



WBA Charge Control

Charge control framework for WBA Market 1 services
(~~Redacted~~ Redacted version)

Statement

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Section 1

Executive Summary

- 1.1 Broadband is increasingly central to the lives of UK consumers and the success of businesses. It allows consumers to access and interact with a wide range of content and services and allows businesses to exploit new market opportunities and more efficient operating models. Competition has driven the success of the current generation of broadband services. The result has been greater choice, innovation, lower prices and high levels of broadband adoption.
- 1.2 In the *'Review of the wholesale broadband access markets – Statement on market definition, market power determination and remedies'* ("the 2010 WBA Statement")¹ published on 3 December 2010, we found there is effective competition in areas covering almost 80% of the premises in the UK. However, in Market 1 – made up of exchange areas in which BT is currently the only provider of wholesale broadband services – we decided that BT² should be subject to a charge control. On 20 January 2011, we set out our proposals on the structure, form and level for the charge control in the WBA Market 1 areas (the "January Consultation")³ and requested stakeholders' views on these.
- 1.3 This statement sets out our conclusions on the charge control for Wholesale Broadband Access (WBA) services in Market 1. We set out below our conclusions following consideration of the responses to the January Consultation.
- 1.4 We believe that the benefit of the wholesale charge reductions resulting from this charge control could deliver lower retail prices and also improve broadband users' experience in Market 1. As average demand increases as more consumers seek to use higher bandwidth services, we believe that internet service providers (ISPs) will reflect the benefits arising from the charge control in better quality of service, as this is likely to be an important focal point for broadband retail competition in Market 1 areas.

The January Consultation proposals

- 1.5 In our January Consultation we proposed the following:
 - An RPI-X control with a single charge control basket;
 - A value of X in the range 10.75% to 14.75% with a central estimate of 12.75%;
 - Charge control only BT's IPStream Connect Max and Max Premium products;
 - A moving anchor pricing approach to setting the control;
 - Three characteristics for the anchor product:
 - Maximum bandwidth on the end user access component – up to 8 Mbit/s;

¹<http://stakeholders.ofcom.org.uk/binaries/consultations/wba/statement/wbastatement.pdf>

² Our decision on the WBA charge control is addressed to BT plc. as a whole. It should be noted that however that the charge controlled product is supplied by BT Wholesale ("BTW").

³<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/summary/condoc.pdf>

- Average allocated bandwidth per end user of 48kbit/s in 2010/11; and
- Annual growth rate of 23%.

Stakeholder responses

- 1.6 We received 17 responses to our January 2011 Consultation from a number of communication providers (CPs), and a range of other stakeholders.⁴ A full list of respondents is included in Annex 2 of this statement, and all non-confidential responses are published on our website.⁵ As set out in this statement, responses included comments on the following:
- Scope of the charge control – the majority of stakeholders agreed with the our proposal to charge control IPStream Connect only;
 - Bandwidth growth profile – Respondents were most clearly divided on this issue. BT and TalkTalk Group (TTG) considered that our estimates for bandwidth growth were too aggressive. On the other hand, Sky, Cable & Wireless Worldwide (C&WW) and another respondent considered our assumptions to be too conservative;
 - Underlying assumptions used in our cost modelling – Most stakeholders agreed with our proposed assumptions, though some also suggested some variations;
 - Cost of capital – Sky and TTG jointly commissioned a report from Europe Economics (EE). BT commissioned a report from Oxera; and
 - The exclusion of any deficit repair payments when assessing BT's costs of providing the WBA services.
- 1.7 The responses included comments from four local Councils which emphasised how broadband services are important for their rural communities. We also received six responses from individuals. Of these responses, the majority were from consumers in Market 1 areas concerned about continued slow broadband speeds, whilst the rest were generally supportive of our approach.
- 1.8 In the following sections, we respond to the comments made by stakeholders. These comments have informed our final decision on the design and methodology of the WBA Market 1 charge control. In reaching our decisions, we also explain how our approach meets our legal duties. Below we provide a summary of our conclusions.

Summary of our decisions

- 1.9 Our decision on the WBA charge control to be applied in Market 1 is as set out in this statement. This statement constitutes our impact assessment.

⁴ Of these, five were received from Communication Providers (CPs), four from local Councils, one from a local business and one from the Communications Workers Union (CWU), with the remaining six from individuals.

⁵<http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/?showResponses=true&pageNum=2>

We are charge controlling BT's 8Mbit/s IPStream Connect product

- 1.10 We are imposing this charge control on the IPStream Connect 8Mbit/s (Max and Max Premium) product only. It is the maximum downstream speed currently available and the product most used by end users in Market 1. We conclude therefore that charge controlling this product directly protects most consumers in Market 1 and constrains BT from excessive charging on the other products available in Market 1.

We are implementing an RPI-X charge control, with a single charge control basket, running until March 2014

- 1.11 We are implementing an RPI-X charge control as we believe that it will protect users by preventing BT from exploiting its SMP to increase prices and will provide BT with incentives to adopt new technologies where it is efficient to do so and to seek efficiency savings whilst also providing benefits to consumers.
- 1.12 We are implementing a charge control regime up to 31 March 2014. This period of just under three years is consistent with the new procedures and timeframes introduced by the amendments to the EU regulatory framework,⁶ which was implemented in the UK on 26 May 2011. It is also consistent with the forward look period considered in the 2010 WBA Statement.
- 1.13 We are implementing a single control basket with a safeguard cap on certain services within the basket. Details of the charge control basket and safeguard caps are set out in Table 1.1.

Cost modelling

- 1.14 We have developed a cost model to design the charge control in Market 1 and the underlying cost base for the control period. Key elements of our modelling approach include the following:
- We have decided to use Current Cost Accounting Fully Allocated Costs (CCA FAC) as the appropriate cost standard to set the control;
 - We project that demand for bandwidth per end user will increase by 30% each year; and
 - We have made a number of adjustments to BT's reported cost to ensure the base year data are relevant and reliable. These include:
 - reflecting the new market definition boundaries, as determined in the 2010 WBA Statement;
 - removing any 'one-off' costs that are outside the charge control basket;
 - attributing 'non-geographic costs' between the three markets; and
 - reflecting the ongoing economic value of some assets that would otherwise be treated as fully or nearly fully depreciated.

⁶<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0037:0069:EN:PDF>

Cost of Capital

- 1.15 In deriving the value of X, our aim is to define charging constraints such that, by the end of the charge control period, BT is expected to be able to earn a level of return on the basket of services that is equal to its weighted average cost of capital (“WACC”).
- 1.16 We have taken into account the responses we received on the cost of capital in the context of our January Consultation and have finalised BT’s cost of capital figure for the purposes of setting this charge control. We have also taken account of all the responses on the cost of capital to the LLU Consultation received up to the 8 July LLU Consultation closing date to inform our LLU decision on the cost of capital.⁷ The derivation of the cost of capital figure for the WBA charge control is described in Section 6.
- 1.17 In determining the cost of capital for WBA services, we have taken into account the recent Competition Commission determinations in the Leased Lines charge control appeal (the ‘LL Appeal Determination’),⁸ LLU charge control appeal (the ‘LLU Appeal Determination’)⁹ and the WLR charge control appeal (‘WLR Appeal Determination’),¹⁰ in particular regarding whether it is reasonable for Ofcom to estimate two different costs of capital within the BT Group, one for copper access services and one for the remainder of the group’s activities (‘Rest of BT’).
- 1.18 Our view is that the risk characteristics of WBA services justify the use of the ‘Rest of BT’ rate which we estimate to be 9.7% (pre-tax nominal). This is higher than the mid-point of our January Consultation estimate of 9.3%.
- 1.19 In real terms, our final estimate is 6.5%, compared to our January consultation mid-point of 6.6%.

Treatment of pension costs

- 1.20 We have not included costs related to the repair of BT’s pension deficit. In excluding such costs, we have been consistent with our pensions review statement (‘the Pensions Review’)¹¹ which we published in December 2010. This contained our pensions cost guidelines (‘the Pension Guidelines’) which 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.
- 1.21 We explained that, while we expect the Pension Guidelines to form an important consideration in relevant cases, we intend to apply the Pension Guidelines on a

⁷ <http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/update/>

⁸ See the Competition Commission’s determination in “The Cable & Wireless UK v Office of Communications”, 30 June 2010, cases 1112/3/3/09 http://www.competition-commission.org.uk/appeals/communications_act/final_determination_excised_version_for_publication.pdf

⁹ See the Competition Commission’s determination in “The Carphone Warehouse Group plc v Office of Communications”, 31 August 2010, cases 1111/3/3/09 http://www.competition-commission.org.uk/appeals/communications_act/llu_determination.pdf (the “LLU Appeal Determination”)

¹⁰ See the Competition Commission’s determination in “The Carphone Warehouse Group plc v Office of Communications”, 31 August 2010, cases 1149/3/3/09 (the “WLR Appeal Determination”)

http://www.competition-commission.org.uk/appeals/communications_act/wlr_determination.pdf.

¹¹ <http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/statement/statement.pdf>

case-by-case and will always act consistently with our duties and applicable legal tests under the Communications Act. Although the Pension Guidelines set out the approach that we would normally expect to take, each case will be considered on its own merits.

- 1.22 As specified in the Pensions Review,¹² if we decide to depart from the Pension Guidelines in a particular case, we will set out our reasons for doing so. As a general rule, unless we consider that there has been a material change in the circumstances and background considered as part of our review, we are not expecting to depart from the Pension Guidelines.
- 1.23 We do not consider that there are any factors relating to the WBA charge control in particular which would support the adoption of an approach other than expressed in our Pension Guidelines.
- 1.24 As BT acknowledges, the arguments it raised in response to the WBA charge control are not new. We consider that these arguments have been dealt with either in the consultations or statement of the Pensions Review. For ease of reference, we summarise our view on the points reiterated by BT as part of its response in Annex 3. However, we also refer readers to the appropriate sections of the Pensions Review for our detailed analysis.¹³

Value of X

- 1.25 We are implementing a charge control RPI-12.00% which will last until 31 March 2014. As shown in Table 1.1, the control is within the range of values published by Ofcom in our January Consultation.
- 1.26 In addition, we are imposing RPI-0% sub-caps for a number of services within the basket, to ensure that charges for these services do not increase in real terms over the charge control period. We are setting cease charges to zero.

¹² See Paragraphs 3.13 and 8.15 plus Annex 1.

¹³ In particular, see Sections 3, 4 and 5 of the Pensions Review (cited above).

Table 1.1 – Summary of the charge control baskets¹⁴

Basket	Services within scope	Value of X	Value of sub-cap
IPStream Connect	IPS Connect Max and Max Premium (up to 8 Mbit/s) End User Access (EUA) – connection and rental;	RPI-12.00%	
	IPS Connect EU bandwidth charge per month;		
	IPS Connect contracted bandwidth per Mbit/s per node rental;		RPI-0%
	IPS Connect EUA re-grade		RPI-0%
	IPS Connect EUA migration		RPI-0%
	IPS Connect EUA cancellation		RPI-0%
	IPS Connect communication provider handover rental		
	IPS Connect 20C interconnect links 1Gbit/s and 10Gbit/s rental		

The impact of the delay

- 1.27 The value of X is determined as though the charge control was a three-year control in force from the 1 April 2011 to 31 March 2014. As the control comes into effect on 17 August 2011,¹⁵ we make a number of modifications to the charge control SMP conditions ('the Conditions') so that they are appropriate to the shorter period for which the control will apply.
- 1.28 These modifications were intended to take into account any price changes BT may make between 1 April 2011 and the start of the new charge control. This is because our X is calculated with reference to the prevailing prices on 1 April 2011, and that these need to be reduced in order to bring revenues in line with costs at the end of the charge control. Therefore, if BT's prices on 17 August 2011 is higher than that assumed in our RPI-X model then, all else being equal, the value of the X would need to be increased in the first year to take this into account. The formula set out in the Conditions (see Annex 1) has been designed to achieve this objective.
- 1.29 BT made a number of price changes on 1 April 2011 that are relevant to this charge control. The new prices have been used to generate our value of X.
- 1.30 For assessing compliance, we have also modified the Conditions so that the first year covers the period from 17 August 2011 to 31 March 2012.

¹⁴ This table refers to the services as currently being named in Part 8 (BT IPStream Connect) of BT's Service Provider Price List website ([BT Price List](#)). The description of services included in the charge control basket is in Annex 1.

¹⁵ 28 days after this statement date to allow price change notification period.

Section 2

Introduction

- 2.1 The WBA Statement followed two consultations setting out our proposals for the market review. We published our first consultation (“the First WBA Consultation”)¹⁶ in March 2010 and we published our second consultation (“the Second WBA Consultation”)¹⁷ in August 2010. The first consultation discussed a full set of proposals (including introducing a charge control) whilst the second consultation focused on an amended approach to geographic market definition and the effect of this amended approach on our market power assessment and remedies proposals.
- 2.2 In the 2010 WBA Statement published on 3 December 2010,¹⁸ we set out the conclusions of our review of the wholesale market for broadband access in the UK. We found BT to have SMP in WBA Market 1 and Market 2 and concluded that a charge control remedy should be applied to BT in Market 1.
- 2.3 On 20 January 2011, we published a separate consultation on the charge control proposals for WBA Market 1 (the “January Consultation”). This consultation closed in March 2011. We received 17 responses to the January Consultation (five of these from communication providers (CPs)) which we have analysed and taken into consideration when formulating our decision. Annex 1 contains a list of the respondents. In this statement, we set out our conclusions on the charge control for WBA services in Market 1.
- 2.4 The purpose of this section is to summarise:
- The background to the WBA charge control in Market 1;
 - The legal and regulatory framework for charge controls; and
 - The structure of this document.

Wholesale broadband access market review 2010

- 2.5 The first step in our market review process was to identify the relevant product and geographic markets for the WBA market. We concluded that the relevant wholesale broadband access product market is:

“Asymmetric broadband access and any backhaul as necessary to allow interconnection with other communications providers which provides an always on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial up connection. This market includes both business and residential customers.”¹⁹

¹⁶Review of the wholesale broadband access markets, 23 March 2010

<http://stakeholders.ofcom.org.uk/consultations/wba/>

¹⁷Review of the wholesale broadband access markets: second consultation, 20 August 2010

<http://stakeholders.ofcom.org.uk/consultations/wholesale-broadband-markets/>

¹⁸<http://stakeholders.ofcom.org.uk/binaries/consultations/wba/statement/wbastatement.pdf>

¹⁹Ibid, paragraph 1.17

- 2.6 We also concluded that there are four separate geographic markets in the UK as follows:
- Hull Area: 0.7% of the UK premises;
 - Market 1: exchanges where only BT is present (11.7% of premises);²⁰
 - Market 2: exchanges where two Principal Operators (POs)²¹ are present or forecast and exchanges where three POs are present or forecast but where BT's share is greater than or equal to 50% (10.0% of premises); and
 - Market 3: exchanges where four or more POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is less than 50% (77.6% of premises).
- 2.7 We then examined the market position of CPs in each of the geographic markets defined above and concluded that:
- KCOM holds a position of Significant Market Power (SMP) in the provision of WBA services in the Hull area;
 - BT holds a position of SMP in the provision of WBA services in Market 1;
 - BT holds a position of SMP in the provision of WBA services in Market 2; and
 - No operator holds a position of SMP in Market 3.

The 2010 WBA Statement's proposals for a charge control

- 2.8 As noted above, we concluded in the 2010 WBA Statement that BT had SMP in Market 1. BT is currently the monopoly provider in this geographic market and, even when the potential for future entry is accounted for, we considered that this did not act to constrain BT's wholesale prices. As such, we concluded BT has the ability and the incentive to set prices above the competitive level and that BT's competitors at the retail level would be forced to pay these high prices in Market 1 in order to be able to provide retail services on a national basis. We therefore concluded that an ex-ante charge control obligation would be necessary to address BT's SMP in Market 1.
- 2.9 In Market 1 we also concluded it was unlikely that BT would have the incentive to reduce its costs and set prices at the competitive level, especially in those exchanges where there is no potential for future entry. In addition, there are significant costs related to the WBA market that are not specifically allocated to the different geographic markets. BT could potentially seek to recover a disproportionate amount of these costs, as well as common costs, through its prices in Market 1. Higher wholesale charges would ultimately be passed on as higher retail prices.

²⁰ Market 1 consists of 3,389 exchange areas covering 3.3m premises of the UK.

