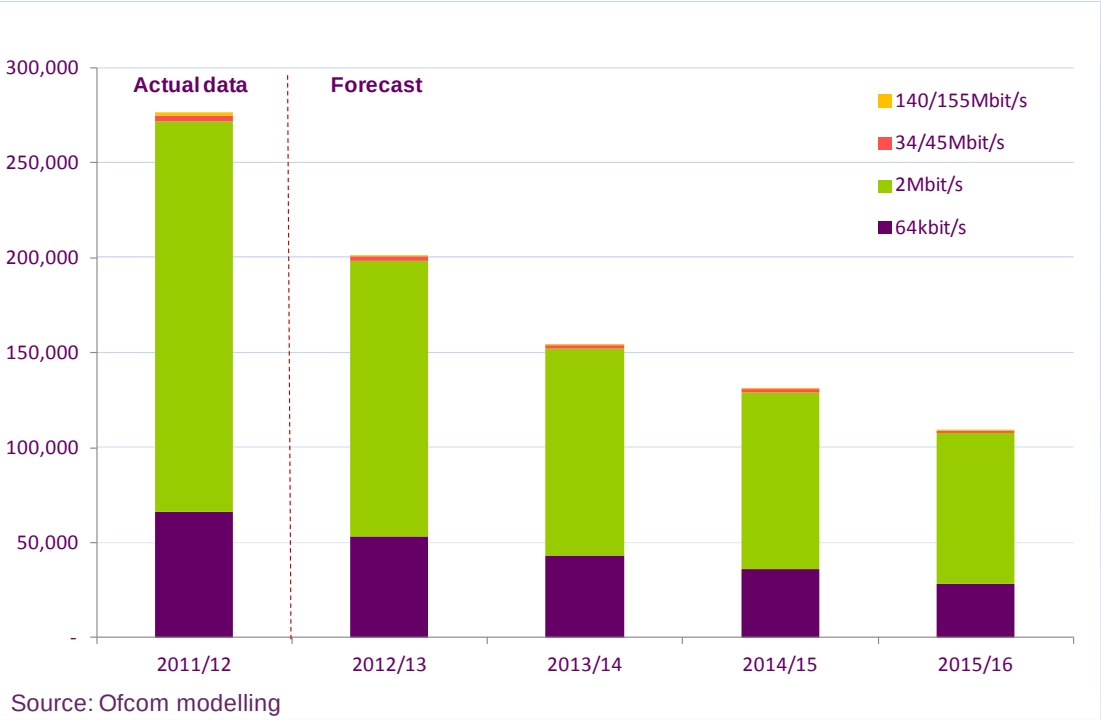
19.231 Given the relative accuracy of our 2011/12 forecasts and the differences in forecasts between stakeholders, we have decided to continue with our previous forecast rates of volume decline. We have therefore adapted the LLCC Consultation forecasts to the new base year and kept the same rate of change 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.

[1533] 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%.

[1534] BT Wholesale data submitted in response to S135 notice on 4 October 2012

[1535] BT Wholesale response to S135 Notice of 14 February 2013 [✂]

Figure 19.8 Ofcom forecast of TI services to 2015/16 (number of local ends)



Source: Ofcom modelling

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 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[1536]	Statistical analysis (NERA, Deloitte)[1537][1538]
Efficiency (%)	**~1.5%**	[✂]	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.[1539] 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.

[1536] Deloitte, 'Analysis of the Efficiency of BT's Regulated Operations, A report for BT', dated 16 February 2012.

[1537] NERA, 17 March 2008, The comparative efficiency of BT Openreach. http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/annexes/efficiency.pdf

[1538] Deloitte, 29 March 2011, 'WBA consultation response' http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/BT2.pdf

[1539] 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%".[1540]

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".[1541]

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 difficultly 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.

[1540] See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 149, page 44.

[1541] 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.[1542] 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.[1543] 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.[1544]

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.

[1542] 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

[1543] See paragraphs A8.15 to A8.47 of the WLR LLU CC Statement.

[1544] 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 the LLCC Consultation.

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".[1545]

19.259 BT supported our proposal to use the 'Rest of BT' WACC rather than the disaggregated WACC for the copper access business.[1546] 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 Annex 14.[1547]

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 6.9%.

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;

[1545] See UKCTA response to the LLCC Consultation, page 24.

[1546] See BT non-confidential response to the LLCC Consultation, page 49.

[1547] 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.[1548] 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.[1549] 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.[1550] 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.[1551] 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.[1552]

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.

[1548] http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/pricing/nccjul97.htm

[1549] 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.

[1550] Both BT Wholesale and Openreach submitted data based on BT's 'LRIC model'. BT Wholesale also provided 'End of life' AVEs and CVEs.

[1551] Openreach response to S135 Notice of 4 April 2012 [✂]

[1552] 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.[1553] 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 [✂] of total pay operating costs and [✂] 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

[1553] 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)[1554].

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 appear 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 circuits[1555]. However, the volumes of sub-2Mbit/s circuits had only declined slightly over this time period[1556]. 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:

[1554] BT Wholesale response to S135 Notice of 21 May 2012 [✂]

[1555] BT Wholesale response to S135 Notice of 21 May 2012[✂]

[1556] BT Wholesale response to S135 Notice of 21 May 2012 [✂]

- 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.[1557]

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.[1558]

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. [1559]

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.[1560]

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 19.10below sets out the new set of AVEs (2011/12) alongside those used in the LLCC Consultation (2010/11).

[1557] See BT non-confidential response to the LLCC Consultation, page 45.

[1558] See BT non-confidential response to the LLCC Consultation, page 45.

[1559] BT response to S.135 Notice dated 5 March 2013 [✂]

[1560] 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.[1561] 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

[1561] BT response to S135 Notice of 14 February 2013 [✂]

relationship between operating costs and component volumes (CVEs), the indicative CVEs were multiplied by AVEs.[1562]

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 [✂] and a non-pay CVE of [✂].[1563] 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 [✂] would result in asset costs at t_1 being calculated as [✂] while a CVE of [✂] would result in operating costs at t_1 being calculated as [✂]. 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 [✂][1564].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

[1562] BT non-confidential response to the LLCC Consultation, paragraphs 23 and 24, page 45.

[1563] BT response to S.135 Notice dated 25 May 2012 [✂]

[1564] BT response to S.135 Notice dated 25 May 2012 [✂]

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 forecasts[1565]

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.[1566]

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.

[1565] BT Group response to S135 Notice of 28 September 2012 [✂]

[1566] 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 2006/07 and 2010/11	Real price change (based on RPI)
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	-0.6%	-4.0%
Cable – Copper*	2.0%	-2.1%
Cable – Fibre	2.2%	-1.4%

* For copper cable we use the five year average from 2006/07 to 2010/11 excluding 2009/10 due to one-off events in 2009/10

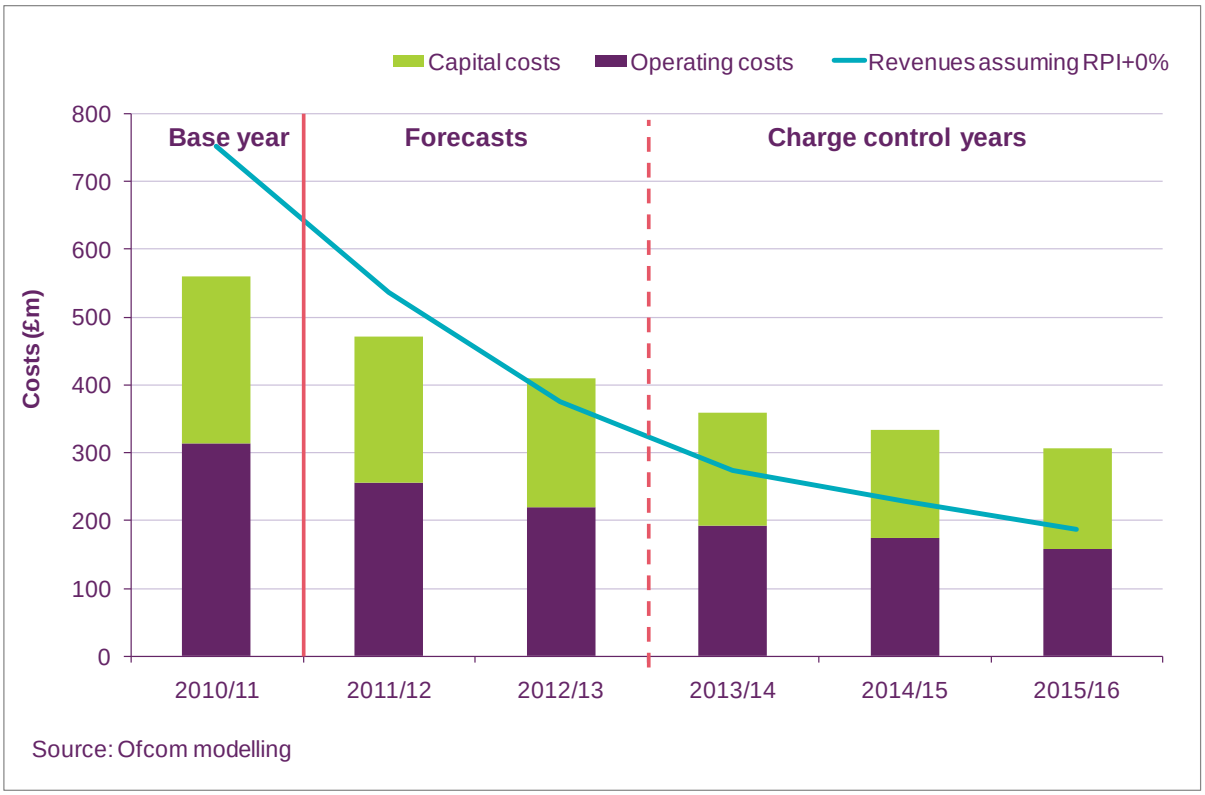
Reallocation of costs from the TI basket to the Ethernet basket

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.[1567] 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.

i) 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.

ii) 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.

iii) 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.[1568]

i) We calculated total operating costs to be recovered based on the volume forecasts, CVEs and efficiency.

ii) 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

[1567] See paragraphs 4.254-4.263 of the LLCC 2009.

[1568] 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 costs 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 stakeholder 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 fell 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.[1569]

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.[1570] 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.[1571]

19.328 CWW suggested that Ofcom's "approach results in a more than doubling of unit admin-related cost".[1572] 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.[1573]

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. 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.[1574] CWW argued that the increase in TI unit costs indicated that Ofcom had inadequately addressed the failings in BT's forecasting approach and incompletely dealt with the over-allocation of common costs to the TI basket.[1575] CWW said that

[1569] See CWW response to the LLCC Consultation, paragraphs 12.11-12.12.

[1570] See CWW response to the LLCC Consultation, paragraph 12.10, referring to paragraph A5.242 of the LLCC Consultation document.

[1571] See CWW response to the LLCC Consultation, paragraphs 12.11-12.12.

[1572] See CWW response to the LLCC Consultation, paragraph 12.13.

[1573] See CWW response to the LLCC Consultation, paragraph 12.15.

[1574] See CWW response to the LLCC Consultation, paragraphs 12.7-12.8.

[1575] See CWW response to the LLCC Consultation, paragraph 12.8.

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).[1576]

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.[1577] 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".[1578] 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.[1579]

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).[1580] 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.[1581] 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.[1582]

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.[1583] 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.[1584]

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.

[1576] See CWW response to the LLCC Consultation, paragraph 12.19.

[1577] See CWW response to the LLCC Consultation, paragraph 12.22.

[1578] See CWW response to the LLCC Consultation, paragraph 12.23, referring to the LLCC Statement 2009, paragraphs 4.259-4.261.

[1579] See CWW response to the LLCC Consultation, paragraph 12.25.

[1580] See CWW response to the LLCC Consultation, paragraph 12.20.

[1581] See CWW response to the LLCC Consultation, paragraphs 12.25-12.27, referring to paragraph A5.246 of the LLCC Consultation.

[1582] See CWW response to the LLCC Consultation, paragraphs 12.30.

[1583] See CWW response to the LLCC Consultation, paragraphs 12.30-12.31.

[1584] See CWW response to the LLCC Consultation, paragraphs 12.31-12.32.

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. [1585, 1586]

- 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.[1587, 1588] Sky cited duct, fibre and accommodation as common resources which are likely to be used more efficiently by Ethernet services.[1589]

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.