²¹ POs include those operators large enough to impose a material competitive constraint and exclude those that are clearly niche operators. In the 2010 WBA review we identified those relatively large operators with a substantial presence across the UK as a whole on the basis of network coverage (along with national market shares) without a rigid market share threshold. See paragraph 3.81 of 2010 WBA Statement.

2.10 The 2010 WBA Statement concluded that imposing a charge control would address these concerns. It would provide more certainty over the life of the control period about the maximum level of WBA charges. It would also result in prices being based on a forward-look view of the costs related to provision of service in Market 1, taking into account efficiency improvements.²² At the same time, the charge control would give BT incentives for future investment that will benefit consumers and citizens. We discuss this in more details in Section 3.

Revised base case scenario update

2.11 In line with our transparency obligation and our framework for disclosure of charge control models²³, we published a non-confidential version of the RPI-X model on the 15 February 2011. We believe that the methodology we followed ensured that stakeholders were able to respond effectively to the consultation.

2.12 Following discussions with stakeholders, we made the following changes to the model which are discussed in further detail in Section 5:

- Exclude Openreach SMPF pass-through charges from the revenue calculation in line with the compliance formula as set out in the Notification;
- Use real asset price changes for the holding gains/loss calculation;
- Use 2009/10 DSLAM numbers for allocating base year costs rather than 2008/09 numbers used in the January Consultation; and
- Use of BT's prices as at 1 April 2011.

2.13 Table 2.1 below shows their combined effect on the base case.

Table 2.1 – Revised base case scenario changes

	Base case basket X
January Consultation	12.75%
Revised base case	12.25%

We have set this charge control in light of our legal framework

2.14 This Statement follows our January Consultation and the 2010 WBA Statement which concluded on 3 December 2010. As part of the 2010 WBA market review process, on 23 March 2010 we published a consultation document (the “2010 WBA First Consultation”),²⁴ where at Annex 6 (entitled “Market review process”) we set out an overview of the market review process, including the imposition of remedies and regulatory tools as reflected in the Act, to provide appropriate context and understanding to the matters discussed in that review.

²² <http://stakeholders.ofcom.org.uk/binaries/consultations/wba/statement/wbastatement.pdf>, paragraph 5.292

²³ http://stakeholders.ofcom.org.uk/binaries/consultations/784024/Charge_control.pdf

²⁴ <http://stakeholders.ofcom.org.uk/binaries/consultations/wba/summary/wbacondoc.pdf>

- 2.15 This Statement does not seek to repeat all of the information provided in that Annex, which remains relevant to understanding the context for the WBA charge control in Market 1.
- 2.16 Under section 86 of the Act, Ofcom can set an SMP services condition by a notification which does not also make the market power determination when the condition is set by reference to a market power determination made in relation to a market in which Ofcom is satisfied there has been no material change since the determination was made. We discussed the no material change since the market power determination for Market 1 in the paragraphs above. We considered the relevant legal tests for imposing a charge control as an SMP condition under section 87(9) of the Act in the January Consultation. In Section 7, we set out our reasoning as to why we consider our proposed charge control condition meets each of those relevant tests.
- 2.17 Secondly, section 88 of the Act prohibits the setting of SMP conditions under section 87(9) of the Act except where it appears, from the market analysis, that there is a relevant risk of adverse effects arising from price distortion; and it 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 end users. We are also required to take into account the extent of BT's investment in wholesale broadband access.
- 2.18 Thirdly, we consider whether the proposed condition meets the test set out at section 47 of the Act. In summary, section 47 requires that any SMP condition must not be imposed unless it is:
- Objectively justifiable in relation to the services to which it relates;
 - Not such as to discriminate unduly against particular persons;
 - Proportionate to what the condition is intended to achieve;
 - In relation to what it is intended to achieve, transparent.
- 2.19 In addition, we have ensured that the condition proposed remains consistent with our general duties under section 3 of the Act and our duties for the purpose of fulfilling our Community obligations as set out under section 4 of the Act.
- 2.20 Under section 3, our principal duty in carrying out functions is to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, where appropriate by promoting competition. In so doing, we are required to secure a number of specific objectives and to have regard to a number of matters set out in section 3 of the Act. As to the prescribed specific statutory objectives in section 3(2), we considered in the 2010 WBA First Consultation that the objective of securing the availability throughout the UK of a wide range of electronic communications services was particularly relevant to the market review, and therefore to the proposed regulation in this review.
- 2.21 In performing our duties, we are also required to have regard to a range of other considerations, as appear to us to be relevant in the circumstances. In the 2010 WBA First Consultation, we considered that a number of such considerations were relevant to the market review, namely the desirability of promoting competition in relevant markets, the desirability of encouraging investment and innovation in

relevant markets and the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.

2.22 Section 4 of the Act requires us to act in accordance with six European Community requirements for regulation. In the 2010 WBA First Consultation, we considered that the s4(1), s4(3), s4(4) and s4(5) requirements were of particular relevance to the market review, namely to:

- Promote competition in the provision of electronic communications networks and services, associated facilities and the supply of directories;
- Promote the interests of all persons who are citizens of the European Union;
- Take account of the desirability of Ofcom's carrying out of its functions in a manner which, so far as practicable, does not favour one form of or means of providing electronic communications networks, services or associated facilities over another, i.e. to be technologically neutral; and
- Encourage, to such extent as Ofcom considers appropriate for certain prescribed purposes, the provision of network access and service interoperability, namely securing efficient and sustainable competition and the maximum benefit for customers of communications providers.

2.23 We are satisfied that the charge control imposed on BT in this statement fulfils our policy aims and objectives as well as the relevant requirements specified in the Act and relevant Directives. We explain this further in Section 7.

We have taken into account the ERG Remedies Position

2.24 When concluding on the form of our charge controls, we have also taken into account the ERG Remedies Position on the approach to appropriate remedies in the regulatory framework for electronic communications networks and services.²⁵

2.25 The ERG agreed a Common Position Paper on 1 April 2004 relating to appropriate remedies in the new regulatory framework for electronic communications. The ERG Paper aims to ensure a consistent and harmonised approach to the application of remedies by NRAs in line with the Community law principle of proportionality, and with the new framework's key objectives of promoting competition, contributing to the development of the internal market and promoting the interests of EU citizens.

2.26 The ERG paper sets out four principles that should be adhered to when imposing remedies. These are:

- The need to produce reasoned decisions;
- Where infrastructure competition is not likely to be feasible, access to wholesale inputs should be made available;
- Where infrastructure competition is feasible, remedies should assist in the transition process to a sustainable competitive market; and
- Remedies should be, where possible, incentive compatible.

²⁵ http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

We will notify the European Commission and the Secretary of State

- 2.27 In Annex 5 of the January Consultation, we notified the Commission of our draft proposals for the setting of SMP services condition on BT under section 48(2) and 86 of the Communications Act 2003 (the Act).
- 2.28 We note that the revised Article 7 of the Framework Directive²⁶ has modified the notification procedure to the European Commission.²⁷ The revised Framework Directive was transposed in UK law by the Electronic Communications and Wireless Telegraphy Regulation 2011('the Regulation') which came into force on 26 May 2011.
- 2.29 The transitional provisions of the Regulations (Schedule 3) specify that the revised process does not apply for proposals which were notified to the European Commission under the previous procedure before 26 May 2011, i.e. before the transposition. On this basis, we will follow the notification procedure which was in place before the transposition of the revised Framework. We will therefore send a copy of the notification in Annex 1 and the accompanying explanatory statement to the European Commission in accordance with sections 81(2) of the Act. In addition, we send a copy of the notification and the accompanying explanatory statement to the Secretary of State under section 81(1) of the Act.

We have taken into account our specific policy objectives when developing our conclusions

- 2.30 As discussed in Section 5 of the 2010 WBA First Consultation²⁸ our specific policy objectives in the charge controls for WBA services in Market 1 are to:
- Prevent BT from setting excessive charges for WBA services in Market 1 where it has SMP while providing incentives for it to increase its efficiency;
 - Ensure that prices are subject to appropriate controls whilst still encouraging BT to maintain service quality and innovation in WBA services in Market 1;
 - Promote efficient and sustainable competition in the delivery of broadband services;
 - Provide regulatory certainty for BT and its customers and to avoid undue disruption;
 - Encourage investment and innovation in the relevant markets; and
 - Ensure that the delivery of the regulated services is sustainable, in that the prevailing prices provide BT with the opportunity to recover all of its relevant costs (where efficiently incurred), including its cost of capital.

²⁶<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0037:0069:EN:PDF>

²⁷Under the revised procedure, National Regulatory Authorities (NRAs) are required to notify their draft decision to the European Commission, the Body of the European Regulators for Electronic Communications (BEREC) and other national regulatory authorities upon completion of their own domestic consultation and having taken into account all stakeholder responses. The European Commission, BEREC and other NRAs may make comments within a month. The notifying NRA needs to take utmost account of any Commission and BEREC opinions.

²⁸<http://stakeholders.ofcom.org.uk/binaries/consultations/wba/summary/wbacondoc.pdf>, paragraphs 5.58 – 5.67

- 2.31 We have considered these policy objectives when taking the charge control decisions.

Disclosure of data and model disclosure

- 2.32 In light of our statutory duties, in particular our duty to consult, and our framework for disclosure of charge control models, we published a non-confidential version of the model on 15 February 2011. We took properly and appropriately account of BT's position on confidentiality of data for the purpose of disclosure of data. We believe that the methodology we followed ensured that stakeholders were able to respond effectively to the consultation.
- 2.33 In line with the transparency framework principles, we will be publishing the non-confidential version of the RPI-X charge control model used to determine the value of X imposed in this statement in the second half of July.

Impact assessment

- 2.34 The analysis presented in this document represents an impact assessment, as defined in section 7 of the Act. In Sections 3, 4 and 5 we discuss all of the relevant considerations and options that we have considered, including their impact.
- 2.35 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the Act, which requires Ofcom to carry out impact assessments where its proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of its policy decisions. For further information about Ofcom's approach to impact assessments, see the guidelines, '*Better policy-making: Ofcom's approach to impact assessment*'.²⁹
- 2.36 Specifically, pursuant to section 7 of the Act, an impact assessment must set out how, in our opinion, the performance of our general duties (within the meaning of section 3 of the Act) is secured or furthered by or in relation to what we propose.

Equality Impact Assessment

- 2.37 Ofcom is separately required by statute to assess the potential impact of all our functions, policies, projects and practices on race, disability and gender equality. Equality impact assessments (EIAs) also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity. Unless we otherwise state in this document, it is not apparent to us that the outcome of our review is likely to have any particular impact on race, disability and gender equality. Specifically, we do not envisage the impact of any outcome to be to the detriment of any group of society.
- 2.38 Nor are we envisaging any need to carry out separate EIAs in relation to race or gender equality or equality schemes under the Northern Ireland and Disability Equality Schemes. This is because we anticipate that our regulatory intervention will affect all industry stakeholders equally and will not have a differential impact in

²⁹http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf

relation to people of different gender or ethnicity, on consumers in Northern Ireland or on disabled consumers compared to consumers in general. Similarly, we are not envisaging making a distinction between consumers in different parts of the UK or between consumers on low incomes. Again, we believe that our intervention will not have a particular effect on one group of consumers over another.

Structure of this document

2.39 This document consists of seven main sections setting out our decisions for the Wholesale Broadband Access (WBA) charge control in Market 1. In particular:

- Section 3 outlines our approach to selecting the charge controlled WBA products;
- Section 4 sets out our conclusions on the form and duration of the charge control;
- Section 5 sets out the steps in the implementation of the charge control;
- Section 6 sets out our conclusions on the cost of capital; and
- Section 7 sets out our conclusions on whether the charge control in Market 1 is consistent with the legal tests and duties set out in the Act.

2.40 In addition, there are three annexes which support our decisions. In particular:

- Annex 1: includes our Notification under the 2003 Communications Act in which we set out Conditions which constitute the legal instrument for imposing the charge control obligations;
- Annex 2: Lists the respondents to the January Consultation; and
- Annex 3: includes our detailed response to BT's pension deficit payments repair.

Section 3

The charge controlled WBA product

Introduction

3.1 In Section 3 of the January Consultation we explained the approach we proposed to take to setting the WBA charge control and asked for views on how the WBA products to be subject to the control should be defined. In this section we start by providing a high level description of the WBA market and the products currently available before setting out the responses to our consultation questions on:

- The use of the anchor pricing approach to setting the charge control based on a moving anchor product;
- The products within BT's range of WBA products to charge control; and
- The characteristics of the anchor product.

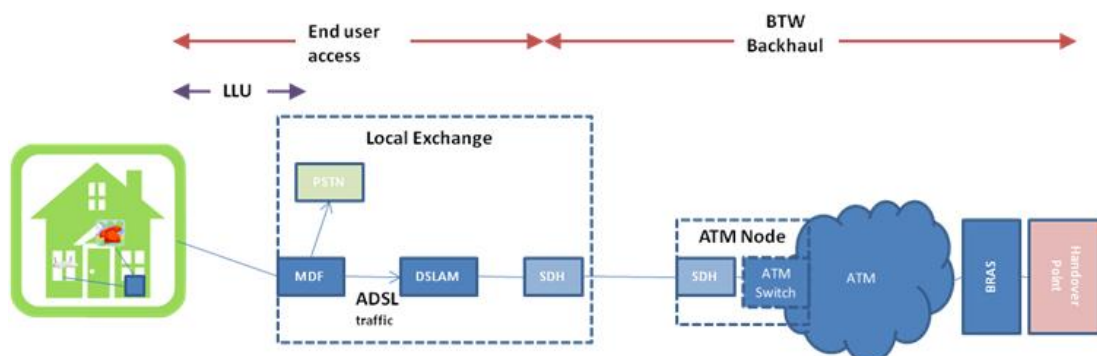
The Wholesale Broadband Access (WBA) market

Elements of a WBA service

3.2 As set out in Paragraphs 3.6 to 3.18 of the January Consultation, the WBA products BT provides on a national basis to CPs can be considered as being made up of three distinct elements (illustrated in Figure 3.1):

- End User Access (EUA);
- Backhaul; and
- Handover (which may include core network).

Figure 3.1: Elements of a WBA service



3.3 The EUA part of the WBA service includes the network elements from the end user premises to the local serving exchange. For current generation products based on BT's copper access network, the EUA component includes BT's local copper access network, the Main Distribution Frame (MDF) in BT's local serving exchange,

tie cables, racks, power, heating, ventilation, accommodation and BT's DSLAMs.³⁰ We explained in the January Consultation that BT consumes the Shared Metallic Path Facility (SMPF) product supplied by Openreach on an Equivalence of Input (EOI)³¹ basis within the EUA component of the WBA service.

- 3.4 The backhaul part of the WBA service connects the BT DSLAM in the local serving exchange to the Broadband Remote Access Server (BRAS) providing handover to either BT's core network or to a point of interconnection with a CP's own network. BT provides backhaul for its IPStream (IPS), DataStream and IPStream Connect (IPS Connect) products using its existing network (also known as 20th century network or "20CN") and provides its Wholesale Broadband Connect (WBC) products where services are supplied using ADSL2+ technology (also known as BT's 21st century network ("21CN")). If the backhaul is supplied using BT's 20CN, it will be provided over BT's ATM backhaul network, and for BT's 21CN it will use an Ethernet backhaul network. In Market 1, backhaul is provided using BT's 20CN. In general, these backhaul circuits have a capacity of 155Mbit/s although some small exchanges may be subtended³² (or "piggy backed") to a larger exchange in a nearby town, and as such will have a lower backhaul capacity.
- 3.5 The handover element provides core network connectivity from BT's network to the CP at each of the BRAS sites. The handover is a necessary component to complete the end-to-end connection of the CP to BT's WBA products. The CP can connect at each BRAS or can purchase additional services from BT that deliver the traffic to a location closer to the CP's network.

BT's range of WBA services

- 3.6 BT currently provides WBA through three separate product families:
- IPStream services;
 - DataStream services; and
 - WBC services.
- 3.7 These products provide an end-to-end WBA service from the end-user premises to a CP's point of handover with BT's network. CPs are able to customise elements of BT's WBA products including upstream/downstream line speed and the switching and transmission capacity for end user connections. CPs are also able to choose whether they interconnect at each of BT's dedicated WBA interconnection locations (at the BRAS sites) or purchase other products that do not require the same level of network presence.
- 3.8 BT supplies IPStream services in Market 1, Market 2 and Market 3 of the WBA market. Currently, BT's IPStream services have a theoretical maximum downstream speed of 8Mbit/s. The actual speed and performance of the end-user connection will be determined by the distance from the end-user premises to BT's

³⁰ A DSLAM is a Digital Subscriber Line Access Multiplexer and allows telephone lines to make faster connections to the internet. It takes connections from a number of end users and concentrates them into a higher capacity connection along the backbone network.

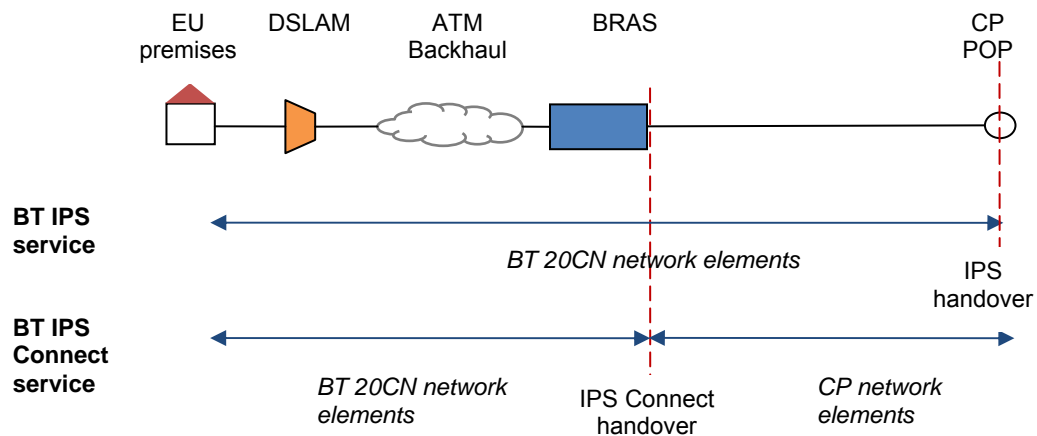
³¹ That is, Openreach provides the same product/service to all communications providers, including BTW in exactly the same way (e.g. using the same systems and processes, delivered using the same timescales etc).

³² Small exchanges may not have a dedicated 155Mbit/s backhaul circuit but share the backhaul connection capacity of a nearby exchange.

local serving exchange and the capacity in both BT's and the CP's backhaul and core network elements.

- 3.9 IPS and IPS Connect are shown in Figure 3.2. IPS Connect products allow a CP to interconnect at the BRAS node (via the interconnect component) and to use its own network from that point. IPS products, on the other hand, include delivery to the CP. A detailed description of BT's WBA services and their speed options can be found in paragraphs 3.19-3.38 of our January Consultation.

Figure 3. 2 – IPS and IPS Connect network diagram



Incentivising investment and protecting consumers in Market 1

- 3.10 To date, broadband services in Market 1 are supplied by BT using its 20CN. Services using 20CN have a maximum download speed of 8 Mbit/s. This compares to higher speeds available in Markets 2 and 3 areas where services are supplied using ADSL2+ technology (e.g. using LLU networks or BT's 21CN), BT's next generation access (NGA) deployment or Virgin Media's cable network. ADSL2+ based services have a maximum speed of up to 24Mbit/s, whilst services provided via BT's Next Generation Access network offer speeds of up to 40Mbit/s. Virgin Media is rolling out 100Mb/s broadband across its network with services currently offered at up to 50Mbit/s to all its customers. BT has indicated that it will consider investing in rolling out ADSL2+ in Market 1 during the period covered by the charge control, provided that the expected return on its investment is sufficient. This could enable customers in Market 1 to enjoy the higher download speeds already available in Markets 2 and 3.
- 3.11 In the January Consultation, we explained how we designed the charge control to strike a balance between the need to protect consumers in Market 1 and the need to ensure that efficient investment and innovation is not discouraged. We recognised that BT has entrenched SMP in the supply of WBA services in Market 1 even when future potential entry, including TTG's plans to use LLU in some Market 1 exchanges, was taken into account.
- 3.12 We also noted that the geographical characteristics of Market 1 exchanges (such as small catchment area and geographical remoteness) which have discouraged competing investment in Market 1 meant that the economic case for investing in new technology in these areas would be more challenging than in Markets 2 and Market 3.

Consultation responses

- 3.13 Sky argued that entry by LLU operators is of little importance and that “*the primary objective of the WBA charge control should be to ensure that BT is unable to earn excess returns*”.³³
- 3.14 On the other hand, TTG’s emphasised the need to promote upstream competition, and argues for a much less strict control than the one we proposed.
- 3.15 TTG has plans to extend its LLU network to cover approximately [X] new exchanges, including rolling out LLU-based services to [X] exchanges in Market 1. TTG stated in its response that “*this decision [to deploy in Market 1] was based on the expectation that in Market 1 the charge control would result in IPStream prices remaining flat in nominal terms (ie RPI - RPI)*”.³⁴
- 3.16 TTG submitted that if Ofcom were to proceed with its proposal for an RPI-X price control, [X] of the identified [X] exchanges in Market 1 would become unviable. In light of this, TTG argued that the proposed IPStream price reduction will have a detrimental impact on future rollout in Market 1, on the basis that it would deter TTG’s rollout plans and other investment for many years.
- 3.17 In particular, TTG argued that “simple business case modelling shows that the viability of exchanges (whether the viability test is a target payback period or rate of return) is highly sensitive to the IPStream price”.³⁵ It also submitted that where it plans to roll out, customers would enjoy “significantly lower prices and savings of over £10 per month. The lower prices flow from the substantially lower cost of operating an MPF/NGN network”.³⁶ TTG also argued that BT’s legacy network uses old ATM technology for backhaul which is more expensive than TTG’s Ethernet backhaul network. This leads to ISPs that use IPStream offering lower capacities to end users.
- 3.18 In the alternative to these arguments, TTG proposed “*a number of options to address or reduce the detrimental impact that is inherent in Ofcom’s proposals*”. One of these options, TTG argued, would be for Ofcom to conclude that there has been a material change in the market in accordance with section 86 of the Act and conduct what TTG characterises as a “*mini review*”³⁷.

³³ <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/Sky.pdf>, paragraph 16

³⁴ It is not clear on what basis TTG had such an expectation. We indicated in our WBA Statement and our January Consultation that the ROCE on all three markets may be above the cost of capital and said that the returns in Market 1 do not demonstrate that BT’s pricing was constrained to the competitive level. We note that TTG argued in favour of an RPI-X charge control in Market 1 in its response to our First WBA Consultation in May 2010: “*Given that BT is effectively the monopoly supplier in these geographic areas and there is limited prospect of entry (particularly with current LLU MPF prices), there is a clear incentive on BT to charge prices in excess of the “competitive level” and earn monopoly rents*”. “*An RPI-X style price control is the most appropriate way of avoiding consumer harm and distortion to competition*”.

³⁵ <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/TTG.pdf>, paragraph 14

³⁶ *Ibid*, paragraph 18

³⁷ TTG proposes other options, such as applying differentiated remedies within Market 1, applying less severe price reductions, or setting prices according to “retail minus” (as outlined in paragraph 4.13 of the January Consultation).

- 3.19 Finally, TTG also raised a consistency issue between the charge control approach and the previous WBA market reviews. In the past we have not imposed charge controls in the WBA markets. Our approach has been to allow BT (and indeed up until 2008 to require BT) to set prices that allow for and encourage investment by other CPs. TTG's view is that imposing a charge control now in Market 1, would essentially reverse our previous approach and the effect is that those consumers in Market 1, as of today, will remain in Market 1 and will not receive a number of important benefits that would arise from competition (supplied by TTG). TTG also suggested that other CPs could, in future, deploy in Market 1.

Our response

- 3.20 In imposing a charge control we aim to ensure that the right incentives for efficient investment are in place. In this section we set out our considerations as to why our approach is consistent with our general aim.

Assessing the impact of the charge control

- 3.21 TTG's view that a charge control could damage the economic deployment in Market 1 is based on the assumption that the price of IPS Connect is key in TTG's assessment of rollout in Market 1. However, at least one respondent has previously expressed a contrary view on this point. As part of the 2010 WBA market review process, on 20 August 2010 we published a consultation document (the "2010 WBA Second Consultation").³⁸ In Sky's response to the 2010 WBA Second Consultation, Sky argued that a charge control (in Market 2 in this case) would not act to inhibit future investment because the price of BT's WBA products is not the key driver of investment decisions but rather, the size of the exchange and cost of LLU deployment are the significant factors.³⁹
- 3.22 In considering TTG's argument, we would expect that where two alternative wholesale inputs can be used to provide the same retail service (for example retail broadband access), a reduction in the price of one relative to the other will make that one more attractive. In most retail markets, it would be reasonable to expect the retail price to be the same whichever wholesale service is used to provide it, and that this substitution effect might be quite strong. In the case of broadband access, however, the price of the retail service depends on the way the service is provided. That is, products supplied via LLU are generally priced more attractively at the retail level.
- 3.23 A number of operators are competing in Market 1 by using BT's WBA services. However, so far only TTG has announced plans to roll out LLU in parts of Market 1. Operators who continue to use WBA in Market 1 will benefit from the price reductions required by the charge control. Based on our analysis in the 2010 WBA Statement and the responses by other CPs to the January Consultation, we expect that competitors to TTG in Market 1 using WBA inputs will then either reduce their own prices or increase the quality of service of their products (by purchasing larger amounts of bandwidth). If TTG continued to use WBA inputs instead of deploying

³⁸ http://stakeholders.ofcom.org.uk/binaries/consultations/wholesale-broadband-markets/summary/WBA_condoc.pdf

³⁹ <http://stakeholders.ofcom.org.uk/binaries/consultations/wholesale-broadband-markets/responses/Sky.pdf>, Para 33 – [... LLU operators assessing the case for further rollout place more weight on subscriber density in exchange areas and the availability of investment capital for unbundling rather than the price of BT's WBA].

LLU, and did not follow a similar approach, we would expect that its market share would reduce to some extent.

- 3.24 On the other hand, the reduced IPStream price could impact the economics of LLU deployment if:
- Lower IPStream prices lead TTG to having to reduce the prices of its LLU offers to maintain market share, thus reducing revenue/margin; or
 - Lower IPStream prices reduce TTG's market share (or more likely reduce its ability to gain market share) in exchanges where it rolls out its LLU network, increasing its costs.
- 3.25 TTG argues that its costs are lower than those of BT due to its NGN and that these lower costs would allow it to price its retail products £10 per month (or more) lower, compared to using BT's WBA products at the current price. TTG then argues that if BT's WBA prices are reduced to a level that is reflective of BT's (higher) costs, then its scope to economically deploy in Market 1 is reduced. However, the reduction in prices that would result from the charge control is relatively small in comparison to the lower retail prices proposed by TTG. Therefore, even with the charge control in place TTG will be able to price its retail products lower, compared to using BT's WBA products (although the difference may be less than the £10 originally envisaged by TTG). Further, using LLU would allow TTG to differentiate its retail offerings from those of competing operators using BT's WBA products. We think that the relatively small size of the price reductions resulting from the control, combined with the scope for TTG to differentiate its retail services, will tend to reduce the effect of the control on TTG's incentives to roll out LLU. We also think that in general, the factors cited by Sky (the size of the exchange and the costs of LLU) are likely to be the most important influences on the decision to rollout. But at the margins of LLU rollout, the investment case is likely to be finely balanced and so a change to any one factor could be enough to tip it one way or another. We therefore do not rule out the possibility that the control could have some effect on TTG's rollout plans.
- 3.26 In addition, we consider that if imposing the charge control could impact the attractiveness of LLU deployment to the extent indicated by TTG, then this suggests that TTG's deployment in Market 1 may not be efficient, compared to the costs of provision of IPStream, as it would rely on prices for IPStream being maintained appreciably above cost. One potential source of this loss of efficiency is the loss of economies of scale arising from the small size of the exchanges in question. We can get an idea of the extent of this from the fact that TTG says that, for LLU to be viable in the smallest exchanges it intends to rollout in (\leq), it assumes charges remain flat in nominal terms (i.e. equivalent to a cap of RPI-RPI). If we equate our proposed cap (i.e. RPI-12.00%) broadly with the level of efficient costs, the difference is an indicator of the size of the efficiency losses which might be involved.
- 3.27 Offsetting these is the potential for dynamic benefits from LLU-based competition. In such a small area, it is perhaps unlikely that new innovations and efficiencies will be discovered which have not been found elsewhere. However, taking TTG's approach could give some consumers an increased choice and enhanced service quality. It may also be the case that the entry of TTG would speed up BT's deployment of 21CN in these exchanges, although BT may deploy in these exchanges anyway.

- 3.28 In addition, consumers that purchase broadband from a supplier other than TTG, including all those in the remaining [3<] exchanges in Market 1 where TTG does not roll out, would be likely to be significantly worse off if WBA charges were held above costs. The effect of IPStream prices remaining flat in nominal terms (according to TTG's expectation) is likely to be detrimental, either because consumers continue to pay higher prices or because the higher levels of traffic management currently deployed by CPs are not relaxed. We believe that the benefits that may arise from TTG's entry would not offset this negative impact on consumers.
- 3.29 As such, whilst TTG's rollout would provide competition via a higher featured service than is available on BT's 20CN, it appears that this can only be achieved if we take a regulatory approach to encourage inefficient investment, which would overall give no net benefits to Market 1 consumers over the charge control period.
- 3.30 Moreover, as TTG states, we said in the 2010 WBA Statement that it was our view that a charge control would not impact investment, because TTG had taken the decision to deploy in several hundred exchanges in the knowledge that we had proposed a charge control. TTG's argument now is that the level of the charge control is, in fact, critical in its assessment. TTG does not discuss in its response the basis for assuming an RPI-RPI charge control.
- 3.31 In the 2010 WBA First Consultation, we stated that BT's returns were consistent with prices being set above the competitive level and that there was potential for BT to raise prices due to its monopoly position in Market 1.⁴⁰ When we published the 2010 WBA Second Consultation, we focused on a refined approach to market definition that particularly affected the Market 2 and Market 3 boundary. In addition, we updated our market definitions based on updated rollout plans from CPs including TTG. On this basis, we asked CPs if they had any further comments or changes to their earlier submissions in relation to remedies in Market 1. TTG did not raise concerns about the proposed charge control in response to this consultation, for which the consultation period closed on 1 October 2010.
- 3.32 We do not consider that the commercial decision of TTG to announce plans should influence the level of the charge control. As set out above, we consider that by setting a charge control based on the efficiently incurred costs of BT using 20CN technology allows for entry by TTG, or other operators, where this entry is made on an efficient basis. This would overall give benefits to all the broadband users in Market 1.
- 3.33 TTG argued in the alternative that Ofcom should find on the basis of its rollout plans that there had been a material change in the market since Ofcom's market review.
- 3.34 On 20 December 2010 we published the WBA Statement. We concluded that there were three separate geographic markets in the UK outside the Hull area⁴¹, defined on the basis of the number of principal operators (POs) present and/or their market share. Market 1 was defined as exchanges where only BT is present. For our market definition, we only took into account confirmed rollout plans until December 2010 (ie almost contemporaneous to the WBA Statement). This ensured that we

⁴⁰ <http://stakeholders.ofcom.org.uk/consultations/wba/>

⁴¹ We found four geographic markets, including a separate market for the Hull area.

took into account plans that we considered would materialise in the early part of the market review period.⁴²

- 3.35 We then concluded that BT had SMP in Market 1 and decided that it was appropriate to impose a charge control. A few weeks later, in January 2011 we published the charge control consultation, setting out in detail our proposals for an RPI-X charge control.⁴³
- 3.36 On 16 November 2010, a few weeks prior to the publication of the WBA Statement, TTG made a public announcement stating that it intended to roll out to 700 exchanges. Following a formal information request, TTG told us that it had not specified the exact exchanges or the precise timescales for the rollout.⁴⁴
- 3.37 In the WBA Statement we considered carefully TTG's proposals, focusing on the impact that TTG's entry could have on BT's market share and competitive conditions in Market 1 over the charge control period.
- 3.38 In March 2011, in its response to the January Consultation, TTG for the first time expressed its concern about the appropriateness of the charge control and proposed that Ofcom address the issue by finding that there has been a material change in the market. TTG argued that its roll out plans constitute a material change in the market, because if they had been communicated to us at the time of the market review, the exchanges concerned would have been classified as being in Market 2, rather than Market 1.
- 3.39 TTG submitted two further letters, on 12 May 2011 and on 8 July 2011. In its letters TTG repeated its argument that its plan to rollout LLU-based services in certain Market 1 and Market 2 exchanges is a material change in the market and as such we may be required to re-review the WBA market. TTG argued that "*if the market review were rerun (using the same method and metrics as in the original) at which point that the SMP condition is set [...] the outcome would be significantly different*".
- 3.40 Under section 86 of the Act, before Ofcom can set an SMP service condition by a notification, which is separate from the notification making the market power determination, Ofcom needs to be satisfied that there has been no material change since the market power determination was made. Ofcom therefore has a statutory discretion which involves making a judgement.
- 3.41 Having considered the evidence, we are satisfied that since the market power determination in the WBA Statement, there has been no material change in the market conditions for the following reasons:
- 3.42 First, we do not consider that a proposal to rollout LLU-based services in a number of exchanges constitutes a change in the actual competitive conditions of the

⁴² This is in contrast with TTG's rollout plans which have a forward look estimate of 1 to 2 years.