- 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 of Ethernet services, which are used in conjunction with LLU to provide downstream services to end users.[1590]

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.[1591] Exponential-e objected to the lack of detail provided by Ofcom about the "duct" cost

[1585] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11.

[1586] See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

[1587] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11.

[1588] See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

[1589] See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

[1590] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.13.

[1591] See Exponential-e non-confidential response to the LLCC Consultation, paragraphs 7.1-7.2, page 12.

category and said that it opposes the measure "until a suitable form of transparency can be offered".[1592]

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 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.[1593]

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.[1594]

- 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".[1595] 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."[1596]

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.[1597] 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

[1592] See Exponential-e non-confidential response to the LLCC Consultation, paragraphs 7.3, page 12.

[1593] See CWW response to the LLCC Consultation, paragraphs 12.33-12.36.

[1594] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11

[1595] See Sky non-confidential response to the LLCC Consultation, paragraphs 34, page 8.

[1596] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.11

[1597] 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."[1598]

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.[1599] 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.[1600]

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.[1601]

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 consider that the reallocation should be across all of BT's Ethernet services, and not just the charge controlled area. We consider that it is in the interests of promoting sustainable competition that BT should recover the same amount of fixed and common costs per unit in the WECLA that it does outside WECLA. If insufficient common costs are allocated to the WECLA, this could distort sustainable competition as BT may be able to price at a lower level than its competitors as it would recover a disproportionate share of its fixed and common costs outside the WECLA where it faces less competition. We have therefore adjusted the reallocation so that the share of non-marginal 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).

[1598] See Sky non-confidential response to the LLCC Consultation, paragraphs 35, page 8.

[1599] See EE/MBNL non-confidential response to the LLCC Consultation, pages 26-27.

[1600] See EE/MBNL non-confidential response to the LLCC Consultation, page 27.

[1601] See Exponential-e con-confidential response to the LLCC Consultation, paragraph 7.5.2.2, page 12.

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 LLCC 2009 and reallocated non-marginal costs in proportion to the decline in TI services.

19.348 We have reconsidered our approach to reallocation in the light of consultation responses. We note that stakeholders agreed in principle with reallocation, but disagreed with the proposed methodology. We consider that the recovery of fixed and common costs will always involve judgement. That is, there is unlikely to be a unique correct methodology for the recovery of fixed and common costs. In deciding on how fixed and common costs are recovered in this control, we have exercised our regulatory judgement in deciding on an approach which is consistent with our regulatory objectives.

19.349 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.

19.350 We consider that there may be drawbacks to this approach. In the case where TI volumes are declining, the loss of economies of scale in these assets will be borne by other services. This will lead to the charges for these other services rising by more and the charges of TI services rising by less, than if TI services had shared in the loss of economies of scale. Having considered this further, in our regulatory judgement, we consider that it may be more appropriate for TI and other services to share these common costs, in proportion to the migration to other services.

19.351 In the LLCC Consultation we proposed to reallocate non-marginal operating costs in proportion to the rate of migration from TI services. We have now decided to also use this methodology for the reallocation of all non-marginal costs. We consider that a reallocation in line with migration is the most appropriate way to achieve our regulatory objectives. It ensures that BT recovers its costs and so is consistent with investment incentives. By reallocating fixed and common costs from the declining TI services to other growing services, it is consistent with promoting sustainable competition, as a new entrant to the other markets would also need to recover fixed and common costs. By allowing TI charges to reflect, at least in part, the loss of economies of scale for those services, it leads to a pricing structure that is consistent with economic efficiency.

19.352 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

19.353 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.

19.354 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.[1602] This market research asked a number of questions which give some insight into migration patterns:[1603]

- 20% of respondents had replaced leased lines with ADSL, and 7% had replaced these with mobile broadband services.[1604]
- 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.[1605]
- 19% of respondents saw no difficulty in replacing leased lines with ADSL, whereas 44% had no concerns about replacing leased lines with Ethernet[1606];
- 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".[1607]

19.355 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.

19.356 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.

19.357 This is set out in the WLR LLU CC:

[1602] 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

[1603] Note that each question was asked individually, so that the responses are not mutually exclusive.

[1604] See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 61, (section 8.5 "Replacing leased lines with ADSL or mobile broadband").

[1605] See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 62, (section 8.6 "Replacing leased lines with ADSL or Ethernet").

[1606] See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 63-64, (section 8.6 "Replacing leased lines with ADSL or Ethernet").

[1607] See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 8, (section 2.5 "Switching").

> "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".[1608]

19.358 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.[1609]

19.359 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.

19.360 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. 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.

19.361 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.

19.362 Given the reasons above, our view is that it would be inappropriate to allocate common costs outside the leased lines market. Although some TI customers may 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

19.363 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

[1608] 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.

[1609] 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.

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.

19.364 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.

19.365 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. This approach is consistent with promoting sustainable competition in Ethernet services, as BT's competitors would also need to recovered fixed and common costs. 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 fixed and common costs previously associated with TI customers are recovered from Ethernet services.

19.366 We consider it preferable to recover those common costs from the remaining TI customers. In our regulatory judgement, such an approach will promote efficiency in line with our regulatory objectives. 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.

19.367 We have decided to calculate the percentage of TI services likely to move to Ethernet services as follows. The BCMR market research has found that 29% of TI customers stated they were likely to move to Ethernet services.[1610] As noted in Section 3, there is uncertainty associated with consumer surveys as they are based on claimed behaviour as opposed to observed consumer behaviour and, despite being based on robust sample sizes, could be subject to certain margins of error. Nevertheless, we consider that the 29% figure is the best available evidence of the proportion of TI customer who are likely to migrate to Ethernet services over the charge control period. This corresponds to approximately half of the total decline in TI services forecast over the charge control.

19.368 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.

[1610] See Jigsaw Research, Business Connectivity Services Review, 11 October 2011, pp 62, (section 8.6 "Replacing leased lines with ADSL or Ethernet").

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.

19.369 In summary, we have concluded that, it is appropriate to reallocate 29% of the non-marginal costs from TI to Ethernet services.[1611] This means that £46m of costs will be reallocated from TI to Ethernet services.

Value of X

The LLCC Consultation proposals

19.370 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;

19.371 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%.

Consultation responses

19.372 Three stakeholders commented and raised concerns on the proposed level of the control for TI services.

19.373 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.[1612]

19.374 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 that the one proposed.[1613]

19.375 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

[1611] We have reallocated £46m from the TI basket to Ethernet services, of which £39m is reallocated to those Ethernet services outside the WECLA which comprise the Ethernet basket.

[1612] See UKCTA response to the LLCC Consultation, page 20, “Service Migration” section.

[1613] See Level 3 non-confidential response to the LLCC Consultation, page 5.

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.[1614]

Our response and conclusions

19.376 Given the modelling assumptions described above, we have calculated that the value of X for TI services is +2.25%. 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.

19.377 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.

19.378 An RPI+2.25% 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.

The TI basket control meets the relevant tests under the Act

Powers under sections 87 and 88 of the Act

19.379 We are imposing a charge control on BT by means of an SMP condition under section 87(9) of the Act.[1615] The main aspects of the charge control are summarised in Figure 19.1 above.

19.380 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.

19.381 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.

[1614] See CWW response to the LLCC Consultation, page 42.

[1615] SMP condition 5.1 at Annex 7 of this Statement.

19.382 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

19.383 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

19.384 We consider that imposing the SMP condition is appropriate for the purpose of promoting efficiency, since:

- In the absence of competitive pressures, as revealed by our assessment in Sections 7 and 11, we believe that BT would have limited incentives not only to deliver cost reflective prices, but also to seek to reduce its costs of providing wholesale leased lines services.

- 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.

- 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

19.385 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.

19.386 The market analysis we have conducted, in particular 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.

19.387 Although the charge control applies to baskets of services, as explained above, we have implemented appropriate safeguards to ensure that BT does not use the pricing flexibility offered to it in an anti-competitive manner.

Investment matters

19.388 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 (as set up above);
- 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 (as set out above).

We have considered the tests under section 47 of the Act

19.389 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.

19.390 We consider these tests are satisfied.

The SMP condition is objectively justifiable

19.391 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.

19.392 As a result of the analysis set out above we consider the SMP condition is objectively justifiable.

19.393 We have set a value of X based on our assessment of forward-looking costs and on our forecasting assumptions as set out above.

19.394 We have imposed sub-basket constraints on those services where we have identified a particular risk of excessive pricing as set out above.

19.395 We have set out the basis on which we have decided to adopt the anchor pricing approach as set out above.

19.396 We have conducted an analysis of which costs are common between the TI and Ethernet baskets as set out above. Based on this analysis, we have reallocated £46m from the TI basket to Ethernet services.[1616]

The SMP condition does not discriminate unduly

19.397 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

19.398 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.

19.399 For the reasons set out above, therefore, we consider the SMP condition is:

- appropriate to achieve the aim of addressing, for the all services within the TI basket, BT's ability and incentive to charge excessive prices and the risks of cross-subsidisation, over investment and excessive costs/inefficiencies;

- necessary in that it does not, in our view, impose controls on the prices BT may charge that go beyond what is required to achieve the aim of addressing, for all services within the TI basket, BT's ability and incentive to charge excessive prices and the risks of cross-subsidisation, over investment and excessive costs/inefficiencies; and

- such that is does not, in our view, produce adverse effects that are disproportionate to the aim pursued, which is, for all services within the TI basket, to address BT's ability and incentive to charge excessive prices and the risks of cross-subsidisation, over investment and excessive costs/inefficiencies.

The SMP condition is transparent

19.400 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.

[1616] We have reallocated £46m from the TI basket to Ethernet services, of which £39m is reallocated to those Ethernet services outside the WECLA which comprise the Ethernet basket.

We have considered sections 3 and 4 of the Act

19.401 We also consider that the TI basket control furthers our duties under sections 3 and 4 of the Act.

19.402 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.

19.403 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.

19.404 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

19.405 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".[1617]

19.406 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. As set out above, we expect customers to migrate from TI circuits to Ethernet and other technologies, which is associated with a significant increase in the unit cost of TI services.

19.407 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.

[1617] Explanatory Memorandum, page 6, available at http://ec.europa.eu/information_society/policy/ecomm/doc/library/recomm_guidelines/leased_lines/expmem_rec_ll_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-11.50%

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') with a controlling percentage of RPI-11.50%. This control has changed from RPI-11.00% as set out in the draft Statement. This change follows a correction of an error in our model impacting the calculation of Ethernet costs. 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 controls[1618]

Basket	Services within scope	Basket cap	Sub-cap and sub-basket constraints
Ethernet basket	Connection and rental charges for: Wholesale low bandwidth AISBO services (up to and including 1Gbit/s) outside the WECLA Ethernet services (above 1Gbit/s) outside the WECLA Ethernet ancillary services (excluding ECCs) Interconnection services	RPI-11.50%	Sub-basket on interconnection services (RPI-11.50%) Sub-basket for EAD 1 Gbit/s (RPI-11.50%) Sub-cap on each and every charge (RPI-RPI)

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.[1619]

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

[1618] Our proposals exclude the Hull area.

[1619] 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 Ethernet services, of which £39m is reallocated to those Ethernet services outside the WECLA which comprise 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

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.[1620] 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, 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):

[1620] 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"[1621] and that providing BT with the flexibility to price on a cost-reflective basis, subject to the sub-caps is "a

[1621] 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".[1622]

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.[1623] 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 Consultation[1624]

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%	• 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%	• 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

[1622] See paragraph 3.268 of the CC's determination.

[1623] See paragraphs 4.52-4.101 of the June BCMR Consultation.

[1624] 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.[1625] 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

[1625] 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.[1626] 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".[1627]

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.[1628] AlixPartners (in its report for UKCTA) cited WES as an example of a product where BT had an incentive to increase relative prices.[1629] Sky suggested that we "should consider applying more sub-baskets and aligning sub-caps more closely with the overall basket cap".[1630] 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.[1631]

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.[1632]

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.[1633]

20.36 TalkTalk, although supporting the use of basket controls as opposed to individual product controls[1634], 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 network[1635];
- 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

[1626] See BT non-confidential response to the LLCC Consultation, paragraph 9.a, page 6.

[1627] See BT non-confidential response to the LLCC Consultation, paragraph 4, page 18.

[1628] 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.

[1629] See AlixPartners (on behalf of UKTA), response to the LLCC Consultation, paragraph 1.15, page 6.

[1630] See Sky non-confidential response to the LLCC Consultation, paragraph 2.a), page 1.

[1631] See CWW response to the LLCC Consultation, paragraph 4.43.