⁴³ Resource constraints have meant that we have had to separate the consultation and decision on the details of the charge control from the decision on the market assessment and the decision that it was appropriate to impose a charge control. The consultation on the details of the control was issued in January 2011, a few weeks after the WBA Statement in December 2010.

⁴⁴ In fact the exact number of exchanges continues to shift even now. In its response to the January Consultation, TTG refers to [x] exchanges, including [x] in Market 1. In a letter to Ofcom on 8 July, TTG refers to a total of [x] exchanges for the year ending in March 2012 and [x] exchanges next year. TTG then refers to "firm plans" to enable total of [x] exchanges in Market 1. Similarly, the period for the rollout varies between 12 months and three years.

market, even if the plan for some of these exchanges is now said to be “firm”⁴⁵. In defining the geographic markets, it is often appropriate to take a limited forward look of the market and include in the assessment exchanges where operators have confirmed roll out plans. In contrast, for us to satisfy ourselves that a material change has occurred, the appropriate question is whether an event has actually occurred that has materially changed the competitive conditions in the market.

- 3.43 Second, and in the alternative, in the WBA statement we assessed TTG’s planned rollout and concluded that it did not merit a change to our market definition (paragraphs 3.169 to 3.190), to our SMP assessment (paragraphs 4.36 to 4.41) or to our proposed remedies (including a charge control) (paragraph 4.91).
- 3.44 In summary, we examined TTG’s potential rollout and concluded that exchanges allocated to Market 1 where TTG subsequently deploys can, for the purposes of the market analysis exercised, be considered to have competitive conditions that are sufficiently similar to exchanges in Market 1 where TTG does not deploy. We based this on the fact that at the start of the period covered by the review there would be no competitive constraint on BT and that any potential future entry by TTG would only introduce a constraint for part of the period covered by the review. We said that at the start of the period, BT would be the only provider and would, as such, face no competitive constraints. Based on the potential for migration of customers from BT wholesale products onto TTG’s own network, and considering the effect when a second PO is present in other exchange areas, we are of the view that even if TTG deploys towards the start of the review period, BT’s market share would be likely to be at least 70 to 80 per cent in these exchanges at the end of the review period. The information from TTG indicated that deployment would take place over the period of the review and so the effect on BT’s share would be less than this in many of the exchanges. Where BT’s share is at this level and it faces competition from only one provider, a charge control may still be considered an appropriate remedy.⁴⁶
- 3.45 TTG has not provided any materially new information since its initial announcement of the rollout plans, to change our assessment in the WBA Statement. Although we accept that TTG’s plans have developed, in so far as TTG has now identified the specific exchanges which it intends to rollout to in Market 1 and has started placing orders for some of these, this does not alter our assessment.
- 3.46 Our analysis shows that BT’s market share in Market 1 is likely to remain above 85 per cent throughout the period of this control. Moreover, our analysis shows that, in those specific exchanges in Market 1 where TTG plans to extend its LLU network, BT’s market share is likely to remain above 70 per cent throughout the entire charge control period. We note that the SMP assessment is carried out at the level of the market as a whole, and therefore, BT’s market share, the number of operators in the market and our view of the potential for further entry are not affected by the identification of the specific exchanges.
- 3.47 It is clearly possible during the period of the market review that an operator will rollout to further exchanges (as TTG proposed to do). Ofcom must in exercising its

⁴⁵ In the case of the [x] or so exchanges which are according to TTG unviable, the decision on the rollout appears to depend on the premise that we will not impose an RPI-X charge control. Accordingly, if we proceed with our RPI-X charge control, then TTG might decide not to rollout in these “unviable” exchanges.

⁴⁶ <http://stakeholders.ofcom.org.uk/binaries/consultations/wba/statement/wbastatement.pdf>, paragraph 3.182

judgement whether there has been a material change do so in a way that allows the market review process to function effectively in the interest of promoting competition for consumers.⁴⁷

- 3.48 Our conclusions are set in light of the recent EU requirement for market reviews to be carried out every three years. We reviewed the market in December 2010 and in July 2011 we are setting the detailed control.
- 3.49 For the reasons set out above, we are satisfied that there has been no material change in the market since the publication of the WBA Statement and therefore that the section 86 test is met.

Consistency with previous WBA reviews

- 3.50 In relation to the imposition of a charge control and consistency with previous WBA reviews, we disagree with TTG for the reasons explained below.
- 3.51 We consider that our current approach is consistent with our decisions in the previous WBA market reviews. In the *'Review of the wholesale broadband access markets – Final explanatory statement and notification'*⁴⁸ (the 2008 WBA Statement) published on the 21 May 2008, it was clear that LLU rollout was still progressing and LLU operators had long forecast periods for their rollout plans. However, it is clear that LLU rollout is slowing down. The larger LLU operators have deployed in more than 1000 exchanges, with TTG as the largest having deployed in more than 2000. In the 2010 WBA Statement, the market boundaries were based to a lesser extent on forecasts as operators had fewer committed expansion plans, which were mainly concentrated on short forecast horizon. We also note that between the 2008 WBA Statement and the 2010 WBA Statement there has been consolidation in the market and one LLU Operator – Orange - has announced its withdrawal from the market and will instead use BT provided wholesale inputs instead of its own LLU network. Therefore, we consider that our current approach is consistent with the maturity of the market and a reasonable view that significant further investment in LLU is less likely.
- 3.52 Further, LLU operators now have a much better view of the costs of rolling out LLU and the customer take-up of services on these deployments. Rollout to additional exchanges is unlikely to drive significant additional costs within the core of the LLU network or in support systems (though we accept capacity upgrades are likely to be necessary). Hence, the likelihood of investment in expanding footprint now is likely to be significantly lower than the likelihood of initial deployments.
- 3.53 Finally, the take-up and usage of retail broadband has developed since broadband was first deployed in the UK between 2000 and 2005 so that demand is better understood.
- 3.54 We have also taken into account that customers in Market 1 have faced higher retail prices and less choice for all this time and a less aggressive charge control would continue this further.
- 3.55 Taking all these points together, we considered in the 2010 WBA Statement that market conditions indicated that a change of policy in regulating Market 1 (i.e. the

⁴⁷ Under the revised Framework Directive (Article 6 of Directive 2009/140/EC), Ofcom is required to review the market every three years. The charge control is set from August 2011 to 31 March 2014.

⁴⁸ <http://stakeholders.ofcom.org.uk/binaries/consultations/wbamr07/statement/statement.pdf>

imposition of a charge control remedy) was appropriate. As set out above, TTG did not challenge our conclusion on this at the time.

- 3.56 Regarding TTG's suggestion that other CPs could, in future, deploy in Market 1, we note that they may still do so. However, this is not consistent with evidence provided by other CPs in response to the 2010 WBA Statement or the January Consultation. We note that, in fact, all CPs that responded other than TTG and BT supported the need for a charge control and actually advocate a stricter charge control.

Anchor pricing approach as a way of dealing with technological change

- 3.57 In the January Consultation, we contrasted two alternative approaches to setting the new WBA charge control. One, which we described as our "standard approach to setting charges" would be to base costs on what we believed to be the most efficient available technology. We referred to this as the "Modern Equivalent Asset" (MEA)⁴⁹ approach to pricing. We noted that it might be argued that 21CN technology is the MEA, because it is a proven technology in Market 3 areas (and is similar to that used by some LLU operators in their networks) and it is likely to be what a new entrant would install now.
- 3.58 We also explained an alternative to the MEA approach which we call the "anchor pricing" approach. The anchor pricing approach is a way of setting charge controls when costs are affected by major technological change. A key feature of the anchor pricing approach is that charges do not immediately reflect the costs of a new technology but may, for a time, be based on the costs of an older existing technology.
- 3.59 After comparing the merits of the two approaches, we concluded that it would not be appropriate to use an MEA approach when setting a charge control on WBA services in Market 1 areas. This was partly because it was not clear whether 21CN technology will prove to be a more efficient way of delivering the services currently used by consumers in Market 1. We noted that BT currently has no firm plans to extend 21CN coverage into Market 1, and the costs of doing so are largely unknown. In addition, we did not feel well placed to make the assumptions required to model 21CN costs in Market 1, and noted the risk of serious regulatory failure if any assumptions we made turned out to be incorrect.
- 3.60 We therefore proposed to adopt the anchor pricing approach for the WBA charge control in Market 1. In the context of this charge control, this meant that we would base cost projections on the cost of the 20CN ADSL product, and not include estimations of investment in 21CN in Market 1 exchanges (i.e. costs of deploying ADSL2+ technology to enable higher speed services).
- 3.61 We considered whether the anchor should be "static" or "moving". Under the "static anchor" approach, the definition of the anchor product is fixed at the start of the

⁴⁹For a definition of MEA, see for example paragraph 4.86 of Ofcom's second consultation "Valuing copper access" (March 2005). Ofcom asked Analysys Consulting "to undertake a comparison between the valuation of the existing [copper access] network and a hypothetical Modern Equivalent Asset (MEA)". The definition of the MEA used was: "The MEA chosen will be the most cost efficient method, using modern technology, of providing the same services, to the same level of quality and to the same customer base as is provided by the existing copper access network". See <http://stakeholders.ofcom.org.uk/consultations/copper/value2/statement/> for more details.

control for the entire charge control period. This gives the greatest weight to incentives to invest in new technology but with the risk that the relevance of the anchor product, and the extent of the protection it provides to customers, may decline over time. That is, consumers may no longer find the anchor product a relevant substitute for the newer services available and there may be a risk of exploitation of market power because the pricing of such newer services would be outside the scope of the charge control.

- 3.62 Under the “moving anchor” approach, the definition of the anchor product changes over time, for example to reflect expected changes in usage and improvements in quality which are possible using the existing technology. This maintains the relevance of the anchor product and ensures that customers are no worse off than they would have been in the absence of new technology, albeit at the cost of some reduction in incentives to invest in new services relative to the static anchor approach.
- 3.63 We took the view that the moving anchor approach best balanced our objectives to protect consumers with incentives to invest and that the control ought to allow for the organic growth in throughput possible using existing technology. This would ensure that we impose an effective constraint on BT’s ability to set its prices above costs, in particular as volume growth will further reduce average costs even using existing technology, and ensure that BT retains good incentives to invest in new technology. In effect, this is similar to our standard approach to volume forecasting in other charge controls. The key difference here is that we propose to limit the volume forecast to a level that could be delivered using 20CN.
- 3.64 However, with this approach, the value of X is set without taking into account potential cost reductions due to new technology, or volume growth which could only be realised if new technology were adopted. This allows BT to retain any benefit from such further cost reductions, as well as any premium from selling enhanced higher speed services. This should give it good incentives to invest in new technology provided it is efficient to do so.

Consultation responses

- 3.65 A number of stakeholders commented on the appropriateness of the anchor pricing approach. We summarise and reply to their comments on the anchor pricing approach below. We reply to comments on the characteristics of the anchor product, including bandwidth growth, later in this section.
- 3.66 In its response, BT said that it supports the anchor pricing approach, although it disagreed with our proposed bandwidth growth assumption. Another respondent also said that it had no concerns with the proposed anchor pricing approach, other than with the assumed average allocated bandwidth per end user. This respondent also:
- “urge[d] Ofcom to closely monitor developments...in particular the extent to which BT may deploy 21CN technology in Market 1 areas...and be willing to act/reconsider its approach to the anchor product should circumstances dictate”.
- 3.67 Sky argued that we should adopt the MEA approach since the MEA for WBA is clearly the 21CN technology which is already in use outside Market 1. It also suggested that MEA costs could be estimated in a straightforward way, for example by using TTG’s costs of unbundling in Market 1 exchanges or BT’s own

assessment of the costs of rollout of 21CN to market 1. It estimated that an appropriate value for the control, set on an MEA basis, would be of the order of RPI-20%. Sky questioned whether the anchor pricing approach will encourage BT to invest and argued that it could even have the reverse effect if it allows BT to earn returns above the competitive level.

- 3.68 Like Sky, C&WW argued that MEA costs should be used and that the MEA for these purposes is 21CN technology. C&WW also argued that the anchor pricing approach will not encourage BT to invest in new technology in Market 1. In contrast to Sky, C&WW argued that *“it will only be the threat of competition from LLUOs extending networks into Market 1”*⁵⁰ which would provide BT with the incentives to invest.
- 3.69 C&WW also expressed concern about what it saw as a phenomenal increase in revenue from contracted bandwidth from £135m to £250m over the period of the control. It suggested this indicates that contracted bandwidth charges are too high and that the anchor pricing approach is inappropriate.

Our response

Anchor pricing approach provides investment incentives

- 3.70 We do not agree with Sky that competitive investment in Market 1 is necessarily irrelevant. TTG’s proposed rollout shows the difference between Sky’s position and that of TTG, given that both compete in broadband markets outside Market 1 using LLU but so far only TTG has announced an intention to use LLU in any part of Market 1. On the other hand, we do not think it would be appropriate to set high charges with the intention of favouring such investment over other forms of competition at this stage in the development of the market. Our proposal for an anchor pricing approach strikes an appropriate balance because it will promote further investment by LLU operators in Market 1, but only provided this investment is efficient. The anchor pricing approach supports efficient investment by other operators because it allows them to compete if their costs are lower than BT’s. The much tougher control suggested by Sky would reduce incentives for such investment relative to our proposal.
- 3.71 We do not repeat all our reasons for believing that the anchor pricing approach will encourage investment. We set out those reasons in the January Consultation and they have also been well rehearsed elsewhere, notably in the Competition Commission’s decision on the WLR Appeal Determination by Carphone Warehouse (CPW).⁵¹ However, the Competition Commission’s views on the efficiency benefits of the anchor pricing approach are particularly relevant here, since the anchor pricing approach we propose to use to set the WBA charge control is consistent with the approach we adopted in setting the WLR and LLU charge controls. We therefore set out some key points of the Competition Commission’s determination below.
- 3.72 In the WLR Appeal, CPW argued that charges should be set on the basis of MEA costs, rather as Sky does now.⁵² CPW, like Sky, claimed that Ofcom’s anchor

⁵⁰ <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/CWW.pdf>

⁵¹ See “the Carphone Warehouse Group plc v Office of Communications”, 31 August 2010, case 1149/3/3/09 (the “WLR Appeal Determination”) at http://www.competition-commission.org.uk/appeals/communications_act/wlr_determination.pdf

⁵² Sky was an intervener in this appeal.

pricing⁵³ approach would not provide efficient signals for investment. CPW argued, amongst other things, that “*Linking...the use of NGN costs for setting prices to BT’s deployment of new technology would...create a disincentive for BT to invest in the new technology. This was because BT would expect that a faster move to the new technology would trigger Ofcom to set new, lower prices*”.⁵⁴

3.73 The Competition Commission rejected CPW’s argument, listing six reasons why:

“We do not agree with CPW that Ofcom’s approach would not create efficient investment incentives”⁵⁵

and stating:

“We agree with Ofcom that if the price controls...are set in this way [that is, using the anchor pricing approach], and if investment in an NGN network would be expected to result in lower costs overall, BT would have a financial incentive to make this investment.”⁵⁶

3.74 The Competition Commission agreed with Ofcom that the anchor pricing approach gives good incentives for efficient investments. It continued:

“In this case, Ofcom said that the level and structure of prices would, for a period, be set by reference to existing technology costs, even if BT were to invest in new technology over this period. Charges would be brought into line with the costs of this new technology only when it was established and, even then, this would be achieved gradually by a glide path. It is this deliberate regulatory lag that creates the financial incentive to invest in cost-reducing technology, as BT would retain the cost savings in these years in the form of higher profits.”⁵⁷

and at paragraph 3.59:

“we consider that Ofcom’s approach would provide efficient incentives for CPs providing fixed-line services, or operators of mobile networks, to provide...services in competition with BT Retail. In particular, if they are able to reduce the costs of providing...services by using new or different technology they would be able to undercut BT....”

3.75 To sum up, we do not agree with Sky that using an MEA approach would result in stronger incentives for efficient investment. Under the anchor pricing approach, prices do not immediately adjust to the costs of a new technology, and this feature of the approach gives the firm an incentive to invest if (and only if) the investment pays for itself by lowering costs, or providing higher quality services for which customers are willing to pay a premium.⁵⁸

⁵³ At the time we described this as the “technology neutral” approach, as we explained in the January Consultation, paragraph 3.47.

⁵⁴ WLR Appeal Determination - paragraph 3.34.

⁵⁵ *Ibid*, paragraph 3.37.

⁵⁶ *Ibid* paragraph 3.38.

⁵⁷ *Ibid* paragraph 3.42

⁵⁸ We emphasise that, under the anchor pricing approach, we do not set charges automatically on the basis of whichever technology the regulated firm happens to be using. Avoiding “feedback” of this kind is also important to preserving incentives to invest in new technology.

Additional costs needs to be considered under the MEA approach

- 3.76 Another difficulty with an MEA approach is that, even if it were agreed that the MEA technology for WBA in Market 1 is ADSL2+, there is still some uncertainty over the costs of deploying ADSL2+ technology in Market 1.⁵⁹ For example, in its analysis, Sky assumes that LLU backhaul is available in Market 1 at Openreach's current BES⁶⁰ prices. This is inappropriate as BT does not currently provide LLU backhaul using BES in Market 1, and the costs of providing an AI (alternative interface or Ethernet leased line) service like BES across all exchanges in Market 1 are not known. In addition, if prices were to be set on an MEA basis, it would be necessary to allow for any costs of migration from one technology to another in the charge control.⁶¹ Setting the charge control on the basis of ADSL2+ costs would therefore not be as straightforward as Sky suggests.
- 3.77 Sky suggested that we could use TTG's costs of unbundling in Market 1 exchanges or BT's own assessment of the costs of rollout of 21CN to Market 1. Again, an apparently similar benchmarking argument was advanced by CPW in the WLR Appeal.⁶² The use of the costs incurred by other operators to benchmark BT's costs was firmly rejected then by the Competition Commission⁶³ and, for similar reasons, we do not believe it would be appropriate here.
- 3.78 The fact that BT may have made its own assessment of the viability of rolling out 21CN to Market 1 does not mean that its calculations are not subject to uncertainty. Indeed BT has argued strongly that there is significant uncertainty around most aspects of the investment case. In addition, if we were to set the charge control on the basis of what BT told us it needed to invest in rolling out 21CN, there would be concern about vulnerability to gaming and a risk of creating poor incentives to invest in future. Finally, even if, as Sky argued, DSLAM and backhaul costs could be relatively easily estimated, this is not true of migration costs which would need to be allowed for under the MEA approach, or of the optimal time path of transition to ADSL2+. One of the advantages of the anchor pricing approach is the fact that it helps address uncertainty over migration volumes and costs.
- 3.79 Whilst the magnitude of these migration costs is uncertain, they cannot necessarily be regarded as insignificant. Economies of scale and scope are also significant and this means that, while rollout takes place, the average costs on both the old and new platforms will depend on the rate of migration between them, which may be difficult to forecast with any precision. Sky does not appear to have taken this into account, and this is one reason why we think its claim that "*an MEA based charge control could be in the order of RPI-20% or more*" is not robust. In fact, whilst parallel running is in force, average costs on both networks will tend to be higher

⁵⁹ In our defence to the WLR Appeal, we argued that it was not clear what the MEA was, and noted that BT was considering 'leapfrogging' MSAN technology to move straight to NGA. See the WLR Appeal Determination, paragraphs 2.184 and 3.99 to 3.103 at http://www.competition-commission.org.uk/appeals/communications_act/wlr_determination.pdf.

⁶⁰ BES is backhaul extension services and are high speed, permanently connected, point-to-point data circuits commonly used by LLU operators to connect unbundled exchanges and their own networks.

⁶¹ As Sky notes, we recognised that there was an argument for ADSL2+ to be regarded as the MEA in this case, in paragraph 3.39 of the consultative document. In paragraphs 3.43 to 3.44 we list a number of reasons why we thought it inappropriate to set the charge control on the basis of estimated ADSL2+ costs.

⁶² See "The Carphone Warehouse Group plc v Office of Communications", August 2010, case 1149/3/3/09 (the "WLR Appeal Determination"), paragraph 3.36.

⁶³ *Ibid*, paragraphs 3.44 and 3.75 to 3.81.

than if there was a single network, due to the loss of economies of scale and scope, and this is one reason why costs may initially rise when new technology is introduced. Under the anchor pricing approach, customers are protected from such transitional increases in costs and the firm is given appropriate incentives to recover them through subsequent efficiency gains, or through higher customer willingness to pay for new services.

- 3.80 Finally, we note that it is not necessary to adopt a full MEA approach for customers to get some benefit from cost reductions due to new technology. It is also possible within the anchor pricing approach for customers to share in any anticipated “technology dividend”. This could be done by passing some of the expected gains on to customers through the value of X in the charge control, whilst still leaving sufficient gains with BT to provide the appropriate level of incentive to invest. We return to this point when we discuss the rate at which we expect BT to reduce its unit costs over the charge control period.

The charge control should encourage competition and efficient investment

- 3.81 We agree with C&WW that competition deeper in the network can have additional benefits when compared to competition downstream. But if the entrants’ costs are initially higher than BT’s, the dynamic benefits from additional competition (innovation and cost reductions over time) may need to be substantial for there to be a benefit overall. It is therefore necessary to strike a balance, and we do not think we should intentionally set a weak control on WBA charges, as TTG has argued, in order to allow more headroom for LLU investment in Market 1. This could encourage inefficient investment which would not benefit consumers. It would also be inconsistent with the objectives for the charge control which we set out in the 2010 WBA Statement. In Paragraph 5.300 of that statement we said:

“We are of the view that a charge control condition will promote efficiency by requiring BT to price at the level of an efficient firm in the absence of competitive constraints in this market. The charge control will aim to promote sustainable competition by only encouraging equally or more efficient CPs to compete based on LLU. It will also aim to promote sustainable competition at the retail level by restricting BT’s ability to price excessively with the aim of making it more difficult for other providers to compete. We expect that the benefits of this pricing will eventually flow through to end-users of WBA services.

- 3.82 On the other hand, setting a very strict control, as some other respondents have argued we should do, on the assumption that new technology will, or should, be rolled out in Market 1 and without taking account of the associated costs of migration, will reduce the likelihood of further rollout by LLU operators even where this rollout may be considered efficient. This may therefore not be in the best interests of consumers either.

Contracted bandwidth revenue

- 3.83 We do not share C&WW’s concern about the increase in revenue from contracted bandwidth. With respect to the revenue figures in Table 5.9 of the January Consultation we stated that:

“In 2013/14 Market 1 costs are estimated to be around £238m. This can be compared to total revenues in the absence of a charge control of around £373m”.

- 3.84 The £373m includes allocated bandwidth revenue of £240.6m.⁶⁴ These figures do not include the effect of charge reductions due to the control and so could indeed be said to reflect charges which are too high. Indeed these are the charges that will be reduced by the charge control such that revenues are brought into line with costs by the end of the control.
- 3.85 It should also be borne in mind that the increase in revenue (in the absence of the control) reflects primarily our assumption that there will be significant growth in bandwidth per user of 23% per annum in the base case used for the January Consultation. The effect of the assumed growth in bandwidth per user is to reduce average costs and, as we set the value of X to bring projected revenues into line with costs in the final year of the control, the growth in bandwidth usage and revenues is taken into account and reflected in a higher value of X. It does not indicate that the proposed control should be tighter. We therefore do not agree that it is possible to infer from the projected growth in bandwidth revenues that the anchor pricing approach is inappropriate. In fact we think that the anchor pricing approach is the most appropriate way to set the WBA charge control, for the reasons set out in the January Consultation and above.

Impact of future market developments

- 3.86 Finally, we respond to the suggestion that we should reconsider the anchor pricing approach depending on how the market develops during the control period. We will of course monitor the market, and take such action as is necessary according to our duties, but we do not intend to intervene to reset the control if BT rolls out 21CN in Market 1. If it were thought that investment in new technology would trigger a tougher control which would reduce the returns on new investment, incentives to invest would be seriously harmed. This would be contrary to the principles and objectives of anchor pricing and incentive regulation more generally.
- 3.87 It should also be clear that the control will apply irrespective of whether the anchor product is actually supplied over the existing network or over 21CN, should that be rolled out in Market 1. This is so that customers for current generation products can be confident that they will always be able to obtain a service at least as good as their current offer, at a price no higher than they would have paid if new technology had not been rolled out. However, as we explained in Paragraph 3.66 of the January Consultation, there can be a risk with the anchor pricing approach that the relevance of the anchor product declines over time, as customers switch to newer alternatives. This is more likely to happen if the static version of the principle is adopted, and we think that by proposing a moving anchor we reduce this risk. We expect therefore that the proposed characteristics of the anchor product will remain relevant for the period of this control and of course they can be reviewed when any subsequent control is set. Our replies to responses on the detail of the proposed characteristics of the anchor product are set out below.

⁶⁴ Table 5.10 of our January Consultation shows that bandwidth revenues in 2013/14 range from £172.1m to £318.1m, depending on the assumptions, and in the absence of a charge control.

Anchor product characteristics

3.88 In our January Consultation, we identified two particular characteristics of a WBA service that we considered as integral to the end-user experience.

3.89 We asked the following question:

Question 3.3: Do respondents agree with the proposed anchor product characteristics? If not, explain why.

End user access of up to 8Mbit/s

3.90 The first relevant characteristic of a WBA service is the headline download speed using ADSL that forms part of the retail broadband package purchased by end users. This is commonly advertised in retail broadband offers as an “up to 8Mbit/s” or “up to 24Mbit/s” service and reflects the maximum theoretical download speed. We proposed to focus the charge control only on products having maximum download speeds of 8Mbit/s which reflects what is currently supported using the 20CN network. We also proposed to exclude lower speed products from the charge control basket.

3.91 Respondents who commented on the point generally agreed with the proposed end-user access speed of the anchor product.

We assume that end-user allocated bandwidth will grow at 23% per annum

Our proposals

3.92 The second relevant characteristic we identified is the bandwidth that CPs allocate to each end user on the backhaul component. CPs purchase aggregated amounts of bandwidth which is then shared by their retail customers. By purchasing larger amounts of bandwidth capacity, CPs are able to provide a higher average bandwidth allocation per end user which should result in a better quality of service experienced by consumers and allow for increasing use of bandwidth-intensive applications. In line with the ‘moving anchor’ approach, we proposed a growth profile for the allocated bandwidth per end user consisting of a starting point of 48kbit/s at the start of the charge control period rising to 89kbit/s by 2013/14, equivalent to an annual rate of growth of 23%. This is shown in Table 3.1.

Table 3.1 – Allocated bandwidth per end user forecasts

	2010/11	2011/12	2012/13	2013/14
Allocated bandwidth per end user	48kbit/s	59kbit/s	73kbit/s	89kbit/s

3.93 In the January Consultation we asked the following question:

Question 3.1: Do respondents agree with our proposals on the allocated bandwidth growth? If not, explain why.

Consultation responses

- 3.94 Respondents were most clearly divided on this issue. On the one side, both BT and TTG considered that our estimates for bandwidth growth were too aggressive. On the other hand, C&WW, Sky and another respondent considered that we were too conservative.
- 3.95 In its response, BT disputed the proposed assumption of exponential bandwidth growth. In support of its case, BT listed four factors which drive demand for bandwidth and says that each of them is subject to uncertainty:
- The availability of new applications, and in particular video;
 - The propensity of end users to use them;
 - The download speeds and bandwidth available to end users; and
 - The willingness of end users to pay for more services.
- 3.96 BT argued that most customers use significantly less bandwidth than is currently available, with the implication that there is no certainty that the demands of these customers will increase significantly in future. As, in BT's view, substantial increases in demand and revenues would be needed in order to justify investment in new technology, it argues that an assumption of "substantial" bandwidth growth (which leads to a higher value of X and hence lower wholesale prices) reduces its incentives to invest in these new technologies. BT suggested a significantly lower bandwidth growth rate, of around 16%, would reflect more accurately the likely demand from end users given the factors listed above.
- 3.97 In its response, TTG argued that the starting point for calculating bandwidth growth is wrong. It argued that existing bandwidth in Market 1 is lower than the national average (because of longer line lengths as evidenced in Ofcom's UK fixed broadband speeds, November/December 2010 report)⁶⁵ so our starting point should be lower. TTG suggested a starting point of 27kbit/s (rather than 48kbit/s) calculated on the assumption that the line speed and capacity for IPStream customers in Market 1 is around 50% less than in Markets 2 and Market 3. TTG argued that these factors also suggest a significantly lower annual bandwidth growth rate than the 23% we proposed in the January Consultation, suggesting a growth rate of 15%.
- 3.98 Another respondent considered our assumed average allocated bandwidth per user to be too low, because it reflects constraints imposed by the current high level of WBA charges.⁶⁶ In its view, our approach resulted in a bandwidth growth projection which is not reflective of what growth rates would be if bandwidth prices reflected costs.
- 3.99 This respondent also suggested a more appropriate approach would be to base projections of future end-user bandwidth requirements on a less distorted demand profile, such as the demand profile over LLU-based networks where the average allocated end-user bandwidth will not have been as constrained by BT's IPStream

⁶⁵ <http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2011/bb-speeds-nov-2010.pdf>

⁶⁶ £122.64 monthly for contracted bandwidth per Mbit/s per node

prices. It suggested that on this basis annual bandwidth growth would be at the high end of the range set out in our January Consultation, around 35%.

- 3.100 Sky argued that the assumed rate of growth of 23% per annum in allocated bandwidth per user is too conservative by comparison with the rates of growth it has experienced of around 40%. Sky accepts that growth may be lower with the ADSL1 technology assumed for modelling costs in Market 1, but recommends that we adopt a figure near to the top of the range on which we consulted (35%).
- 3.101 C&WW made similar comments in its response. From its own experience, it suggests that demand in Market 1 could be much higher than our estimate. Using C&WW's own figures annual bandwidth growth could be much higher than our growth profile.
- 3.102 We also received three responses from consumers in Market 1 areas who express their concerns about continued slow broadband speeds

Our response

Starting level of allocated bandwidth per end user is appropriate

- 3.103 In response to TTG's point about the starting level of allocated bandwidth per end user, we note that our figure of 48kbit/s for September 2010 is based on BT's data on total contracted bandwidth by CPs and CPs' end-user volumes. We note that whilst this was calculated on a national basis, these figures reflect only IPS Connect volumes.⁶⁷ We understand that CPs do not make any WBA market-based distinction on allocated bandwidth per end user. Therefore, this figure reflects the average bandwidth per end user actually being purchased by CPs today, based on current IPStream prices. Since CPs will only purchase this service where they do not have their own network (or another form of alternative supply), it is likely that the average bandwidth of customers in Market 1 (where CPs have no option other than purchasing IPStream from BT) is a significant factor in CPs' consideration of how much bandwidth they should purchase. Therefore, we consider it is appropriate to use this figure as the basis of our modelling.