[1632] See AlixPartners (on behalf of UKTA) response to the LLCC Consultation, paragraph 3.17, page 16.

[1633] See Colt non-confidential response to the LLCC Consultation, section 3, page 6.

[1634] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 3.35.

[1635] 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.[1636]

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.[1637]

20.38 Level 3 expressed concerns that the proposed basket and sub-basket arrangement would "give [BT] too much flexibility to influence the market."[1638]

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 are imposing. A broad basket also allows BT flexibility to determine price structures which encourage migration from legacy products to new, more efficient products.[1639]

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.[1640]

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

[1636] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 3.19, page 16-17.

[1637] See Verizon non-confidential response to the LLCC Consultation, page 8.

[1638] See Level 3 non-confidential response to the LLCC Consultation, page 6.

[1639] See paragraphs 6.20 to 6.33 of the LLCC Consultation,

[1640] 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."[1641] 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.

[1641] 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.[1642] 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.[1643]

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.[1644] 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.

[1642] Ofcom analysis of circuit rental volumes.

[1643] See paragraphs 6.26 to 6.30 of the LLCC Consultation.

[1644] This means that more that 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.[1645] 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

[1645] Openreach 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.[1646] 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.[1647]

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 June BCMR Consultation proposed that BT should consider the development of new AISBO CSH, IBH and In-Span Handover (ISH) products.[1648] 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 June 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.

[1646] BT Group response to S135 Notice of 1 July 2011.

[1647] 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/

[1648] See paragraphs 13.31-13.33 of the June 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.[1649] 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 services[1650] 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

[1649] This would mean that the cap would apply to all services in the Ethernet basket except for interconnection services.

[1650] 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.[1651] TRCs are provided across different markets and not just for Ethernet services. TRCs can be charged on a per hour or per engineer visit basis and/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.[1652] Currently, Openreach applies the same price regardless of whether the work is carried out for WLR, LLU or Ethernet services. We

[1651] See http://www.openreach.co.uk/orpg/home/products/serviceproducts/timerelatedcharges/timerelatedcharges/downloads/TRCs.pdf.

[1652] 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.[1653] 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 regulations 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.[1654] 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 the publication of the LLCC 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".[1655]

[1653] 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/

[1654] See http://www.openreach.co.uk/orpg/aboutus/refineSearch.do?navigationGroup=Updates&navigationId=4294967252&queryRefins=qi%3Asynchronous%2Bethernet%5Bsk%3AAll&searchSection=all&sortType=relevance

[1655] 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".[1656] Sky said that "BES customers need protection from excessive prices, not rising prices" and that "BES prices could be falling and still be excessive".[1657] CWW argued that it was possible that the BES price would be above DSAC by the end of the control".[1658] 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.[1659]

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. [✂].[1660] 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.[1661]

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. [1662][1663] 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%".[1664]

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

[1656] See Sky non-confidential response to the LLCC Consultation, paragraph 26, page 6.

[1657] See Sky non-confidential response to the LLCC Consultation, paragraph 25, page 6.

[1658] See CWW response to the LLCC Consultation, paragraph 4.8a), page 8-9.

[1659] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 3.36, page 21.

[1660] See Telefónica UK confidential response to the LLCC Consultation, paragraph 111, page 36.

[1661] See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 113, page 36.

[1662] See Sky non-confidential response to the LLCC Consultation, paragraph 29c), page 7.

[1663] See Verizon response to the LLCC Consultation, page 10.

[1664] 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%".[1665]

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.[1666]

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.[1667]

Synchronised Ethernet services

20.96 Telefónica supported our proposal to regulate SyncE. EE and MBNL agreed with our proposal that the SyncE variant of EAD is likely to fall within the scope of the Ethernet basket. EE and MBNL 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". [1668]

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 are implementing 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 and that this should address the risk of excessive pricing whilst promoting efficiency and sustainable competition. Having regard to BT's investment in this area and for the reasons set out in this section, we consider this is likely to be the most effective way of benefiting end-users of public electronic communications services.

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

[1665] See BT non-confidential response to the LLCC Consultation, paragraphs 10-11, page 19.

[1666] See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 127, pp 39-40.

[1667] See BT non-confidential response to the LLCC Consultation, paragraph 14, page 20.

[1668] See EE and MBLN non-confidential response to the LLCC Consultation, page 20 and 21.

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.

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).[1669] 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,

[1669] We forecast that from 2011/12 to 2015/16, migration to EBD will account for less than half the decline in BES volumes.

whilst allowing BT to set pricing structures consistent with migration to more efficient technologies.

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 as it will ensure that charges for this service would remain below DSAC throughout the control period whilst also promoting efficiency and sustainable competition. Accordingly, and having regard to the reasons set out in this Section and BT's investment in this area, we consider that this is likely to be the most effective way of benefiting end-users of public electronic communications services.

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.[1670]

- 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.

- 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.[1671] 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. Furthermore, having regard to the BT's investment in this area and the reasons set out in this section, we consider that the sub-cap is likely to be the most effective way of benefiting end-users of public electronic communications services and promoting competition and sustainable competition, whilst also addressing the risk of excessive pricing.

[1670] This same logic also applies to the control on WES products suggested in the AlixPartners report on behalf of UKCTA.

[1671] 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.

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 [✂].[1672]

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. 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.[1673]

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 [✂] 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 conclude 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

[1672] See BT confidential response to the LLCC Consultation, page 40.

[1673] Openreach response to S135 Notice of 14 February 2013 [✂]

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.

i) Can we identify the 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 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*".[1674] 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 remain 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'.[1675]

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

[1674] See Openreach Fact sheet. http://www.openreach.co.uk/orpg/home/products/ethernetservices/wholesaleextensionservices/wes/downloads/WES_BES_WEES_withdrawal_fact_sheet.pdf

[1675] BT Group response to S135 Notice of 1 July 2011.

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.[1676]

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.[1677]

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.[1678] 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.[1679] 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

[1676] 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.

[1677] 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.

[1678] 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.

[1679] See paragraphs 3.77 to 3.80 of the LLCC 2009.

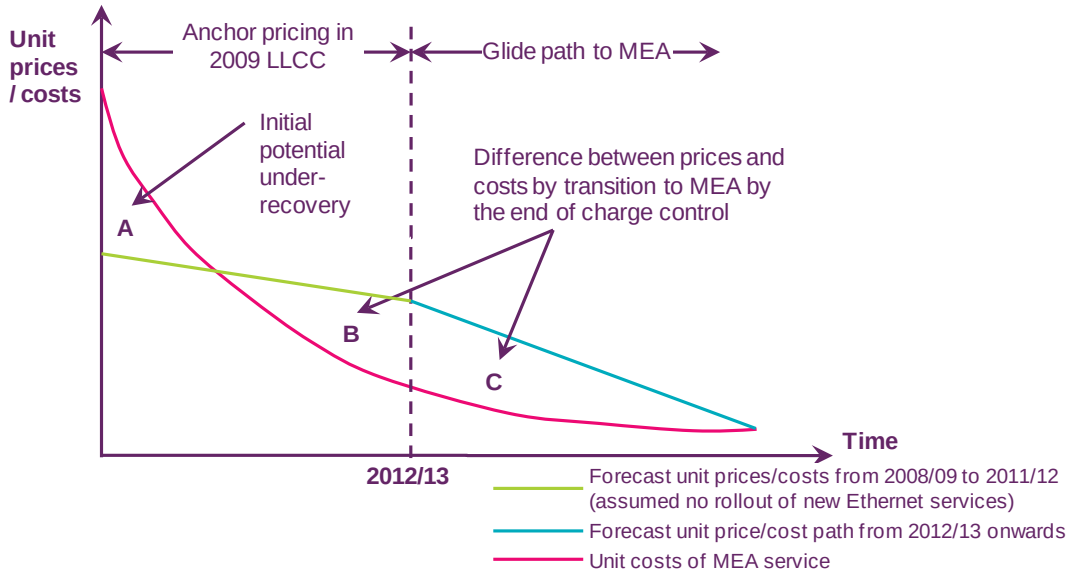
transition to new services and/or new technology. This meant that we may need to take into account holding losses or transition costs associated with the change in the MEA. We discuss this further below.

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.[1680]

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.

[1680] See paragraphs 3.89 to 3.100 of the LLCC 2009.

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 time[1681]. 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.

[1681] See paragraphs 3.172-3.177 of the LLCC 2009.

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 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.[1682] 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.[1683] 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.[1684] 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

[1682] Ofcom's information request of 5 January 2012.

[1683] Based on discussions with Openreach, March 2012.

[1684] BT Group response to S135 Notice of 1 July 2011.

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.[1685] 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 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 [✂].[1686] 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.

[1685] See Annex 5 of the LLCC Consultation.

[1686] Openreach response to S135 Notice of 4 April 2012.

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".[1687] However, CWW and Level 3 were surprised that the differential between the legacy and the MEA approach was not more significant.[1688]

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".[1689]

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.[1690]

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".[1691] Sky argued that: (i) "it is commonly accepted practice that abatements should be made under a MEA approach",[1692] (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."[1693] Sky argued that

[1687] See Sky non-confidential response to the LLCC Consultation, paragraph 14, page 4.

[1688] See CWW response to the LLCC Consultation, paragraph 15.17 and Level 3 non-confidential response to the LLCC Consultation, page 7.

[1689] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.3, referring to paragraph 4.71 of the Consultation document.

[1690] See BT non-confidential response to the LLCC Consultation, paragraph 21, page 21.

[1691] See Sky non-confidential response to the LLCC Consultation, paragraph 37, page 8.

[1692] See Proposals for WBA charge control, 20 January 2011, Ofcom. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/823069/summary/condoc.pdf

[1693] See Sky non-confidential response to the LLCC Consultation, paragraph 39, pages 8-9.

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. [1694]

20.160 TalkTalk expressed concern that Ofcom appeared to have accepted that Openreach was adopting EAD and EBD in an efficient manner.[1695] 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.[1696]

- 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 2015/16 than they otherwise would have been, TalkTalk said that this felt low to them and did not seem like a "tough requirement".[1697]

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",[1698] 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. [1699]

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".[1700] CWW stated that the MEA does not

[1694] See Sky non-confidential response to the LLCC Consultation, paragraph 40, page 9.

[1695] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.4.

[1696] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.5.1.

[1697] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.5.2.

[1698] See UKCTA response to the LLCC Consultation, first bullet point, page 25.

[1699] See Sky non-confidential response to the LLCC Consultation, paragraph 15.(d), page 4; paragraph 42, page 9.

[1700] See Virgin response to the LLCC Consultation, page 15.

allow BT to recover all transition costs but added that it believed that it accounts for at least some of the transition costs.[1701]

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".[1702]

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.[1703]

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. UCKTA suggested Ofcom should consider whether these returns should instead be used to fund the migration credit.[1704]

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".[1705] 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.[1706] 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".[1707]

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

[1701] See CWW response to the LLCC Consultation, paragraphs 13.2-13.3, page 57.

[1702] See EE and MBNL non-confidential response to the LLCC Consultation, page 27.

[1703] See Sky non-confidential response to the LLCC Consultation, paragraph 44, page 10.

[1704] See UKCTA response to the LLCC Consultation, first bullet point, page 23.

[1705] See Sky non-confidential response to the LLCC Consultation, paragraph 45, page 10

[1706] See Sky non-confidential response to the LLCC Consultation, paragraph 46, page 10

[1707] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.7.3, pages 33-34.

reduce from £43m for the charge control period to £14.3m.[1708] 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";[1709]
- "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"'[1710] 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".[1711]

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".[1712]

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.
- [✂]
- 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".[1713]

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".[1714]

[1708] See CWW response to the LLCC Consultation, paragraphs 13.15-13.19.

[1709] See CWW response to the LLCC Consultation, paragraph 13.6.

[1710] See CWW response to the LLCC Consultation, paragraph 13.12.

[1711] See CWW response to the LLCC Consultation, paragraph 13.14.

[1712] See Level 3 non-confidential response to the LLCC Consultation, page 20.

[1713] See Exponential-e non-confidential response to the LLCC Consultation, section 9, page 14.

[1714] See BT non-confidential response to the LLCC Consultation, paragraph 32, page 23.

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.[1715] 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.[1716] UCKTA suggested that the approach to limit the migration credit to this charge control seemed sensible.[1717]

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 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." [1718]

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 [✂] per annum. BT argued that Ofcom should recognise these costs and suggested that they should be added to the migration credit.[1719]

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".[1720]

20.181 BT was clear that the released fibre would be re-used, and so it was not writing these assets off.[1721] 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

[1715] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.7.