Risk of low bandwidth demand is unlikely

- 3.104 Whilst we accept that there is some uncertainty about the demand for higher speed services in Market 1 and hence about the investment case for new technology there, this technological uncertainty is already taken account of by our use of an anchor pricing approach rather than an MEA approach. We consider that our base assumptions are reasonable, taking into account known trends, a cautious estimate of the effect of expected reductions in WBA charges, and an expectation of what is technically feasible using the technology of the existing network in Market 1.
- 3.105 Moreover, we do not think the demand risk is as significant as BT argues. Demand for higher speed services has been proven in areas outside Market 1, and by other operators who have already invested in network upgrades. Indeed, an annual growth rate of 23% is very conservative by comparison with the possibilities presented by the development of new applications, particularly the amount of

⁶⁷ This includes volumes for CPs purchasing IPS Connect directly and volumes for Wholesale Broadband Managed Connect (WBMC) where IPS Connect is used as an input to WBMC.

streamed content online.⁶⁸ For example, the latest iPlayer statistics⁶⁹ show that average daily requests for TV content has more than doubled in the 25 months since January 2009. Other broadcasters have also launched catch-up TV: 4oD, Demand 5 and SkyPlayer. The Office for National Statistics (ONS) report⁷⁰ shows that the number of UK adults who used the internet to watch TV or listen to radio increased from around 6 million in 2006 to just over 17 million in 2010, an increase of almost 30% per annum. The combination of increasing end users and access of online video content will lead to a higher likelihood that users access such content at the same time, leading to higher peak demand. This means that CPs are likely to have to allocate higher bandwidth per end user in order to provide an acceptable level of service.⁷¹

- 3.106 The evidence of higher bandwidth growth rates provided by other CPs is based on experience with their own networks where they have deployed ADSL2+ (or DOCSIS 3 in the case of Virgin Media). This means that we cannot assume that the same growth rates would necessarily be achievable with the technology currently deployed in Market 1. Nonetheless, there is no reason to think that the underlying demand, unconstrained by technology or pricing, would vary between markets. If the growth rate in Market 1 has been lower than elsewhere, this may be because the amount of bandwidth purchased by CPs has been constrained by high prices, particularly the “contracted bandwidth” charge.

Impact of technical characteristics of Market 1

- 3.107 As set out above, we expect that average demand will grow because more end users will seek to use higher bandwidth services.
- 3.108 TTG argues that line lengths in Market 1 may be longer than average and that this, along with the absence of ADSL2+ deployment, may restrict the ability to support very bandwidth intensive services. Whilst we accept that longer line lengths will impact the peak speeds available, we do not believe that this limitation would be so restrictive as to prevent consumers from using many of the services we would expect to drive bandwidth growth. In our UK fixed broadband speeds report, we said that the average peak download speed in Market 1 was 3.1Mbit/s and discussed the possible factors that might have an impact on the lower speeds recorded in Market 1.⁷² In addition to the longer line length, the report identified the greater access to ADSL2+ services, both via LLU operators and BT, and the higher availability of cable broadband services in Market 2 and Market 3 areas as possible causes of lower speeds observed in Market 1. As raised by one respondent, traffic management that CPs apply to services provided via WBA in Market 1 is also likely

⁶⁸ See for example Geo estimated (March 2011) that worldwide demand for bandwidth has increased by 53% per annum between 2002 and 2008 with video being the key driver of bandwidth usage <http://colocentric.co.uk/archives/64> and is the fastest growing area of the internet http://documents.envisional.com/docs/Envisional-Internet_Usage-Jan2011.pdf and <http://techcrunch.com/2011/05/17/netflix-largest-internet-traffic/>.

⁶⁹ http://www.bbc.co.uk/blogs/bbcinternet/img/BBC_iPlayer_performance_monthly_1102_FINAL.pdf

⁷⁰ <http://www.statistics.gov.uk/pdfdir/iah0810.pdf>.

⁷¹ For example, the iPlayer's lowest bandwidth stream is 500kbit/s. An allocation of 48kbit/s assumes that all end users are online at the same time. This suggests that up to 10% of end users can go online and be able to stream video successfully.

http://www.bbc.co.uk/blogs/bbcinternet/2009/04/bbc_iplayer_goes_hd_adds_higher.html. Viewers also have the option of downloading a programme. A 30 minute programme is around 500MB, so at 500kbit/s this would take over 2 hours to download (500MB = 4,096,000kbits).

⁷² <http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2011/bb-speeds-nov-2010.pdf>, Figure 5.6 and paragraph 5.15

to be a factor. These traffic management policies are likely to be set with the intention of limiting the total bandwidth that the CP must purchase from BT by setting priorities by type of traffic during the peak hours. This could have the effect of reducing the average download speed over the peak times. The variation of speeds by time of day analysis shown in Figure 6.2 of the UK fixed broadband speeds report shows that for the 'up to' 8Mbit/s ADSL products, average download speeds in the peak periods were 12% slower than the average maximum recorded between 12 and 6am.

- 3.109 As more users use higher bandwidth services in the peak period, the average bandwidth per end user will increase. This is not dependent on any increase in line speed from current levels but is simply a factor of increased take-up of existing services and an increase in concurrent use of services. This take-up may, however, be impacted if traffic management policies restrict the ability of consumers to use these services in the peak times. We discuss this further below.

Support for higher bandwidth growth rate

- 3.110 Based on the above discussions, we are more persuaded by the views of those respondents who argued that the 23% assumption is too conservative. One reason is that the 23% base case assumption is based on the growth rate between September 2009 and September 2010, a period during which there was no change⁷³ in BT's contracted bandwidth charge. As WBA charges fall in the future, we would expect this to stimulate additional demand. We have considered how much additional bandwidth CPs are likely to purchase as a result of the reductions in prices brought about by our proposed control, on top of the existing trend.
- 3.111 The extent to which demand for a product increases as its price falls is termed the "own price elasticity of demand". Evidence on the elasticity of demand for broadband services was discussed in our 2009 Openreach Financial Framework Review, as TTG then argued that this was something we should take into account in setting LLU charges. Evidence submitted by Frontier Economics on behalf of TTG suggested that the elasticity of demand for retail broadband services lay within the range -0.14 to -2.62 with a mid-point of -1.25. The fact that the range of estimates is so wide is indicative of the difficulty of obtaining robust results in this area. Dr Chris Doyle⁷⁴ who also submitted evidence on behalf of TTG, suggested that

"a more conservative and realistic estimate of the own-price elasticity of demand value is lower and likely to be around -0.40".⁷⁴

- 3.112 An elasticity of -1.25 would indicate that a 10% reduction in prices would lead to a 12.5% increase in demand, whilst a figure of -0.4 would indicate that a 10% reduction in prices would result in only a 4% increase in demand.
- 3.113 This evidence provides support for the view that, if the new control is between RPI-10.75% and RPI-14.75% (implying real price reductions of between 10.75% and 14.75% per annum), then some possibly significant additional stimulus to broadband demand is to be expected. However, we cannot use these elasticities to estimate the precise effect of the proposed charge control on growth in contracted

⁷³ In nominal terms, implying a small reduction in real terms.

⁷⁴ See

http://stakeholders.ofcom.org.uk/binaries/consultations/openreachframework/responses/Talk_Talk_Group_Appendix_D.pdf

bandwidth, since they relate to retail⁷⁵ broadband subscriptions and use data from different periods in the past and from a number of different countries. However, to the extent that it is possible to make any inferences from these data alone, they would appear most likely to justify a rate of growth of between 25% and 30%.

- 3.114 We think that the demand for contracted bandwidth is likely to be more responsive to price changes than the more conservative estimates of the elasticity of demand for retail broadband subscriptions alone would suggest and that a figure towards the top of this range – 30% per annum – is therefore appropriate. This is because of the way that high bandwidth charges and any resulting constraints on usage are experienced by retail customers and the way in which reductions in the usage charge are likely to be passed on to them, as we explain below.
- 3.115 An increase in the wholesale contracted bandwidth price is not simply passed through in a similar (in absolute terms) increase in the retail price of broadband internet access. A retail customer is likely to pay a fixed fee for an up to 8Mbit/s package which might allow 10GB or unlimited usage per month. Retail customers do not vary their usage in response to retail price changes, since the amount they pay does not vary with usage. Then, if high wholesale usage charges restrict wholesale demand, this is likely to be experienced by retail customers as a reduction in quality of service. If service providers restrict allocated bandwidth per end user to reduce costs, retail customers may find that speeds slow significantly at certain times, with intermittent or no online video streaming during the evening peak hours, for example. If BT's current bandwidth charge constrains CPs' ability to purchase additional capacity, they may respond to higher end-user demand by traffic shaping during peak hours, particularly as CPs face additional charges for bandwidth utilised above the contracted bandwidth.⁷⁶
- 3.116 We have therefore considered the various possible ways in which CPs might respond to reductions in the contracted bandwidth charge. Of course we cannot be certain how they will respond and they may not all respond in precisely the same way. In addition, we do not know precisely how BT will target the price reductions it will have to make to comply with the cap although, as we noted in our discussion of the need for sub-caps, we do expect significant reductions in the contracted bandwidth charge. Because of this uncertainty we would be somewhat cautious about adopting an assumed rate of bandwidth growth which was at the top of the consultation range, as some respondents suggested we should do.
- 3.117 One possible way for CPs to respond to reductions in WBA charges would be to pass them straight through in retail package prices. In this case, we can use the price elasticity estimates we referred to above to estimate the likely effect. If the retail price elasticity is -0.4, and we apply a dilution factor of 0.75, the wholesale price elasticity will be about -0.3. We know that, between 2009 and 2010, demand grew by 23% at the same time as BT held nominal prices constant. Given the rate of inflation, this was equivalent to real price reductions of 4.6%. These real price reductions may have had some stimulating effect on demand and this will have

⁷⁵ To estimate a wholesale price elasticity consistent with these retail elasticities, we would have to take account of the "dilution" of wholesale price changes. Dilution occurs because the wholesale charge makes up only a part of the retail price – the rest is made up of retail costs and profits. A given percentage increase in the wholesale charge would then result in a smaller percentage increase in the retail price, even if it is passed on in full. In the WBA market review we found that around 65% to 75% of the retail price is accounted for by the charge for WBA (Para 3.193), suggesting the wholesale elasticity would be around 65% - 75% of the retail elasticity.

⁷⁶ For the first 15% this is charged at the same rate of £122.64 per Mbit/s per month, but above that it is charged at £180 per Mbit/s per month.

been reflected in the 23% increase observed. We need to allow for the possibility that the 23% growth may have included some price effect so as not to double-count it when we look at the incremental effect of the charge control. Our value of X implies that, going forward, charges will fall by 12% per annum in real terms or around 7% per annum more than in 2009/10. Putting all this together, we can deduce that the additional real charge reductions implied by the control of about 7% per annum would result in roughly a 2% expansion in the market, suggesting a growth assumption of 25% (i.e. 23% + 2%) per annum going forward.

- 3.118 We think this is a very conservative estimate for a number of reasons. Firstly, the retail elasticity we used is at the conservative end of the range of estimates. Secondly, we do not allow for any increase in growth for reasons other than the price reductions, for example, which might occur due to the increasing popularity of new applications. But the main reason is that we do not think that CPs are likely to respond to WBA charge reductions in the way we assumed above. We think that quality of service is likely to be an important focus for competition in retail broadband markets, and that it is this competition to improve quality rather than market expansion at the retail level which is likely to be the main driver for increased demand for contracted bandwidth. This view is supported by the responses to our consultation from consumers in Market 1 that flagged concerns with the low bandwidth they currently experience. Reductions in wholesale usage prices will enable service quality to be improved, at no additional cost to the retail user and therefore we think that the reduction in wholesale contracted bandwidth charges arising from the charge control will be reflected in additional purchases of capacity in order to improve service quality. This suggests that there is likely to be a bigger response at the wholesale level than that calculated above. We consider how much bigger below.
- 3.119 In the January Consultation, we said that the upper end of the range of reasonable assumptions for growth in contracted bandwidth was 35% per annum. We can calculate how price-elastic demand would have to be in order for growth at this level to result from the charge control. As above, we assume that the control results in real price reductions which are some 7% greater than in 2009/10. For this to stimulate additional demand of 12% per annum, the elasticity would need to be approaching 2. That is rather high by comparison with the range of estimates of retail elasticities set out above, although still within that range. Whilst it is possible that some acceleration in growth could occur independent of any reduction in price, we note that growth at this level might mean that CPs total costs per customer might increase even though prices are falling. This could mean upward pressure on package prices and these could be resisted by customers, despite the improvement in quality.
- 3.120 A more reasonable approach might be to assume that CPs will prefer not to see their costs per user increase. If the charge reductions resulting from the charge control were reflected in purchases of increased capacity in order to enhance quality, leaving the total cost unchanged, there would be a simple 1:1 relationship between the percentage reduction in the bandwidth charge and the percentage increase in bandwidth demand. This suggests that a reasonable assumption for the wholesale contracted bandwidth price elasticity could be in the region of 1. Although, for the reasons set out above, we do not regard the available estimates of retail elasticities as very relevant, we also note that this figure is within the range of retail elasticities reported. An elasticity of around 1 is consistent with a rate of growth of about 30% per annum.

- 3.121 We have carried out a simple calculation to confirm that our assumed growth rate of 30% is consistent with a reasonable underlying organic growth rate and a plausible estimate of the wholesale price elasticity of demand for contracted bandwidth of approximately 1. An elasticity of about 1 suggests that in the region of 4% – 5% of the growth observed in 2009/10 may be attributable to real price reductions, leaving some 18% – 19% as “organic” growth. It is then easy to check that, if the underlying organic growth rate is 18 – 19%, real price cuts of 12% combined with an elasticity of 1 are consistent with overall growth of about 30%.
- 3.122 Finally, we also note that a growth rate of 30% per annum would still lead to end-user bandwidth lower than that experienced by consumers using ADSL2+ in Markets 2 and 3 areas.

Our conclusions on bandwidth growth

- 3.123 For the reasons set out above, we believe that there is a case for increasing the bandwidth growth figure of 23% we proposed in the January Consultation. There is evidence, from CPs’ responses, consumers’ responses and observed consumer trends that demand for bandwidth could be higher than we had assumed. A possibly significant additional stimulus to bandwidth demand is to be expected as a result of our proposed charge reductions leading to CPs considering relaxing their traffic management policies.
- 3.124 We have therefore given some weight both to the empirical evidence on the responsiveness of demand to price reductions and to the growth rates experienced by other operators. In the light of this, we regard a rate of growth in contracted bandwidth of 30% per annum over the period of the charge control as reasonable.

The charge control only applies to the IPStream Connect product

Our proposals

- 3.125 In the January Consultation we said that the choice of the WBA products to charge control was limited to three options:
- Control all BT 20CN and equivalent WBA products in Market 1, i.e. at the present DataStream, IPS and IPS Connect;
 - Control IPS and IPS Connect; or
 - Control IPS Connect only.
- 3.126 We proposed to charge control IPS Connect only. We considered that it would be disproportionate to control BT’s DataStream and IPS charges as well. In the case of DataStream, this was because it accounted for only a negligible share of Market 1 and because CPs could switch to a comparable alternative if BT attempted to raise DataStream prices to an excessive level. This led us to conclude that a control on DataStream prices would be unnecessary.
- 3.127 We proposed not to control IPS prices on the basis that users have an economically viable alternative in case of a significant price rise. We identified a number of technically feasible alternatives and discussed them with CPs. In the light of this, we thought it was unlikely to be economic for small CPs to migrate to IPS Connect, but we thought that they would be able to migrate to BT’s next generation equivalent for its “Central” product (i.e. Wholesale Broadband Managed Connect) or

purchase an equivalent end-to-end WBA service from another CP who uses BT's IPS Connect as input. The existence of these latter two options meant that a control on IPS Connect alone would provide sufficient protection. The full analysis can be found in the paragraphs 3.83 to 3.99 of the January Consultation.

3.128 Furthermore we noted that in Market 1 there are five CPs, other than BT, that purchase IPS Connect⁷⁷ which also gives a choice of alternative broadband supplier to the retail customers who are currently relying on small ISPs who use IPS. This may in itself provide sufficient protection to retail customers without the need to control the price for IPS as well.

3.129 We asked the following question:

Question 3.2: Do respondents agree with our proposal to charge control IPS Connect only?

Consultation responses

3.130 In their respective responses, both BT and TTG agreed with our proposal to apply a charge control to IPS Connect services.

3.131 Another respondent had no significant concerns with our proposal to charge control IPS Connect only. It argued that this would protect the majority of customers and that there would also be constraining effects on charges for non-charge controlled products. It suggested that Ofcom should monitor possible developments related to non-charge controlled wholesale products offered in Market 1 with a view to intervene at a later stage if circumstances require it.

3.132 In its response, C&WW agreed that a control on just the charges of IPS Connect Max and Connect Max Premium is appropriate as these account for approximately 80% of the market. However it had "serious concerns" about the application of the anchor pricing concept to other markets in which the number of customers using products other than the designated anchor product might be more significant. This concern therefore seems to relate to the application of the anchor pricing approach to other markets outside the scope of this charge control.

3.133 C&WW also considered that applying only a cost orientation condition to other wholesale services in Market 1 areas would not provide adequate protection to users of those services. As such, it argued that applying a charge ceiling to these services would be appropriate. Of particular concern to C&WW was DataStream. Although it accepted that DataStream represented a small proportion of connections overall, C&WW felt that BT would be able to exploit its market power to raise DataStream prices. It felt that BT's WBC product does not have the required quality of service (QoS) characteristics for it to be an adequate substitute for DataStream. It stated that a charge ceiling on DataStream would protect against this and that a charge control on DataStream would be disproportionate.

3.134 In its response, the Communications Workers Union (CWU) argued that charge controls should not be applied to any wholesale broadband products in Market 1 as it did not believe that there was any evidence of anticompetitive behaviour but rather any lack of competition in the provision of broadband services arose because of the lack of a business case for alternative providers. While it agreed with the

⁷⁷TTG, Sky, Orange, Virgin Media and Entanet.

principle and objective of effective provision of broadband access and reducing costs of wholesale broadband access, it is concerned that setting prices too low would have a negative impact on ongoing investment in superfast broadband.

- 3.135 In applying a charge control, charges could be set too low risking investment in superfast broadband. The consequence of this would be to further widen the ‘digital divide’ and marginalise people in rural communities and other vulnerable groups which would benefit from roll-out of superfast broadband.

Our responses

- 3.136 C&WW’s proposal for a charge ceiling on DataStream charges, in addition to or instead of the cost orientation requirement, is not developed in detail so it is not clear how the level of such a ceiling would be determined. As the cost orientation requirement in effect applies a ceiling to charges (a “first order test” for cost orientation is whether a charge is below distributed stand-alone cost, or “DSAC”), it is also not clear how far C&WW’s proposals would differ from this in practice. Our view is that there is not a good case for a ceiling or control, in addition to the cost orientation obligation, for the reasons we set out in the January Consultation. We note that C&WW agreed that a charge control on DataStream would be disproportionate. As we noted above, we will monitor the market and take such action as is necessary according to our duties.
- 3.137 Our view that DataStream should not be subject to a charge control is not based on the availability of an equivalent product in Market 1. We understand that, whilst the WBC quality of service (QoS) portfolio allows CPs to offer differentiated service levels to end users, WBC may not be a perfect substitute for DataStream and, secondly, BT has no confirmed plans to deploy WBC in Market 1. However, we do not exclude that BT may reconsider the WBC product characteristics in the event it seeks to migrate off the ATM network. Furthermore, we note that BT is required, in Market 1, to meet reasonable requests for access so that C&WW could request BT to develop further QoS capability on its WBC product if and when it is deployed.
- 3.138 In relation to the point raised by CWU on the appropriateness of the charge control in Market 1 area, we explained in the paragraphs 3.50 to 3.56 above why we believe that a charge control remedy in Market 1 is appropriate. We also discussed in paragraphs 3.70 to 3.75 and 3.81 to 3.82 why we think that the anchor pricing approach gives good incentives for efficient investment.
- 3.139 Having considered stakeholders’ responses we continue to believe, for the reasons set out above that the WBA charge control applied in Market 1 should only apply to IPS Connect up to 8Mbit/s.

Conclusions

- 3.140 Having considered stakeholders responses to our January Consultation and further analysis of the anchor pricing approach, and in particular the characteristics of that approach, we have made the following conclusions:
- We adopt an anchor pricing approach to setting the WBA charge control in Market 1;
 - The anchor product characteristics for the charge control should be based on:

- maximum download speed of up to 8Mbit/s on the end user access component for the entire duration of the charge control period; and
- average allocated bandwidth per end user of 48kbit/s in 2010/11; and growing at 30% per annum as shown in Table 3.2.
- IPStream Connect is the only WBA product to be subject to the charge control in the Market 1 area (or an equivalent “up to 8Mbit/s” product provided over 21CN if 21CN is rolled out).

Table 3.2 – Allocated bandwidth per end user forecasts

	2010/11	2011/12	2012/13	2013/14
Allocated bandwidth per end user	48kbit/s	65kbit/s	89kbit/s	111kbit/s

Section 4

Form and duration of the charge control

- 4.1 In this section we set out our conclusions on the form and duration of the charge control in the WBA Market 1 exchanges.
- 4.2 In light of the responses to our January Consultation and further considerations in this section we set out our reasoning for:
- The form of the charge control and the choice of the inflation index;
 - Approach to estimating costs of upstream inputs that are also regulated; and
 - The duration of the charge control.

We are implementing an RPI-X charge control

Our proposals

- 4.3 In our January Consultation we identified a number of different forms of charge controls. Paragraphs 4.3 to 4.20 discussed why we proposed to adopt an RPI-X price cap approach for the regulation of wholesale broadband access Market 1 areas.
- 4.4 The choice of an RPI-X control in a market where a CP has an entrenched dominant position (and there is a very low likelihood of competitive pressure developing to an extent which would undermine this position) is intended to replicate the discipline of a competitive market whereby productivity gains are realised and passed on to end users in the form of lower prices, after taking into account increases in input prices. Of the options available, we believe that this is the most suitable form of regulation for WBA prices in Market 1 areas, and is based on an established and transparent mechanism that provides incentives for efficiency improvement and innovation. RPI-X leads to the gradual erosion of any excess profit existing at the start of the control, which is also what is likely to happen over time in a competitive market as entry occurs and other operators catch up over time.
- 4.5 In Paragraphs 4.21 to 4.26 we also discussed the inflation index measure to use as our benchmark. Generally, the rate of inflation is taken to be the average growth rate of output prices for the economy. The UK, like most other countries, has a number of indices for measuring inflation.⁷⁸
- 4.6 We proposed to use the RPI index as published by the Office of National Statistics (ONS) as being the most appropriate benchmark given its familiarity to stakeholders and the fact that it is unlikely to be affected by BT's own purchases.⁷⁹
- 4.7 In the January Consultation we asked respondents the following question:

⁷⁸ The two most common are the Retail Price Index (RPI) and the Consumer Price Index (CPI). These are described in Paragraph 4.21 of the January Consultation.

⁷⁹ A drawback of telecoms equipment price indices, for example, is that they could be affected by BT's purchases, given BT's size.

Question 4.1: Do respondents agree that an RPI-X control is the appropriate form of charge control for the regulation of wholesale broadband in Market 1?

Consultation responses

- 4.8 BT and C&WW both agreed with our proposals for an RPI-X form of control. In particular, BT agrees that RPI-X is the most effective form of control with many positive incentive properties. It also believes that the RPI-X approach also provides a high degree of certainty since other operators are aware of their input prices (i.e. for the charge controlled products) in advance. BT also agrees that RPI is the most appropriate measure of inflation. Another respondent also agreed with an RPI-X control. No respondent disagreed with our approach.

Our response

- 4.9 We have decided to use the RPI-X form of charge control for WBA products in Market 1 exchanges. It is an established way to provide regulated firms with incentives to adopt new technologies and therefore seek efficiency savings whilst passing on some of the cost savings to consumers. It is useful to note that Ofgem in its review of the RPI-X approach to energy network regulation has also argued for the continued use of the RPI over the CPI based on the need for consistency “*between the indexation of the price control and the basis for establishing the allowed return*”, as well as greater transparency and lower complexity.⁸⁰

We use an upstream input approach to setting the charge control

Our proposals

- 4.10 As discussed in Paragraphs 4.27 and 4.28 of the January Consultation, the WBA service is made up of three elements: end user access, backhaul and handover. We identified two approaches for the treatment of the end user access part of the costs associated with WBA products. The choice between the end-to-end and upstream input approaches affects only the end user access part of the cost stack. This is because a large part of the end user access costs requires an Openreach input, which itself is also subject to a charge control.⁸¹
- 4.11 We referred to the “end-to-end” approach as “Option 1”, where we would model the total end-to-end costs for the WBA costs. This would result in end-user access costs that are specific to Market 1 exchanges. It would be likely that the “SMPF” part of the local access costs estimated using this approach would be higher than the existing Openreach SMPF charges as the latter are determined on nationally average basis. The assessment of a geographically de-averaged SMPF prices in Market 1 would be possible if we adopt a different approach to setting LLU prices at the same time. Practically, to estimate Market 1 LLU costs and set charges on that basis, would require a detailed examination of the costs on an exchange by exchange basis.

⁸⁰ See Paragraphs 5.2 to 5.4, “RIIO: A new way to regulate energy networks. Final decision”, October 2010. <http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/Decision%20doc.pdf>.

⁸¹ We note that Openreach provides Ethernet backhaul on an EOI basis. However, BT does not consume Ethernet backhaul in its 20CN and there is little or no Ethernet backhaul currently deployed in Market 1. As such, the upstream inputs are confined to the end user access.

- 4.12 The alternative “upstream input approach”(referred to as “Option 2”) applied the RPI-X control only to the mark-up BT Wholesale applies to Openreach’s SMPF charges, other costs related to the end user access (such as DSLAM), the handover and the backhaul part of the WBA service components. This would reflect the fact that in providing IPS Connect, BT Wholesale is charged the regulated price for the upstream input from Openreach. This avoids the need for a separate estimation of the Market 1 specific local access costs. In turn, when we calculate BT’s revenues generated from the WBA charges, we remove the element that would be passed through to Openreach through the LLU SMPF charges.⁸²
- 4.13 We proposed to use Option 2 - the upstream input approach - for the RPI-X cost model in Market 1 and asked respondents the following question:

Question 4.2: Do stakeholder agree with the adoption of Option 2, the upstream input approach, as our preferred option?

Consultation responses

- 4.14 BT, C&WW and TTG commented on the use of the upstream input approach to model costs in Market 1 and generally supported our proposals. In particular, BT agreed that the upstream input approach is the most practical way to implement a charge control in Market 1. BT also commented on the complexity of the end-to-end approach as it would require the disaggregation of local access costs by geography and have a knock on effect on LLU prices in Markets 2 and 3. BT believes that it would be cumbersome and disproportionate.
- 4.15 C&WW and TTG also agree with a model that excludes the LLU SMPF charges, which are already regulated via the LLU charge control. TTG also noted an additional option would be to use the cost of SMPF in Market 1 areas rather than the nationally-averaged LLU SMPF charge.

Our response

- 4.16 Based on our proposal that the upstream input model was preferable, and that those stakeholders that responded on this point agreed with Ofcom’s proposal, we have concluded we should use the upstream input approach. . We do not believe that it would be practical to use a Market 1 specific SMPF cost with the upstream input approach. This is because the LLU prices are currently set as a national average, so to use a Market 1 specific value for setting IPS Connect prices would require an equivalent assessment of LLU prices excluding Market 1 areas. Such a method would be inconsistent with our approaches in other related markets.

⁸² In Section 3 we discussed the End User Access (EUA) component and showed that it comprises the SMPF LLU upstream input (along with LLU ancillary services such as Tie cables, accommodation, power and MDF) and BT’s DSLAMs. BT consumes the SMPF product within this component of the WBA service.

The charge control will be in force until 31 March 2014

Our proposals

- 4.17 In the January Consultation, we proposed a three-year duration for the WBA charge control running from the date which is 28 days from the issue of this statement.⁸³ We said that a shorter control of three years would not extend beyond the forward look of the 2010 WBA Statement and would also allow us to synchronise the charge control remedies and market review periods. The new European Framework,⁸⁴ transposed in the UK on 25 May 2011, was another factor that we took into account when proposing a three-year control period. Finally, we looked at the efficiency incentives and the impact that a three-year control may have on these. We concluded that a duration of three years will not disrupt unduly the balance between dynamic and allocative efficiency effects.
- 4.18 In the January Consultation we asked respondents the following question:

Question 4.3: Do respondents agree that a charge control duration of three years would be appropriate for WBA Market 1?

Consultation responses

- 4.19 Five respondents commented on this question. BT is concerned that the duration of the control will actually be less than three years and that a control shorter than three years does not provide sufficient incentives for investment in Market 1 where uncertainty about likely demand increases the riskiness of investment. It also references our concerns as we made them in the January Consultation about the risks of shorter control periods and the effects these might have on investment plans. BT suggests that the control should run until 31 December 2014 in line with the period of the 2010 WBA market review.
- 4.20 BT also argued that our approach of aligning the start of the charge control years to April means any price changes at the start of the year must be based on estimates of prior year revenues as it would not have finalised its regulatory financial statements until June/July.
- 4.21 Of the remaining respondents, C&WW agreed with the proposed duration. Another respondent, agreed with our approach while observing that a trend towards shorter control durations, driven by the EU Framework, could result in less certainty and stability in the relevant markets.
- 4.22 CWU disagreed with our proposal on the basis that it disagrees with the imposition of a charge control in WBA Market 1.
- 4.23 TTG notes that, although the three-year charge control period matches the three year length of the market review, it is shorter than previous charge control periods (normally four years) and therefore results in relatively weaker productive efficiency incentives and causes more rapid changes in prices.

⁸³Allowing a 28 day period before the implementation of the charge control would give BT a notice period which is consistent with its requirement to give 28 days notice of any amendment to the charges, terms and conditions for network access (condition EAA4).

⁸⁴<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0037:0069:EN:PDF>

Our response

- 4.24 We have considered stakeholder comments and suggestions in detail. We set out below why we continue to believe that a charge control until 31 March 2014 is appropriate.
- 4.25 In the January Consultation, we stated that we do not believe that the proposed duration will disrupt the balance between dynamic and allocative effects unduly. However, we agreed that the longer the duration of any control, the stronger the efficiency incentives. In setting the period of the charge control we must also take into account the need to review markets on a regular basis. In this regard, we took a forward look view of up to four years in the market review allowing for the next review to occur within that period. This also allowed us time to establish the WBA Market 1 charge control, which is the first control we have imposed in the WBA market. As discussed in Section 2, the revised EU Framework recommends that markets are reviewed every three years.
- 4.26 Further, the NGA Recommendation⁸⁵ indicates that the review of the WBA market should be considered in parallel with the review of the WLA market, given the close alignment of the two. This would also lead to the charge controls for LLU and WBA, where they imposed, being considered in parallel. The last WLA market review concluded in October 2010 and a three-year period from this point would lead to a new market review concluding in October 2013. As charge controls are imposed within the market review period, this could indicate a charge control should last only until October 2013. However, we think this is too short a period to provide adequate certainty and incentives in the market.
- 4.27 Considering all the above factors, and taking account of the views of the European Commission and other stakeholders, we consider that setting a charge control until March 2014 achieves a reasonable balance between efficiency incentives and allowing for a timely review of the market.

Conclusions

- 4.28 Based on the reasoning set out above, we are implementing:
- An RPI-X charge control using RPI as the relevant inflation index;
 - An upstream input approach to setting the charge control, whereby the LLU SMPF charges from Openreach are taken as given and used to determine the value of X; and
 - A charge control that will be in force until 31 March 2014.

⁸⁵http://ec.europa.eu/information_society/policy/ecomms/doc/library/recomm_guidelines/nga/document_travail.pdf

Section 5

Charge control design

Introduction

- 5.1 In the January Consultation, we discussed five key steps we followed for setting out our approach to designing the WBA charge control. In this section, we explain our final position on the appropriate basket structure, base year costs, any one-off adjustments, and our approach to forecasting costs to the end of the charge control period. Together they result in our position on the final value of X to be applied to IPStream Connect Max and Max Premium products in Market 1 exchanges until 31 March 2014. The determination of the cost of capital figure used in developing our final position is set out in Section 6.
- 5.2 Before we discuss our conclusions on the steps undertaken to set the charge control, we provide an update of the base case scenario.

Revised base case scenario

- 5.3 In line with the Transparency framework for charge controls, we published a non-confidential version of the RPI-X model on the 15 February 2011. Following discussions with stakeholders, we made the following changes to the model:
- Exclude Openreach SMPF pass-through charges from the revenue calculation in line with the compliance formula as set out in the Notification;
 - Use real asset price changes for the holding gains/loss calculation;
 - Use 2009/10 DSLAM numbers for allocating base year costs rather than 2008/09 numbers used in the January Consultation; and
 - Use of BT's prices as at 1 April 2011.
- 5.4 Since the publication of our January Consultation, BT has made a number of changes to its prices⁸⁶ that are relevant to our charge control. These are shown in Table 5.1. Given BT's price notification period and the fact that BT has not notified any price changes over the last 28 days, these prices will be the prevailing prices at the start of the charge control.