[1716] See CWW response to the LLCC Consultation, paragraphs 13.20-13.22.

[1717] See UKCTA response to the LLCC Consultation, page 23.

[1718] See BT non-confidential response to the LLCC Consultation, paragraph 21 to 22, page 21.

[1719] See BT non-confidential response to the LLCC Consultation, paragraph 24, page 22.

[1720] See BT non-confidential response to the LLCC Consultation, paragraph 26, page 22.

[1721] See BT non-confidential response to the LLCC Consultation, paragraph 28, page 22.

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 [✂] in the final charge year of the control due to the stranding of fibre.[1722]

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.[1723, 1724]

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".[1725]

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".[1726]

Our response and conclusions

Overall 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

[1722] See BT non-confidential response to the LLCC Consultation, paragraphs 27, 28 and 30, pp 22-23.

[1723] See Sky non-confidential response to the LLCC Consultation, paragraph 45, page 10

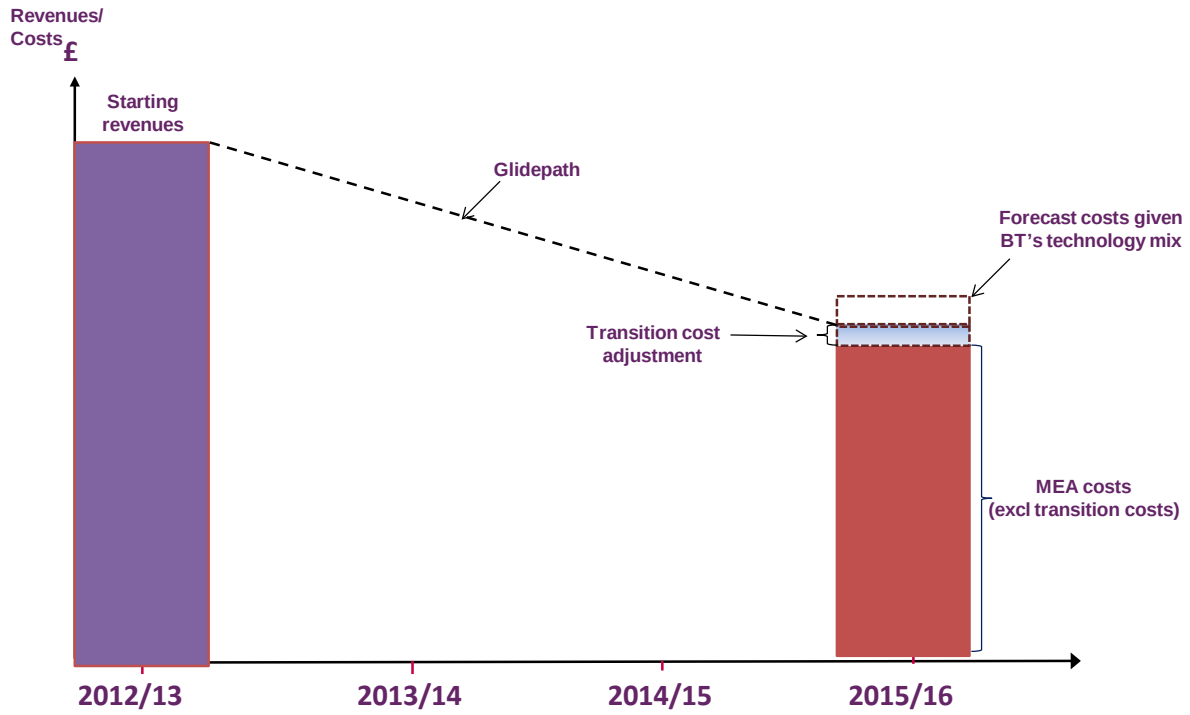
[1724] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.7

[1725] See UKCTA response to the LLCC Consultation, page 24.

[1726] See Sky non-confidential response to the LLCC Consultation, paragraph 47, page 10.

use of the MEA approach results in a lower forecast cost base for BT than if we had used BT's predicted technology mix.[1727]

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.[1728]

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 recognise 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

[1727] The mapping used for legacy services to the MEA equivalent is set out in Annex 12.

[1728] 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.

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.

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 transition 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 set out in our updated volume forecasts, 65% of legacy customers are forecast to migrate over the charge control period. Therefore, we have reduced our transition cost adjustment 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.[1729]

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

[1729] 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.

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.

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 conclude 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."[1730] 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 [✂] 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.

[1730] BT non-confidential response to the LLCC Consultation, page 22, paragraph 28.

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 charge control for the Ethernet 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.

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.[1731]

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.[1732] 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.

[1731] See paragraphs 4.298-4.332 of the June BCMR Consultation.

[1732] Openreach response to S135 Notice of 25 May 2012.

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 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.[1733] In particular, we proposed less onerous remedies in the WECLA than for the rest of the UK.[1734]

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.[1735]

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).[1736] 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

[1733] See paragraphs 7.180-7.242 of the June BCMR Consultation.

[1734] Excluding Hull.

[1735] See paragraphs 7.293-7.312 of the June BCMR Consultation.

[1736] Openreach response to S135 Notice of 29 March 2012.

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.[1737]

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 [✂] lower in the WECLA rather than 15% as Ofcom stated in the LLCC Consultation.[1738] In its response, BT also provided a description of the factors that lead to differences in costs for WES, BES, EAD and Main Link.[1739]

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. [✂].[1740]

[1737] See Level 3 non-confidential response to the LLCC Consultation, page 5.

[1738] BT confidential response to the LLCC Consultation, paragraph 46.

[1739] BT non-confidential response to the LLCC Consultation, paragraphs 47 to 51.

[1740] Openreach response to S135 Notice of 14 February 2013 [✂]

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.

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.[1741]

- Duct costs: these are considered to vary according to the utilisation of duct bores.[1742] Openreach estimated that [✂] of duct in metro areas and the WECLA is multi bore compared to [✂] 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.[1743]

- 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.[1744] 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.[1745] The same calculation was repeated for non-WECLA

[1741] Explanatory note provided by BT on 27 April 2012, "2ndS135method270412.pdf".

[1742] Explanatory note provided by BT on 27 April 2012, "2ndS135method270412.pdf".

[1743] See BT non-confidential response to the LLCC Consultation, paragraph 51.

[1744] 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.

[1745] Openreach presentation to Ofcom on 13 August 2012, "LLCC Geographic de-averaging AISBO 13-08-12.ppt".

access fibre costs. Openreach calculated that the access fibre unit GRC was [✂] of the national average.[1746]

- 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 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.[1747] Openreach calculated that the Main Link average cost per km was [✂] of the national average.[1748]

- 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.[1749] Openreach calculated that Duct unit costs were [✂] of the national average.[1750]

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	[✂]
BES	[✂]
EAD	[✂]
EBD	[✂]
Other	[✂]
Main Links	[✂]

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,

[1746] File attached to Openreach email response to follow up questions on geographic disaggregation provided on 11 December 2012.

[1747] Openreach presentation to Ofcom on 13 August 2012, "LLCC Geographic de-averaging AISBO 13-08-12.ppt".

[1748] File attached to Openreach email response to follow up questions on geographic disaggregation provided on 11 December 2012.

[1749] 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.

[1750] File attached to Openreach email response to follow up questions on geographic disaggregation provided on 11 December 2012.

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 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 [✂] 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	[✂]
BES	[✂]
EAD	[✂]
EBD	[✂]
Main Links	[✂]
Other	[✂]

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 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 proposed to find that BT has SMP in the wholesale markets for low bandwidth AISBO, and for MISBO, services outside the WECLA (excluding the Hull area).[1751]

20.274 In the light of the SMP assessment of these markets, we did not consider in the LLCC Consultation that excluding the RAV would make any material difference to

[1751] See paragraphs 7.180-7.211, in particular paragraphs 7.208-211, and paragraphs 7.243-7.292, in particular paragraphs 7.287-7.292, of the June BCMR Consultation.

investment by CPs sufficient to justify a different regulatory approach from other services.

20.275 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.

20.276 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

20.277 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.

20.278 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.

20.279 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

20.280 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

20.281 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.

Regulatory Asset Value of access duct

20.282 We set out the responses we received on our proposed adjustment in Section 19.

Removal of transmission asset costs

20.283 We received one stakeholder response on our proposals to the removal of transmission asset costs.

20.284 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".[1752]

Payment terms

20.285 We set out the responses we received on our proposed adjustment in Section 19.

Our response and conclusions

Recalculating holding gains/losses

20.286 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)

20.287 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).

20.288 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%.[1753] 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.

20.289 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%.[1754]

[1752] See BT non-confidential response to the LLCC Consultation, paragraph 41, page 24.

[1753] Openreach response to S135 Notice of 14 February 2013 [✂]

[1754] RAV model 2011/12.

20.290 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

20.291 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

20.292 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

20.293 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 21.7%. 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.

Figure 20.7 Impact of adjustments on the Ethernet basket[1755]

Adjustment	Revenues (£m)	Operating costs (£m)	Capital costs[1756] (£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	[✂]	[✂]	[✂]	[✂]	
Exclusion of Cablelink, Street Access, CCTV Access, Broadcast Access and ancillary services	[✂]	[✂]	[✂]	[✂]	
Adjustments to costs and revenues					
Inclusion of internal EBD, ONBS and associated Mainlink services	[✂]	[✂]	[✂]	[✂]	
Adjustments to RFS costs to reflect the scope of the basket	[✂]	[✂]	[✂]	[✂]	
Exclusion of ECC assets[1757]	-57	n.a.	n.a.	n.a.	
Ethernet basket	***733***	***252***	***299***	***1,365***	***13.4%***
Geographic disaggregation					
Exclude services delivered within the WECLA	-99	-29	-34	-160	
Ethernet services outside the WECLA	***634***	***223***	*265*	***1,205***	***12.1%***
Ofcom cost adjustments					
Current cost normalisation	-	-	-54	-	
Exclusion of transmission equipment	-	-	-18	-32	
Exclusion of 21CN costs	-	-5	-5	-19	
Payment terms	-	-	-	-22	
Regulatory asset value (RAV) adjustment to duct assets	-	-	-5	-61	
Total Ethernet basket in 2011/12	**634**	**218**	**183**	**1,071**	**21.7%**

Source: Ofcom modelling.

We are not making any starting charge adjustments

The LLCC Consultation proposals

20.294 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).

[1755] 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.

[1756] Capital costs include depreciation and holding losses (gains).

[1757] The adjustment for ECC relates only to Revenues as BT submitted costs data that did not include ECCs.

20.295 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

20.296 We received no stakeholder response on our proposals of not making any starting charge adjustments.

Our response and conclusions

20.297 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.

20.298 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.

20.299 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

20.300 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

<u>The LLCC Consultation proposals</u>

20.301 We received volume forecasts for Ethernet services from various sources, including Openreach, two other CPs and an industry analyst.

20.302 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.

20.303 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.

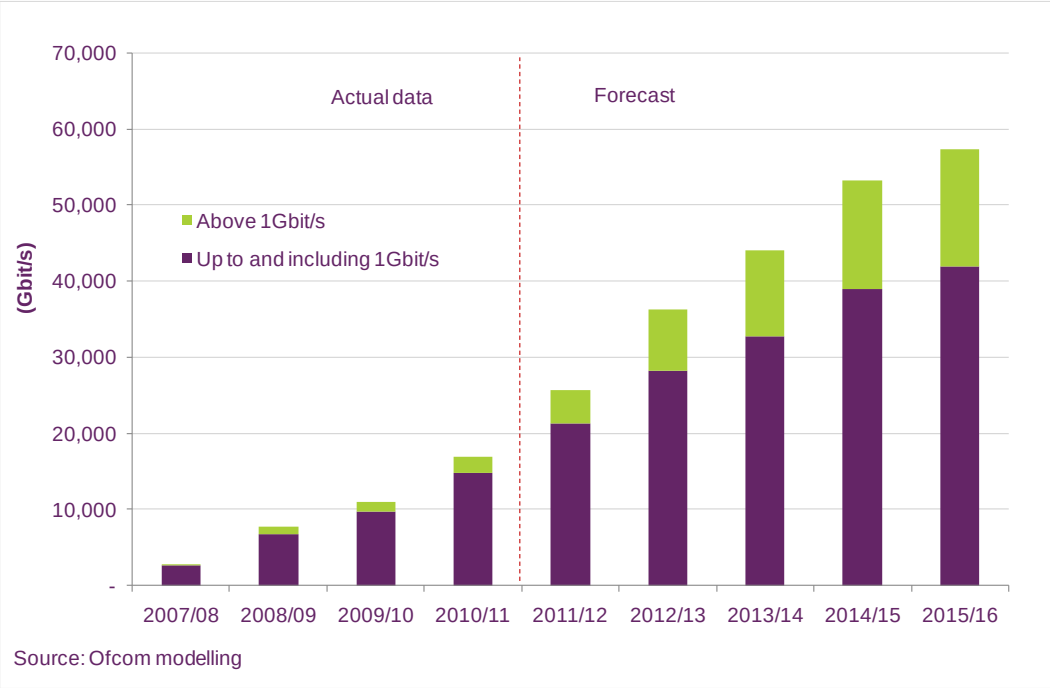
- The need to transmit increasingly large amounts of data quickly is driving the need for greater bandwidth. As a result, the bandwidth profile of Ethernet services is likely to change over time, with a trend towards higher capacity circuits.

- 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.

20.304 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



Source: Ofcom modelling

20.305 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

20.306 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.

20.307 Virgin considered that Ofcom should re-examine a number of inputs to the control, including its volume forecasts.[1758] 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.[1759] 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.[1760]

20.308 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

[1758] See Virgin non-confidential response to the LLCC Consultation, paragraph 9, page 15.

[1759] See Virgin non-confidential response to the LLCC Consultation, paragraph 10, page 15.

[1760] 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.[1761]

20.309 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.[1762] 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".[1763]

20.310 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.[1764]

Our response and conclusion

20.311 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.

20.312 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.

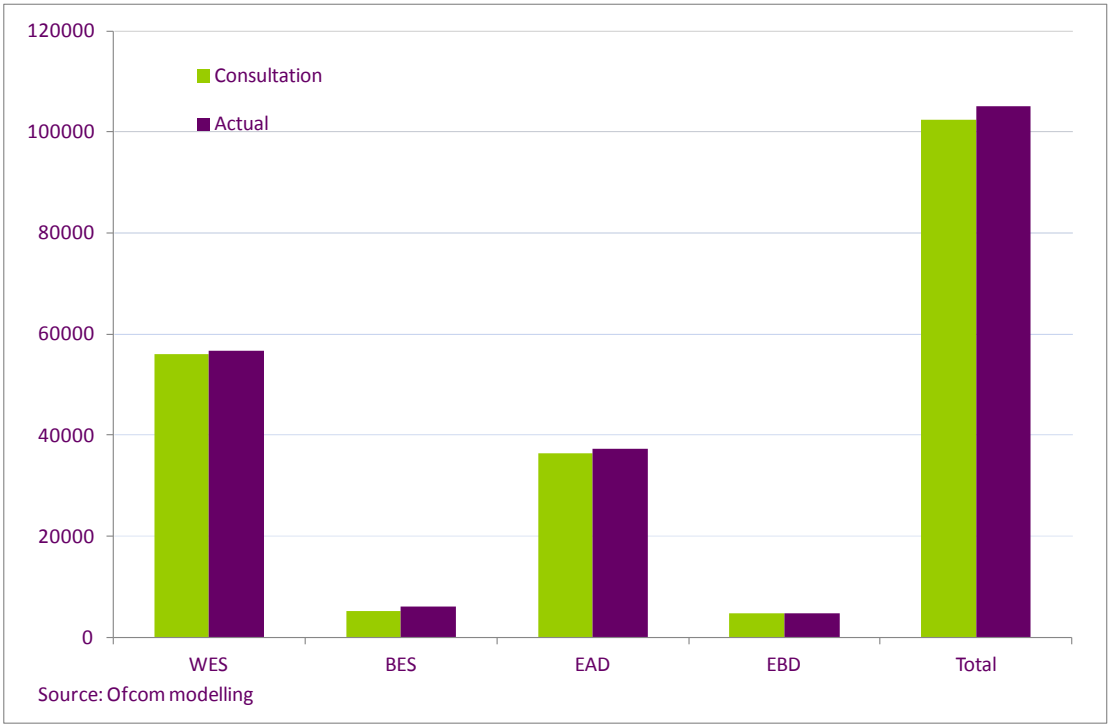
[1761] See BT non-confidential response to the LLCC Consultation, paragraphs 12-15, pages 43-44.

[1762] See Level 3 non-confidential response to the LLCC Consultation, page 20.

[1763] See Level 3 non-confidential response to the LLCC Consultation, page 6.

[1764] 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)



20.313 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.[1765]

20.314 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 [✂] and [✂], and a lower rate of growth than [✂] and [✂].

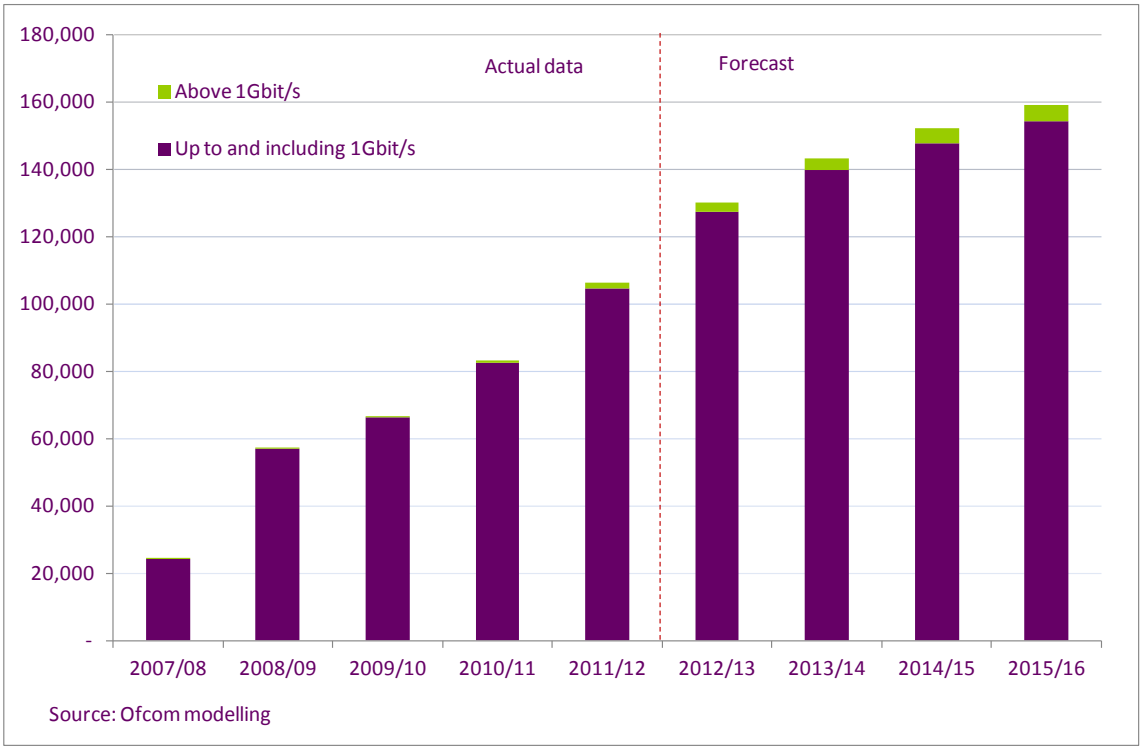
20.315 In relation to the migration from WES to EAD, we note that the decline in legacy circuits in 2011/12 was slightly less than we had forecast. However, although Level 3 was concerned that we anticipated too much migration, both [✂] and [✂] anticipate higher migration than our LLCC Consultation forecast. This suggests that there is not a clear consensus on the likely future level of migration.

20.316 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 [✂] and [✂] 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 [✂] and [✂] forecasting higher growth and Analysys Mason forecasting lower growth.

[1765] See BT non-confidential response to the LLCC Consultation, paragraph 15, page 44.

20.317 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

20.318 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.

20.319 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.

20.320 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.

20.321 These sources of evidence are summarised in Figure 20.11 below.[1766]

Figure 20.11: Evidence on Ethernet efficiency assumption

	Openreach-specific historical trend analysis[1767]	Openreach internal efficiency targets[1768]	2012 Deloitte Study[1769]	Statistical analysis (NERA, Deloitte)[1770][1771]	KPMG study
Efficiency (% per annum)	2.7-4.6%	[✂]%	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

20.322 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.[1772] 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.

20.323 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 [✂] and [✂] per year from 2011/12 to 2014/15. [✂]. 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.

20.324 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

[1766] The evidence was discussed in more detail in Annex 5 of the LLCC Consultation.

[1767] Ofcom analysis of BT Group response to S135 Notice of 1 July 2011 dated 12 August 2011 and Openreach response to S.135 Notice dated 14 February 2013 [✂].

[1768] BT Group response to S135 Notice of 1 July 2011 dated 12 August 2011 and Openreach response to S.135 Notice dated 14 February 2013 [✂].

[1769] Deloitte, "Analysis of the Efficiency of BT's Regulated Operations", a report for BT, dated 16 February 2012.

[1770] NERA, 17 March 2008, "The comparative efficiency of BT Openreach." http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/annexes/efficiency.pdf

[1771] Deloitte, 29 March 2011, "WBA consultation response" http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/BT2.pdf

[1772] 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.

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 number of observations in the sample and minimal variation in the output variables.[1773]

20.325 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.

20.326 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.[1774] 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.

20.327 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

20.328 We received several stakeholder responses on our efficiency assumptions. Four respondents raised concerns about our proposal on capex efficiency.

20.329 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.

20.330 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.[1775]

20.331 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.[1776]

20.332 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

[1773] 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.

[1774] Note that we accounted for Capex efficiency gains in other ways, as explained above.

[1775] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.4-5.6.

[1776] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.51.

point in time". [1777] They claim that, given our proposed glide path approach, there was a risk that further efficiency savings leading to ongoing reductions in MEA were not taken into account.

20.333 "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)."[1778]

20.334 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.[1779] It cited this as one reason for rejecting the Deloitte and NERA studies as they considered that the comparator companies were also monopolies.[1780]

- TalkTalk considered that Ofcom had consistently underestimated the level of efficiency that BT had achieved in charge controls.[1781] 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.[1782]

- TalkTalk argued that Ethernet services should have a higher efficiency assumption than copper (5%), since they were less mature.[1783]

- 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.[1784] TalkTalk believed that there was no reason why our efficiency assumption should not be equal to or above Openreach's internal target.[1785]

- 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.[1786]

[1777] See UKCTA response to the LLCC Consultation, third bullet, page 24.

[1778] See Sky non-confidential response to the LLCC Consultation, paragraph 50, page 11.

[1779] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.21.

[1780] TalkTalk also cited other methodological reasons for rejecting those reports.

[1781] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.25-5.26.

[1782] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.28-5.32.

[1783] See TalkTalk non-confidential response to the LLCC Consultation, page 40, footnote 73.

[1784] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.35-5.36.

[1785] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.37-5.40.

[1786] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 5.47-5.48.

- TalkTalk submitted that we should have used an efficiency rate of 5%, which was at the top of our proposed range.[1787]

20.335 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%.[1788]

20.336 BT claimed that Ofcom's operating cost efficiency assumption was too optimistic and should be reduced from 3.5% to 2.5%.[1789] 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.

20.337 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.[1790]

Our response and conclusions

20.338 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.[1791]

20.339 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.

20.340 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 [✂], which is below both Openreach's historical and its forecast capital cost efficiency.

20.341 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

[1787] See TalkTalk non-confidential response to the LLCC Consultation, paragraph 5.49.

[1788] See Telefónica UK non-confidential response to the LLCC Consultation, paragraph 150, page 44.

[1789] See BT non-confidential response to the LLCC Consultation, paragraphs 29-32, page 46.

[1790] See Virgin non-confidential response to the LLCC Consultation, paragraphs 9-11, page 15.

[1791] See paragraphs 5.56 of the LLCC Consultation.

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.

20.342 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[1792]	Openreach internal efficiency targets[1793]	2012 Deloitte Study[1794]	Statistical analysis (NERA, Deloitte)[1795][1796]	KPMG study
Efficiency (% per annum)	~5%	[✂]	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

20.343 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.[1797] In 2011/12, Openreach's actual cash cost efficiency saving was [✂].[1798] This is similar to 2010/11 but lower than the [✂] efficiency for 2011/12 which BT had forecast in August 2011.[1799] Analysis of historical data thus suggests an efficiency range around 5%.

20.344 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 [✂] 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.

[1792] Ofcom analysis of BT Group response to S135 Notice of 1 July 2011 dated 12 August 2011 and Openreach response to S.135 Notice dated 14 February 2013 [✂]

[1793] Ofcom analysis of BT Group response to S135 Notice of 1 July 2011 dated 12 August 2011 and Openreach response to S.135 Notice dated 14 February 2013 [✂]

[1794] Deloitte, "Analysis of the Efficiency of BT's Regulated Operations", a report for BT, dated 16 February 2012.

[1795] NERA, 17 March 2008, "The comparative efficiency of BT Openreach."
http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/annexes/efficiency.pdf

[1796] Deloitte, 29 March 2011, "WBA consultation response"
http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/BT2.pdf

[1797] 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. .

[1798] Openreach response to S135 Notice dated14 February 2013 [✂]

[1799] BT Group response to S135 Notice of 1 July 2011, dated 12 August 2011.

20.345 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 [✂]. 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 than the target. This suggests that, contrary to TalkTalk's suggestion, the internal target for 2011/12 did not underestimate the efficiency savings.

20.346 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.

20.347 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.

20.348 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.

20.349 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.

20.350 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.

20.351 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 [✂] in the period 2012/13-2014/15.

20.352 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. Openreach's internal targets suggest that at least this level should also be achievable in the future. If we were to base our efficiency estimate on the higher internal targets, we consider that there would be a

material risk that we would overstate the potential efficiency gains given that (i) the internal targets are higher than that implied by the external benchmarking studies (ii) the internal targets exceed what Openreach has achieved in the recent past and (iii) the actual efficiency achieved for 2011/12 was less than targeted. In our regulatory judgement, our best estimate of the efficiency Openreach is likely to achieve is 5% per year, based mainly on what it has achieved in the recent past.

20.353 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

20.354 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 CC[1800] and in the subsequent WLR LLU Statement.[1801]

20.355 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.

20.356 Further details on our proposed approach were included in Annex 7 of our Consultation document.

Consultation responses

20.357 Stakeholder responses on the cost of capital are summarised in Annex 14 of this Statement.

Our response and conclusions

20.358 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 6.9%.

Openreach's cost volume relationships

The LLCC Consultation proposals

20.359 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.

20.360 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

[1800] WBA CC, July 2011, http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/

[1801] http://stakeholders.ofcom.org.uk/consultations/wlr-cc-2011/?a=0

considered it appropriate to apply the same approach to modelling cost volume relationships in the Ethernet basket as was used for the TI basket.

20.361 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.
- Make a reduction of 10% to the submitted CVE for the category of 'General Management and Other' and for Admin CVEs.

Consultation responses

20.362 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.[1802] BT proposed a value of 0.80 for the Access Fibre AVE.[1803] 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.[1804] 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.[1805]

Our response and conclusions

20.363 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.[1806] 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.

20.364 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

[1802] See BT non-confidential response to the LLCC Consultation, page 44, paragraph 18.

[1803] See BT non-confidential response to the LLCC Consultation, page 45, paragraph 22.

[1804] See BT non-confidential response to the LLCC Consultation, page 44, paragraph 18.

[1805] 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.

[1806] 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%.

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.

20.365 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.

20.366 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).

20.367 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	[✂]	[✂]	[✂]	[✂]	[✂]
% change in circuit rental volumes	[✂]	[✂]	[✂]	[✂]	[✂]
Fibre component volumes	[✂]	[✂]	[✂]	[✂]	[✂]
% change in component volumes	[✂]	[✂]	[✂]	[✂]	[✂]

Source: Ofcom forecast of Ethernet basket circuit rental volumes

20.368 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.

20.369 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.

20.370 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) x (1+APC(t)) x annual % change in circuit volume (t);

- Method 2: AVE = % change in GRC / annual % change in circuit volume (t)

Figure 20.14: AVEs submitted by BT calculated on the basis of historical cost and circuit volume information

[✂]

20.371 We consider that, subject to a modification, Method 1 is a legitimate approach to estimating historical AVEs.[1807] BT has derived Method 1 by rearranging the formula the LLCC model uses to forecast additional capital expenditure.[1808] [✂].

20.372 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:

AVE = Capex(t) / GRC(t-1) x (1+APC(t)) x 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
	[✂]	[✂]	[✂]	[✂]

20.373 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.

20.374 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 [✂]. 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.

[1807] 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.

[1808] LLCC Consultation, Table A5.20, sets out the following formula: Capex(t) = Total GRC(t-1) * (1 + APC(t)) * AVE * annual % change in component volume (t)

Asset price changes

The LLCC Consultation proposals

20.375 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.

Consultation responses

20.376 We received no response from stakeholders on our proposal to use five-year historical average asset price change.

Our response and conclusions

20.377 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

20.378 Please see Section 19 and Annex 12.

Value of X and sensitivity analysis

The LLCC Consultation proposals

20.379 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.

20.380 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

20.381 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.[1809] However, Virgin and BT expressed reservations.

20.382 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' incentives to invest in network infrastructure whilst still ensuring that access to BT's wholesale services is still available where investment opportunities are limited.[1810]

20.383 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.[1811]

Our response and conclusions

20.384 Given the modelling assumptions described above, we have calculated that the value of X for Ethernet services is -11.50%. 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.

20.385 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.

20.386 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 potential for competition in this market in comparison to the rest of the UK, 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

20.387 We are imposing a charge control on BT by means of an SMP condition under section 87(9) of the Act.[1812] Figure 20.1 above summarises the proposed Ethernet basket control.

20.388 The Ethernet basket control applies to specific services in two markets identified in the market review Section 4.[1813] 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.

[1809] See Colt non-confidential response to the LLCC Consultation, Executive Summary

[1810] See Virgin non-confidential response to the LLCC Consultation, paragraph 12, page 15.

[1811] See BT non-confidential response to the LLCC Consultation, paragraph 10.a, page 7.

[1812] SMP condition 5.3 at Annex 7 of this Statement.

[1813] 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.

20.389 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
- conferring the greatest possible benefits on the end-users of the public electronic communications services.

20.390 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.

20.391 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".[1814]

20.392 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 conclude that a charge control on some high bandwidth Ethernet services outside the WECLA remains appropriate. We therefore consider that we have satisfied the statutory test to which Virgin refers.

There is a relevant risk of adverse effects arising from price distortion

20.393 As a result of our market analysis, in particular our assessment in Section 7 and also 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

20.394 We consider that imposing the SMP condition is appropriate for the purpose of promoting efficiency, since:

- In the absence of competitive pressures, as revealed by our assessment in Section 7 and Sections 12 and 13, we believe that BT would have limited

[1814] See Virgin non-confidential response to the LLCC Consultation, paragraph 28, page 18.

incentives not only to deliver cost reflective prices, but also to seek to reduce its costs of providing wholesale leased lines services.

- 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.

- 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

20.395 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.

20.396 The market analysis we have conducted, in particular 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.

20.397 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 above.

Investment matters

20.398 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

20.399 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.

20.400 We consider these tests are satisfied.

The SMP condition is objectively justifiable

20.401 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.

20.402 As a result of the analysis set out above, we consider the SMP condition is objectively justifiable.

20.403 We have set a value of X based on our assessment of forward-looking costs and on our forecasting assumptions as set out above.

20.404 We have imposed sub-basket constraints on those services where we have identified a particular risk of excessive pricing as set out above.

20.405 We have set out the basis on which we have decided to adopt the MEA approach as set out above.

20.406 We have conducted an analysis of which costs are common between the TI and Ethernet baskets as set out in Section 19. Based on this analysis, we have reallocated £46m from the TI basket to Ethernet services, of which £39m is reallocated to those Ethernet services outside the WECLA which comprise the Ethernet basket.

The SMP condition does not discriminate unduly

20.407 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.

20.408 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

20.409 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.

20.410 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 and the risks of cross-subsidisation, over investment or excessive costs/inefficiencies ;

- 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 the risks of cross-subsidisation, over investment or excessive costs/inefficiencies; 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 and the risks of cross-subsidisation, over investment or excessive costs/inefficiencies.

The SMP condition is transparent

20.411 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

20.412 We also consider that the Ethernet basket control fits with our duties under sections 3 and 4 of the Act.

20.413 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.

20.414 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.

20.415 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.

20.416 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.[1815]

[1815] 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.[1816] However, for the reasons set out in Section 7, our view is that this market is potentially competitive.[1817]

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 12, 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. [1818] However, as set out in Section 7, we consider 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 potentially competitive.[1819]

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 assessment of the options is set out in paragraphs 8.5 to 8.46 of the LLCC Consultation.

[1816] See Section 7 of this Statement.

[1817] See paragraphs 7.297-7.428, in particular 7.399-7.411.

[1818] See Section 12 of this Statement.

[1819] We explain this further in paragraphs 7.399-7.411.

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. safeguard 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.[1820] 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, in light of the SMP assessment in the June BCMR Consultation, 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.

[1820] 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.[1821] 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.[1822] 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,[1823] 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).[1824]

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 taking into account our SMP assessment in this market.

[1821] At the time of the LLCC Consultation, and in light of our SMP assessment in the June BCMR Consultation, we considered that the market "prospectively competitive", in the sense that competition could become effective beyond the three year forward-look period. As explained in Section 7 of this Statement, we now refer to this as "potentially competitive".

[1822] See paragraphs 11.161 to 11.171 of the June BCMR Consultation.

[1823] See the footnote to paragraph 21.13 immediately above.

[1824] See paragraph A5.164 of the LLCC Consultation.

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 favoured 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 also assessed that each of BT's starting charges are within the relevant DSAC/DLRIC thresholds at the start of the charge control.[1825]

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).[1826]

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 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 [✂] 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.[1827] 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.

[1825] 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.

[1826] 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.

[1827] See BT non-confidential response to the LLCC Consultation, page 32.

21.25 Conversely, TalkTalk argued that the level of the safeguard cap will be too lax.[1828] 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 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 compared with the control of RPI-12% outside the WECLA area.[1829] 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

[1828] See TalkTalk non-confidential response to the LLCC Consultation, paragraphs 3.38-3.41

[1829] See Exponential-e non-confidential response to the LLCC Consultation, pages 11-12.

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 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. For the reasons set out in Section 7, we regard the low bandwidth AISBO market in the WECLA as potentially competitive.[1830]

21.36 The decision to set a safeguard cap therefore reflects our view about the potential for competition to develop in the medium to long-term, rather than the situation now. Even if, as Exponential-e points out, the general economic climate is not currently favourable,[1831] the AISBO market is expected to grow over the period of the control. 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. Equally, though, as set out in Section 7, if this market does become effectively competitive over the medium to long term, it is likely to be beyond the

[1830] See paragraphs 7.399-7.411.

[1831] See Exponential-e non-confidential response to the LLCC Consultation, pages 11.

three year period covered by this review and it will depend, in part, on the type of ex-ante regulation in place.

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 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.[1832]

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 a result of our market analysis, in particular our assessment in Section 7 and also in Section 12, we consider the relevant risk of adverse effects arising from price distortion is the risk that BT might 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.

[1832] SMP condition 5.2 at Annex 7 of this Statement.

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 above).

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 above. 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. 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.[1833] 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.

[1833] 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 we consider this market is potentially competitive, 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 to 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 potentially competitive nature of this market.[1834]

21.54 For the reasons set out above, therefore, we consider the SMP condition is:

- appropriate to achieve the aim of addressing, for AI services in the WECLA, BT's ability and incentive to charge excessive prices and the risks of cross-subsidisation, over investment or excessive costs/inefficiencies;
- necessary in that it does not, in our view, impose controls on the prices for AI services in the WECLA that BT may charge 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 the risks of cross-subsidisation, over investment or excessive costs/inefficiencies;
- in our view, the least onerous of the options set out above whilst addressing, for AI services in the WECLA, BT's ability and incentive to charge excessive prices and the risks of cross-subsidisation, over investment or excessive costs/inefficiencies; and
- such that it does not, in our view, produce adverse effects which are disproportionate to the aim pursued which is to address, for AI services in the WECLA, BT's ability and incentive to charge excessive prices and the risks of cross-subsidisation, over investment or excessive costs/inefficiencies.

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

[1834] Compare, for example, other AI and TI services where we have applied a full RPI-X% control.

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 market[1835] 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 set out in this Statement, 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.

[1835] 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.[1836]

22.2 In this Section we set out our conclusions on the charge control framework for accommodation services and ECCs.[1837] 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.[1838]

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 CC, Ofcom maintained charge controls on accommodation services

[1836] See Sections 11, 12, 13 and 14 of this Statement.
[1837] For the avoidance of doubt, where we discuss ECCs, we refer to ECCs specific to leased line services.
[1838] See discussion in Section 18 of this Statement.

that CPs require to locate their equipment at BT's local exchanges.[1839] Those products have been included in the Co-mingling ancillary services basket.[1840] 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 Fee[1841] 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.[1842] ECCs cover activities such as a site survey, the installation of new duct, new blown fibre and drilling through walls.[1843] 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

[1839] See the WLR LLU CC Statement http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc/statement/LLU_WLR_CC_statement.pdf

[1840] 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

[1841] This product has been developed to enable LLU CPs to use their existing POPs to locate switching equipment for aggregating their Openreach Ethernet services.

[1842] 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.

[1843] Details of ECCs are available at: http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=ZdqG%2Fxv%2FjSuBEEITnogh5uNOEwQ2%2FKws5WBAVcIlcholMnGHsqdC0vzO163bJmh34D91D7M0q8u%2F%0AIlSgtIFAKw%3D%3D.

made an adjustment in the accounts to remove depreciation related to ECCs from 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.[1844] 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.[1845]

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.[1846]

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.[1847]

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.[1848]

22.16 Conversely, BT disagreed with our proposals with regard to the removal of ECCs from the MCE.[1849] 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.[1850]

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 cancel its order. It argued that,

[1844] 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.

[1845] For Multiple Interface services, BT has not reported any ECCs for those services.

[1846] See Telefonica non-confidential response to the LLCC Consultation, page 41.

[1847] See TalkTalk confidential "TTG BCMR LLCC - additional thoughts" page 14.

[1848] See TalkTalk non-confidential response to the LLCC Consultation, page 47, 48.

[1849] See BT non-confidential response to the LLCC Consultation, page 29.

[1850] See BT non-confidential response to the LLCC Consultation, page 29.

"[b]y taking such assets out of the regulatory asset base, the perverse short term incentive of repudiating or disposing of the assets as soon as practicable, especially if no immediate future usage of the asset could be envisaged." BT also 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.[1851]

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 TI and Ethernet services. 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 [✂] of MCE and £3m of depreciation for TI and [✂] of MCE and £5m of depreciation for AI.[1852] 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.

[1851] See BT non-confidential response to the LLCC Consultation, page 29.

[1852] Openreach and BT Wholesale response to S135 Notice of 14 February 2013 [✂]

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 adjustment 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 (as set out below) 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.[1853] 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

[1853] 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. [✂]

costs in ECC provision in addition to the contractor costs and it estimated that overhead costs added [✂] to ECC work.[1854]

22.31 Our analysis indicated that, across all charges in the sample, Openreach's weighted average margin was 30%.[1855] 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.[1856] 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.

[1854] [✂]

[1855] This margin is a weighted average margin derived from the overall incidence of ECC charges.

[1856] 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 1and 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 stakeholders who responded to our consultation in relation to the level of ECCs, CWW, Virgin, Colt, EE and 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".[1857]

[1857] 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)".[1858]

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 ECCs will be required and their level prevents CPs competing for business as aggressively as they otherwise might. Colt also suggested keeping ECCs under review.[1859]

22.42 Level 3 noted an issue over "the historic excessive pricing of ECCs within BT".[1860] 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).[1861]

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 Consultation[1862], where Ofcom set out two circumstances where start price adjustments may be appropriate. In particular, BT argued that:

- the current charges have not 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 [✂] of Ethernet-related revenue for Openreach).[1863]

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.[1864]

- BT considered that Openreach adds value when supplying ECCs by, for example, arranging a tailored infrastructure provision to the customer or

[1858] See Virgin non-confidential response to the LLCC Consultation, page 27;

[1859] See Colt non-confidential response to the LLCC Consultation, page 1.

[1860] See Level 3 non-confidential response to the LLCC Consultation, page 21.

[1861] See TalkTalk non-confidential response to the LLCC Consultation, page 47.

[1862] As repeated in this Statement at Section 18.

[1863] See BT confidential response to the LLCC Consultation, page 30.

[1864] 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. [1865]

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";[1866]

- other specific cost risks faced by Openreach in the provision of ECCs that it needs to recover 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 [✂]. In some cases, it continued, Openreach has already incurred ECC-related costs that it cannot recover. BT estimated that for around 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.[1867]

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.[1868]

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

[1865] See BT non-confidential response to the LLCC Consultation, page 28.

[1866] See BT non-confidential response to the LLCC Consultation, page 29.

[1867] See BT non-confidential response to the LLCC Consultation, page 30.

[1868] 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 the 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 in to line with costs sooner to prevent embedding an over-recovery in the charge controls. In addition, this could distort decisions around extending a network as ECCs significantly increase the cost of providing a circuit. We are concerned that CPs would be put at a 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 [✂].[1869] 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 [✂] delay in receiving payment. This consists of [✂] 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

[1869] Openreach response to S135 Notice of 14 February 2013 [✂]

of two months for billing and payment. The two months delay also applies for all other ECC work.[1870]

22.55 BT recovers the costs of excess construction upfront. BT recovers connection charges in the same way. We consider that billing and payment for ECC work should be consistent with payment terms for connections, allowing one and a half month delay.[1871] It does not seem reasonable that billing for ECCs takes half a month longer than for connection services. We therefore assumed a [✂][1872] delay in payment for survey and rodding/tubing services and one and 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 [✂] of ECCs revenues.[1873] We took [✂] of ECC revenues for Ethernet from the 2011/12 RFS (£57m) and calculated working capital on the basis of these revenues and a [✂] month delay. We then calculated working capital for the remainder (i.e. [✂]) 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.[1874] This increases BT's costs for ECCs by just under 2%.

22.57 The figure below contains our final start charges.[1875]

[1870] Openreach response to S135 Notice of 14 February 2013 [✂]

[1871] BT response to S135 Notice of 1 July 2011 dated 11 July 2011 and 28 September 2012 dated 2 October 2012.

[1872] [✂]

[1873] Openreach response dated 30 November 2012, Table 1 and response to S135 Notice of 25 May 2012. [✂]. 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.

[1874] This is calculated as follows:

Working capital for surveys and rodding/tubing = [✂]

Working capital for other ECC work = [✂]

Using the real cost of capital of 6.9%, the resulting ECC cost of capital = [✂]

[✂]

[1875] 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 1and 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 do not make any adjustments to these charges.*

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 Ethernet circuits 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 believe that BT 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.[1876] Openreach said that [✂].[1877] 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.[1878] 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 [✂] orders with ECCs quoted, there were only [✂] orders associated with underestimated quotes of which [✂] were cancelled. As such there was [✂].[1879] 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; 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;[1880]
- 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

[1876] BT response to S.135 Notice dated 14 February 2013 [✂] and BT response to S.135 Notice dated 5 Match 2013 [✂]

[1877] Openreach response to information request dated 30 November 2013.

[1878] 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 [✂]

[1879] [✂] BT response to information request dated 30 November 2012.

[1880] The only common costs are the overhead costs allocated relating to the administration of ECCs.

basket would not in itself result in an effective control of their prices, without an additional sub-cap.

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's 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.[1881]

22.73 In contrast, EE and MBNL argued that the use of the GBCI was 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 was weaker than a simple cost pass through and did 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 was inappropriate. Both were concerned that BT's actual construction costs would not be 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.[1882]

22.74 Level 3 welcomed the move to a separate control.[1883] 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.[1884]

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.[1885]

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.

[1881] See BT non-confidential response to the LLCC Consultation, page 27.

[1882] See Combined non-confidential response of EE and MBNL, page 21 and 22.

[1883] See Level 3 non-confidential response to the LLCC Consultation, page 21.

[1884] See Level 3 non-confidential response to the LLCC Consultation, page 19.

[1885] See Telefonica non-confidential response to the LLCC Consultation, page 41.

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 immediately before the beginning of a Relevant Year, expressed as a percentage (rounded to one decimal place).

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 the control 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.[1886]

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 the 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.[1887]

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. These overlapping products are identical except that under Access Locate terms CPs can house a wider range of equipment than under LLU.[1888]

[1886] See Openreach Price list http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=Hj5ChEAyJAPNdhmoASx5w1Q7mlHQ7knfZecxPaxSmFxZ6rNZujnCs99NbIKJZPD9hXYmiijxH6wr%0ACQm97GZMyQ%3D%3D

[1887] See Figure 1.1 in the 2012 WLR LLU CC Statement - http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/statement/statementMarch12.pdf

[1888] Accommodation products used for leased lines allow CPs to locate equipment listed under http://stakeholders.ofcom.org.uk/telecoms/policy/bt-undertakings/ annex 4.

22.87 Also, there is an Access Locate Administration Fee[1889] 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 start and end dates are not aligned with WLR LLU CC.

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.[1890]

22.91 With regard to the Access Locate Administration Fee[1891] 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 had remained the same since May 2005.[1892] 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.

[1889] 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=Hj5ChEAyJAPNdhmoASx5w1Q7mlHQ7knfZecxPaxSmFxZ6rNZujnCs99NbIKJZPD9hXYmiijxH6wr%0ACQm97GZMyQ%3D%3D

[1890] 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).

[1891] 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.

[1892] See http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=kgnGm8XSPQZEY5UMJxGwO9yDfzzeTWgW5o%2FPQLWLvfwlMnGHsqdC0vzO163bJmh34D91D7M0q8u%2F%0AIlSgtIFAKw%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.[1893]

22.96 It urged Ofcom to consider this matter further to try to 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."[1894]

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.[1895]

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%.[1896]

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.[1897]

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.[1898]

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.

[1893] See CWW response to the LLCC Consultation, paragraph 15.26.

[1894] See CWW response to the LLCC Consultation, paragraph 15.27.

[1895] See Level 3 non-confidential response to the LLCC Consultation, page 21.

[1896] See Telefonica non-confidential response to the LLCC Consultation, page 41.

[1897] See BT non-confidential response to the LLCC Consultation, page 31.

[1898] 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.[1899]

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.[1900] 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.

[1899] See BT non-confidential response to the LLCC Consultation, page 31.

[1900] 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 condition[1901] under section 87(9) of the Act. In respect of ECC services, we are imposing 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 a result of our market analysis, in particular our assessment in Section 7 and also in Sections 10, 11, 12, 13 and 14, 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.

[1901] 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, in particular 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 As a result of our market analysis, in particular Section 7, we have concluded 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, for ECC and Accommodation services, BT's ability and incentive to charge excessive prices and the risks of cross-subsidisation, over investment or excessive costs/inefficiencies;

- necessary in that it does not, in our view, impose controls on the prices, for ECC and Accommodation services, BT may charge 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 the risks of cross-subsidisation, over investment or excessive costs/inefficiencies; and

- such that it does not, in our view, produce adverse effects which are disproportionate to the aim pursued which is to address, for ECC and Accommodation services, BT's ability and incentive to charge excessive pricesand the risks of cross-subsidisation, over investment or excessive costs/inefficiencies .

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 99%. 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+2.25% on services within the retail analogue basket (this control has changed from RPI+2.50% as set out in the draft Statement following the announcement of the Budget 2013 by the Chancellor resulting in a change of the tax rate used in our WACC calculation); 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.[1902] 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

[1902] 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.

practical issue of the impending withdrawal of analogue services. Level 3 also supported the proposed safeguard cap.

23.15 In its response BT argued that Ofcom should not have found SMP in the retail low bandwidth TI market.[1903] 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 which will be set at the same level as the controls applied to TI services. The charge control will comprise:

- a cap of RPI+2.25% 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+2.25% 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.[1904]

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.[1905]

23.20 The specific services, and the market to which the safeguard cap applies, are set out in SMP condition 5.4 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

[1903] We discuss BT's comments on this point in our market power assessment, Section 7 above.

[1904] SMP condition 5.4 at Annex 7 of this Statement.

[1905] As identified in the Section 7 of this Statement.

- conferring the greatest possible benefits on the end-users of the public electronic communications services.

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 a result of our market analysis, in particular our assessment in Section 7 and in Section 10, 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 99% share of retail sales of analogue services, almost unchanged since the 2008 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+2.25%, 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+2.25%	Point of handover services (RPI-0%) – a sub-basket control TI Mobile services - RBS, Netstream 16 Longline and SiteConnect (RPI+2.25%) – a sub-basket control Ancillary services, equipment and infrastructure – (RPI+2.25%) - sub-cap on each charge Sub-cap on all charges (RPI+10%)
AI WECLA services	RPI-RPI on each charge	None
Ethernet basket	RPI-11.50%	Interconnection services (RPI-11.50%) – a sub-basket control EAD 1Gbit/s services (RPI-11.50%) – a sub-basket control Sub-cap on all charges (RPI-RPI)
Retail analogue services basket	RPI+2.25%	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

SMP condition	*Groups of services included within the condition*	*Reference for full list of services*
TI services (SMP condition 5.1)	Wholesale low bandwidth TISBO (≤ 8 Mbit/s) – connection and rental; Wholesale medium bandwidth TISBO (> 8 Mbit/s and ≤ 34/45 Mbit/s) outside the WECLA – connection and rental; Wholesale high bandwidth TISBO (> 34/45 Mbit/s and ≤ 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, *p0* 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

<u>The basket control</u>

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);

p0,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;

p1,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;

pt,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;

Ri 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;

W1 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;

Wt 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; and

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.

24.14 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:

$$C_t = \frac{\sum_{i=1}^{n}\left[R_i \frac{(p_{t,i} - p_{0,i})}{p_{0,i}}\right]}{\sum_{i=1}^{n} R_i}$$

where:

Ct 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;

Ri is as defined above;

p0,i is as defined above; and

pt,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 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%).[1906]

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%);

[1906] See LLCC Consultation. Table 10.1, page 169-170.

- AII 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 terms, i.e. RPI-RPI[1907];

- AII 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)[1908];

- 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;

p0 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; and

pt is the published charge made by the Dominant Provider for the specific product or service prevailing at the time, *t*, during 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 Po means in the first relevant year and to change the definition of Po 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 Wt and W1 do not take account of the short first year which could take place under the options we consulted upon. [1909]

[1907] 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%.

[1908] Similarly to AI WECLA services, if RPI were to exceed 5%, we propose that the price cap instead reverts to RPI-5%.

[1909] See BT's non-confidential response to the LLCC Consultation, paragraph 2, page 35.

24.21 CWW noted that the compliance formulae are complex and may lead to unintended consequences.[1910]

Our response and conclusions

24.22 We can confirm that, in the LLCC Consultation, we anticipated that the definition of Po 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 Po had been interpreted to mean the period immediately prior to the start of the relevant year. However, in response to BT's request and in order to address any ambiguity, we are amending the wording of p0 as follows:

> *p0,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 Wt and W1 in the context of this charge control. We have amended the definition of W1 and Wt to account for the eventuality of a short first year. The new definitions are:

> *W1* 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
>
> *Wt* 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 was 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 *Ri* such that it is now defined as:

> *Ri* 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.

[1910] See CWW's response to the LLCC Consultation, paragraph 15.30, page 72.

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 'all other TI' and 'all other Ethernet' sub-cap controls will now apply to all services within the TI basket and all services in the Ethernet basket respectively. 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 2.25% (i.e. RPI+2.25%);
- a basket covering all Ethernet services within the scope of SMP condition 5.3 with a controlling percentage of -11.50% (i.e. RPI-11.50%); and
- a basket covering all Retail analogue services within the scope of SMP condition 5.4 with a controlling percentage of 2.25% (i.e. RPI+2.25%).

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 2.25% (i.e. RPI+2.25%);
- Ethernet Interconnection services within the scope of SMP condition 5.3, with a controlling percentage of -11.50% (i.e. RPI-11.50%); and
- Ethernet EAD 1Gbit/s services within the scope of SMP condition 5.3, with a controlling percentage of -11.50% (i.e. RPI-11.50%).

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 2.25% (i.e. RPI+2.25%);
- AII 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 terms, (i.e. RPI-RPI);[1911]

[1911] 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%.

- AII Ethernet services within the scope of SMP condition 5.3, with a controlling percentage of 0% in nominal terms (i.e. RPI-RPI);[1912]

- 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%)

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.

[1912] Similarly to AI WECLA services, if RPI were to exceed 5%, we propose that the price cap instead reverts to RPI-5%.

> 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;[1913]
- that where new products are introduced with enhanced features, these fall out of the control until the next review period;[1914] 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.[1915]

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.[1916]

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.

[1913] See BT's non-confidential response to the LLCC Consultation, paragraphs 6-7, page 36.

[1914] See BT's non-confidential response to the LLCC Consultation, paragraph 8, pages 36-37.

[1915] See BT's non-confidential response to the LLCC Consultation, paragraph 9, page 37.

[1916] See Exponential-e non-confidential response to the LLCC Consultation, Section 10, pages 14-15.

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:

i) we confirm that EBD is a single-service Ethernet product within the charge control;

ii) BT is obliged to provide 2.5 Gbit/s and 10 Gbit/s single-service Ethernet access and backhaul; and

iii) 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 sub-paragraph 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 Following consultation, there has been no change to the wording of the material change condition set out above.

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)[1917] 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.

[1917] The Central and East London Area.

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 should the start of the charge control shift, they suggested "using the month which is six months prior to the start date".[1918]

24.51 Respondents commented on our proposal to adopt the GBCI index for the control of ECC services. Level 3 and EE and MBNL all disagreed with our proposal. We have discussed this in more detail in Section 22 of this document.

24.52 BT sought a number of clarifications on the practical application on compliance:

- for 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;[1919] and
- where the charge for shifts and cancellations is linked to the price of another product (95% of a connection charge, for example), compliance should be inherent on the product it is linked to being compliant.[1920]

Our response and conclusions

24.53 Details of our approach to prior year weights are 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 rental volumes at 30 September in the year before the start of the charge control year multiplied by the average price during the 12 months prior to the start of the charge control year, so 30 September 2012 for the control year starting 1 April 2013.[1921] For other products and services the relevant volumes would be the cumulative volumes in the year to 30 September 2012, so 30 September 2012 for the control year starting 1 April 2013.

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 12 months preceding the start of the Relevant Year on which that charge applied) exclusive of discounts in the 12 months preceding

[1918] See BT non-confidential response to LLCC Consultation, paragraph 4, page 36.

[1919] See BT non-confidential response to the LLCC Consultation, paragraph 19, pages 38-40.

[1920] See BT non-confidential response to the LLCC Consultation, paragraph 29, page 41.

[1921] 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.

the start of 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 12 months preceding the start of 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 2013.

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 Statement by average charges exclusive of discounts in the 12 months preceding the start of 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 Statement by average charges exclusive of discounts in the 12 months preceding the start of 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 12 months preceding the start of the Relevant Year on which that charge applied) exclusive of discounts in the 12 months preceding the start of 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 12 months preceding the start of 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.

i) 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).

ii) This allows for the revenue split between WECLA and non-WECLA.

iii) 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 Sections 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 we proposed that none of the volume, term and geographic discounts offered by BT would count towards meeting its charge control obligations. Specifically, we proposed that 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.[1922]

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 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.

[1922] See BT non-confidential response to the LLCC Consultation, paragraphs 4-15, pages 12-14.

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 it 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 its customers 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 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.[1923]

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 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 control limits the flexibility of a smaller group of services to a greater extent 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 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.

[1923] See BT non-confidential response to the LLCC Consultation, paragraph 11, page 37.

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 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 EAD 1Gbit/s 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 year[1924]. 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 account[1925]. If BT were to delay a decrease (relative to making any charge adjustments on of the anniversary of the control coming into force in each

[1924] 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.

[1925] 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%.

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.

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.[1926]

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.[1927]

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 is expanded within its secondary accounting documents available on BT's website.[1928]

[1926] See BT non-confidential response to the LLCC Consultation, paragraph 34, page 41.

[1927] Specifically, BT "shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters concerned with Network Access."

[1928] http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/index.htm

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.

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. For the avoidance of doubt, the Starting Charge Adjustment Values will apply on the first day of the charge control, and will not require 28 days' notice under Condition 7.4(b) of the SMP conditions. This is because the adjustment is being required by Ofcom so Condition 7.3 applies.

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 effect 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".[1929]

[1929] See CWW response to the LLCC Consultation, paragraph 15.31, page 72.

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.[1930]

24.93 BT also asked us to confirm the notification period for price increases of 90 days will not apply to price increases following special offers reverting back to a higher price.[1931]

Our response and conclusions

24.94 In response to CWW and Level 3's responses, 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

<u>The LLCC Consultation proposals</u>

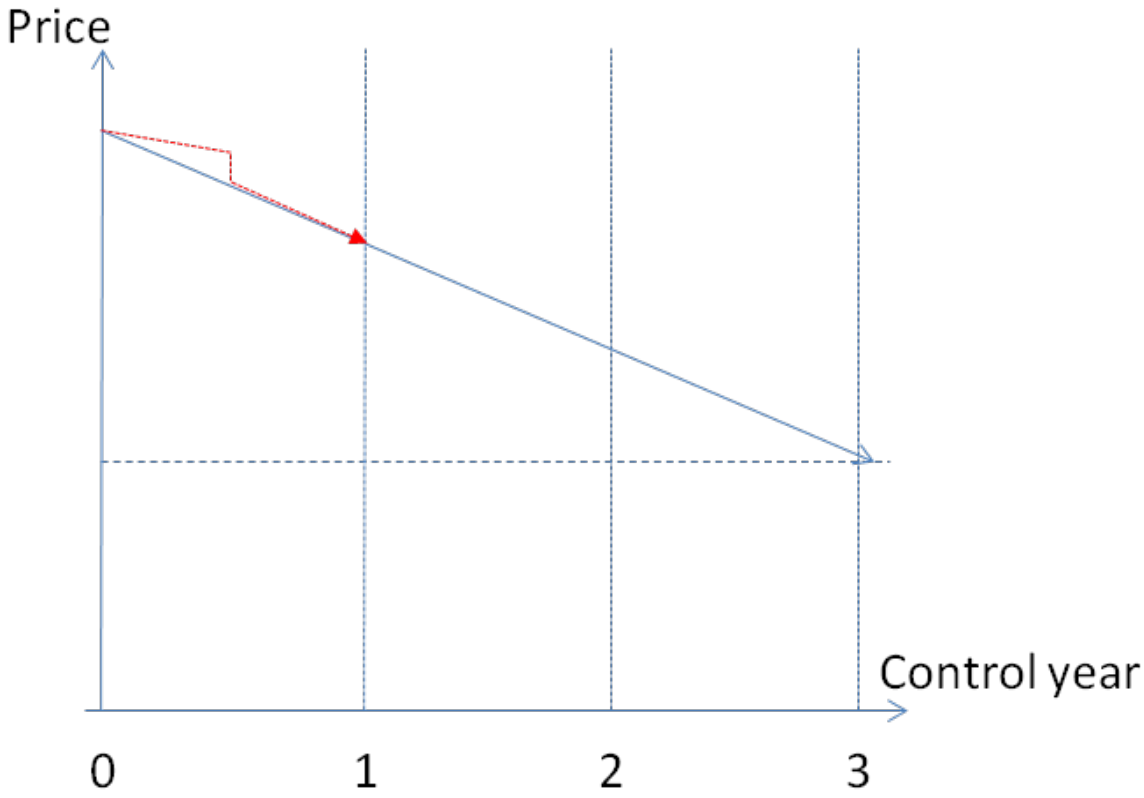
24.99 The previous charge controls expired on 30 September 2012. In the LLCC Consultation, we put forward two options to reflect the impact of a deferred start to these charge controls.

[1930] See BT non-confidential response to the LLCC Consultation, paragraph 12, page 37.

[1931] See BT non-confidential response to the LLCC Consultation, paragraph 13, page 37.

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 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. 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 £13m[1932] higher than would have been allowed under the charge control".[1933] 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.[1934]

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".[1935]

24.106 EE and MBNL asked us for clarification over how quickly the new charge controls will come into force, and for how long.[1936] 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.[1937]

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".[1938]

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".[1939]

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.[1940]

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 that (subject to limited exceptions) markets subject to an SMP determination, must be reviewed within three years. This requirement reduces the

[1932] 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 x 9% x 6 / 12) than it should have been.

[1933] See TalkTalk non-confidential response to the LLCC Consultation, page 52, paragraph 6.2.

[1934] Email from TalkTalk – 26 October 2012.

[1935] See Verizon non-confidential response tor the LLCC Consultation, page 3.

[1936] See EE and MBNL combined non-confidential response to the LLCC Consultation, page 19.

[1937] See CWW response to the LLCC Consultation, paragraph 15.31, page 72.

[1938] See UKCTA response to the LLCC Consultation, page 28.

[1939] See EE and MBNL combined non-confidential response to LLCC Consultation, page 26.

[1940] Virgin non-confidential response to the LLCC Consultation, page 26.

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. 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.