⁸⁶ Operative from 1 April 2011

Table 5.1 – Changes in BT’s service prices

	Price up to 31 March 2011	Price from 1 April 2011
IPS Connect Max and Max Premium connection charges ⁸⁷	£38.64	£39.79
SMPF rental ⁸⁸	£15.04	£14.70
SMPF connection	£38.64	£39.79

5.5 Table 5.2 below shows the cumulative impact that each of these changes has on the base case value of X.

Table 5.2 – Revised base case scenario changes

Change details	Description of change	Cumulative impact on X
January Consultation		12.75%
X formula	Calculate $X = (\text{Costs}/\{\text{Revenues} - \text{SMPF revenues}\})^{1/3} - 1$ instead of $X = (\{\text{Costs} + \text{SMPF charges}\}/\text{Revenues})^{1/3} - 1$.	14.25%
Asset price change	Average real price change = -1.9% compared to average nominal price change = 0.8%.	12.25%
Allocation of DSLAM costs to Market 1	Apportion 34% of costs to Market 1 instead of 33.5% in base year.	12.25%
BT’s new prices	BT prices as at 1 April 2011	12.25%
Revised base case		12.25%

Step 1: Identify appropriate charge control basket(s)

A single charge control basket including ancillary service charges

Our proposals

5.6 In our January Consultation, we proposed a single basket covering end user access, backhaul and handover charges associated with IPS Connect Max and Max Premium products. In Paragraphs 5.7 to 5.19 we considered the trade-off between separate baskets for different types of charges versus a wider, single basket.

⁸⁷ See [BT Price List](#)

⁸⁸ See [Openreach Price List](#)

- 5.7 With separate controls on each and every charge, or on different types of charges (for example a basket for the connection and rental charges and one for all other charges), part of the cost modelling exercise would have involved a view on the efficient allocation of common costs between the services identified in the separate baskets. Not only would this require a detailed analysis of costs and demand for the individual services, it would also reduce BT's flexibility to change its prices in response to unanticipated changes in relative costs or in the demand for these services at a later stage.
- 5.8 On the other hand, if the competitive conditions between the services were different, then it would have been appropriate to place the services in separate baskets. This would prevent BT from having the ability to concentrate price cuts on the most competitive services and offset this by price rises in less competitive services, a result which could be harmful to competition in the market.
- 5.9 We noted that in cases where there are some differences in competitive conditions between the services but are not sufficient to warrant a separate basket approach, one way of reducing the scope for anti-competitive pricing would be to use safeguard caps on some of the services within the basket. Essentially this would limit the extent of price changes that BT can make to a pre-specified set of services, and therefore reduce its ability to make cuts solely for its own benefit.
- 5.10 In our January Consultation, we proposed to include the ancillary charges shown in Table 5.3 in the charge control basket. We also proposed not to include pure pass-through charges⁸⁹ in the WBA charge control as these charges are already considered as part of the LLU and WLR charge controls.

⁸⁹ BT charges levied on CPs that are simply a pass through charges imposed by Openreach.

Table 5.3 – Ancillary service charges included in the charge control basket

Ancillary service	Description
End user migration charges	<ul style="list-style-type: none"> • EU migrates from one Customer to another w/o change of product and speed. Available to all BT IPStream ADSL end users. • EU migrates from one customer to another with change of product and speed. Available to all BT IPStream product family end users. A single charge is raised (re-grade and migration). <p>When an end user requests a change of product - this will be subject to a re-grade order, subsequent and separate to the migration order.</p>
Re-grade charges	Re-grade charges for IPS Connect are applicable when end users move from IPS Connect Max to Max Premium service (and vice versa).
Cancellation charges for end user access	Where a customer requests cancellation of an End User Access order, as defined within the Conditions of Service, a one-off Single Payment Charge will be levied. The charge will be calculated on the number of Working Days between the date the Customer requests the cancellation and the Original Delivery Date (ODD). ODD is the initial agreed installation date.
End user cease charges	<p>Cease charges applies when</p> <ul style="list-style-type: none"> • A BT ADSL End User service is terminated (cease); or • Replaced by a non-BT ADSL End User service (cease and re-provide). The cease and re-provide is not applicable to Market 1 by definition. <p>We proposed to set this charge to zero.</p>

5.11 In the January Consultation we asked respondents the following question:

Question 5.1: Do respondents agree that ancillary service charges should be included in the main basket?

Consultation responses

- 5.12 Five respondents commented on the use of the single basket structure that includes the ancillary services. Of the five, three agreed with our proposal to include ancillary service charges in the main basket. In particular, BT noted that the rate of change of costs associated with the different services will differ over time. As such, the flexibility granted by this structure will allow BT to reflect these relative cost changes in their prices.
- 5.13 C&WW disagreed with the use of the single basket and argued that ancillary services should form their own basket and not be placed in the same basket as connection and rental charges for the IPS Connect Max and Max Premium products. They noted that in other charge controlled services (such as leased lines and LLU) ancillary services were treated in separate baskets. C&WW also noted that one implication of having a separate ancillary charge basket would be that BT would have the opportunity to raise charges for re-grades and migrations.
- 5.14 Sky argues that the proposed basket structure is too broad. This could allow BT to choose whether to apply price reductions to end user rentals or bandwidth which, in

turn, could result in consumers with higher bandwidth consumption subsidising consumers with lower usage (or vice versa). Sky believes that consumers in this market are already receiving bandwidth allocations considerably below average allowances elsewhere. Sky feels that Ofcom can mitigate these risks by disaggregating the proposed basket so that end user rental and bandwidth prices are controlled separately, or by applying more stringent sub-caps that guarantee that prices for these two key components track the overall basket cap more closely.

Our response

- 5.15 We have considered C&WW's comment on the exclusion of ancillary charges from the main basket. As explained in Paragraphs 5.26 to 5.30 of our January Consultation, our general preference is for wider baskets but we noted that it may be undesirable for more competitive and less competitive services to be placed in the same basket. We understand C&WW's concern that BT might have an incentive to increase migration charges but in the case of the WBA charge control in Market 1, we believe the best way to address this concern is through the use of the sub-caps we proposed and not by putting ancillary services in a separate basket. Firstly, we note that given the current level of these charges, an RPI-X control is not needed to bring them into line with costs. Secondly, even with separate baskets, sub-caps within the ancillary services basket would still be needed to address any concern that BT could change relative prices within the basket in ways, which could harm competition. We continue to believe that sub-caps on ancillary charges within a single basket are appropriate for the WBA charge control in Market 1 for the reasons set out below.
- 5.16 These ancillary charges are common across both the IPS Connect Max and IPS Connect Max Premium products and BT's downstream arm does itself consume these products in order to compete in the retail broadband market. In this case, any changes to ancillary service charges will affect CPs in the same way as BT.
- 5.17 This is different for the LLU charge control for MPF and SMPF services where a separate basket structure is adopted. This is because BT is the largest buyer of SMPF, but MPF is almost exclusively bought by others. In the case of LLU, therefore, placing all services in a single basket could allow Openreach to adjust prices to favour its downstream operations by concentrating reductions on SMPF charges, offset by increases in charges for MPF. We do not consider that this same opportunity exists within the WBA market.
- 5.18 We also noted some practical reasons for preferring a single basket, most notably the difficulty of achieving an efficient allocation of common costs between services. With some ancillary charges our analysis showed that charges are below FAC, perhaps as a result of BT's commercial decision to encourage migration to higher specification products by setting these charges at a low level compared to their fully allocated costs. We did not think this was intrinsically unreasonable provided that they do not result in one operator (e.g. BT's retail operations) systematically gaining at the expense of others and indeed keeping migration charges at relatively low levels is likely to be pro-competitive. That said, we also believe that BT should be able to recover legitimate costs associated with these services. Given these considerations, we believe the most practical approach is to include them in a single overall basket, subject to appropriate safeguards as discussed in the next section.
- 5.19 We have taken into consideration Sky's concern on BT's being able to choose whether to apply price reductions to end user rentals or bandwidth. We mentioned

above the difficulties associated with Sky's suggestion on end user rental and bandwidth prices being controlled in two separate baskets. We consider it an advantage of our approach, not a disadvantage, that BT has some flexibility to vary relative charges within the basket. This is more likely to result in efficient prices than an approach which required every price to equal FAC, for example, or to change at the same rate over time as Sky suggests. In relation to the suggestion on having more stringent sub-caps, as discussed on the need for sub-caps in Section 3, we do expect significant reductions in the contracted bandwidth charge. We do not think that questions of subsidy will arise within the broad basket and note that BT must also comply with its cost orientation obligation in addition to the charge control.⁹⁰

We use prior year revenues as basket weights

Our proposals

5.20 In Paragraphs 5.34 to 5.40 of our January Consultation, we set out why we believe prior year weights are preferable to current year weights for the purposes of assessing BT's compliance with this charge control. We emphasised that reliance only on revenue information, which is (or can be) already known when setting prices to comply with the control was a determining factor for our basket weights proposal.

5.21 We also stated that the use of prior year revenue weights creates an incentive to concentrate price reductions on services whose weight in the basket is falling over time, and vice versa. As we expect growth in bandwidth per user to significantly exceed growth in the number of users, prior year weights could incentivise BT to make reductions primarily to the end user access (EUA) charge, whose weight in the basket we expect to fall over time. We also noted that reductions in the EUA charge are more likely to benefit average users because of this wholesale charge is directly linked to the monthly retail price paid by end users.

5.22 In the January Consultation we asked respondents the following questions:

Question 5.3: Do respondents agree with the use of prior year revenue weights for the WBA charge control basket?

Consultation responses

5.23 Two respondents (C&WW and one other) agreed with our proposal of prior year weights. None disagreed.

5.24 Whilst agreeing with our proposal of prior year revenue weights, BT noted that there is a practical problem with the revenue weights in this charge control case because the revenue data can only be finalised after the financial year end. Since the financial year corresponds to the charge control year in this instance, BT would not be able to calculate the relevant weights until after the first day of each charge

⁹⁰Paradoxically the risk that BT could set some charges below cost could be greater if Sky's suggestion that we should apply "more stringent sub-caps that guarantee that prices...track the overall basket cap...more closely" were adopted, as it would not allow BT to adjust relative prices in response to changes in relative costs. This proposal has some similarities to the cap on LLU ancillary services, which Ofcom set in 2009. The Competition Commission found that Ofcom "erred by setting equal price caps for each of the three ancillary baskets" (LLU Appeal Determination - paragraph 3.150) because it would lead to a "misalignment of costs and revenues" (paragraph 3.161).

control year, i.e. after 1 April. BT sees this as a problem because it has a preference for making all the price reductions required by the control on the first day of the control year. But if it does not then know the weights to apply, it will not be able to calculate the required price changes precisely and may need to adjust prices again once the weights are known to ensure compliance.

- 5.25 Whilst BT recognised that prior year weights could be estimated in order to calculate a price change for 1 April and then be re-calculated based on actual revenue information when it becomes available, it proposed an alternative approach to addressing this inconvenience by adopting a charge control running from December 2011 to December 2014. This way the revenue weights would always be known on the first day of each charge control year.

Our responses

- 5.26 As set out in Section 4, we believe it is appropriate to set the WBA charge control that runs to 31 March 2014. We do not consider the inconvenience identified by BT as to be significant enough to warrant an alternative approach. The purpose of the compliance formula is to take into account the timing and the extent of price changes that BT chooses to make during the year. The control does not restrict BT's ability to make multiple price changes during the year, and so BT can make multiple changes if this is needed to take account of prior year weights. In most competitive markets, prices change far more frequently than once per year. We also note that, in this market, BT is required to give notice of price changes, giving users plenty of time to adjust.
- 5.27 SMP condition EAA7(A).3 requires that the revenue accrued by all changes should not, in aggregate, be more than if a single change had been made to comply with the formula in EAA7(A).3. If BT makes multiple price changes, the revenue impact of each change would be weighted by the period for which that price is in effect and the resulting revenue of each change would be added together to calculate the overall revenue change. This would then be used in assessing compliance against the target revenue change in the condition.

Sub-caps apply for certain charges within the basket

Our proposals

- 5.28 In the January Consultation, we proposed to apply sub-caps of RPI-0% to the ancillary charges that are included within the overall basket. This is because some of the ancillary services have particular significance for downstream competition in the market⁹¹ and we were therefore concerned that increases in charges could harm competition. In effect, the sub-cap limits the extent of BT's pricing flexibility.
- 5.29 We also proposed a safeguard cap of RPI-0% for the contracted bandwidth charge. This is aimed at limiting BT's ability to offset any reductions in the end user access charge (as described in Paragraph 5.35 below) with increases in the contracted bandwidth charge.
- 5.30 In the January Consultation we asked respondents the following questions:

⁹¹ Ofcom has recognised this in setting other charge controls, notably those for WLR, MPF and SMPF services as it supports Ofcom's objective of minimising early termination charges and minimum contract periods.

Question 5.4: Do respondents agree that safeguard caps of RPI-0% should apply to ancillary service charges?

Question 5.5: Do respondents agree that a safeguard cap of RPI-0% should apply to the contracted bandwidth charge?

Consultation responses

- 5.31 TTG and another respondent agreed with our proposals of safeguard caps of RPI-0% on ancillary service and contracted bandwidth charges. C&WW said that it would prefer ancillary service charges to form a separate basket of services. In relation to the safeguard cap on the contracted bandwidth charge, C&WW said that it *“agrees that BT should be prevented from offsetting the end user access price reductions with increases to the contracted bandwidth charge”* because BT’s ability to increase charges unexpectedly will not give CPs the predictability around prices that they require. In order to address their concerns, they suggested separate baskets or restrictive sub-caps.
- 5.32 Conversely, BT believes that safeguard caps are *“an unnecessary addition to the charge control”*. It argued that any concern about excessive charges could be addressed by the cost orientation remedy. BT suggested that it should have *“the freedom to develop the charging structure reflecting the different rates of change in costs and volumes”*.

Our response

- 5.33 We have addressed C&WW’s suggestion of placing the WBA ancillary service charges in a separate basket in paragraph 5.15.
- 5.34 C&WW does not develop its idea of restrictive sub-caps in detail. We assume that they believe the sub-caps should be more restrictive than the RPI-0% we proposed. In addition, whilst C&WW says it agrees with our proposal that BT should be prevented from increasing the bandwidth charge, our proposal does not remove all pricing flexibility (within the charge control basket) from BT. We would, however, agree that unlimited freedom for BT to vary these charges would be undesirable for the reasons we set out above, and we would also agree that it is generally beneficial for charges for services provided by a dominant provider in a market to be reasonably predictable. We have to strike a balance between these concerns and the desirability of allowing some flexibility to respond to changes in relative cost and demand conditions. We think the proposed RPI-0% sub-caps achieve that.
- 5.35 In the January Consultation, we explained that the need for a sub-cap on the contracted bandwidth charge arose from the use of prior-year weights to assess compliance with the basket. We were concerned that this could create incentives to concentrate price reductions on other charges within the basket offset by increases in the contracted bandwidth charge. In practice, we think the structure of the charge control will mean that this is unlikely. As explained in Section 4, our “upstream input” approach to the charge control means that the bandwidth charge element accounts for a large proportion of the basket revenues. As a result, this makes it unlikely that BT would in practice be able to comply with the control without reducing the contracted bandwidth charge. In addition, BT may in fact have an incentive to reduce the contracted bandwidth charge as this is likely to be an

effective way of increasing demand and revenues.⁹² As we noted earlier, some ancillary service charges are already low relative to costs and more restrictive controls to align charges with costs are not needed. In the light of this, and our view set out above that we should not risk making price structures unnecessarily rigid, we do not see a case for more restrictive constraints.

- 5.36 That said, we do not believe that the competition concerns addressed by imposing safeguard caps to certain charges within a basket could be equally well addressed by the cost orientation remedy. The floors and ceilings imposed on charges through the cost orientation obligation are usually separated by quite a wide range and do not restrict the change in the charge from one year to another. A cost orientation requirement alone would therefore not adequately address concerns about the predictability of charges or the ability (with prior year weights) to make excess profits by increasing the prices of growing services.
- 5.37 In the case of some ancillary services, there are additional concerns arising from the importance of some (particularly migration) charges to the competitive process which mean a more restrictive control than that provided by cost orientation is needed, whilst it may also be difficult to obtain accurate cost data on individual ancillary services. These points were set out in paragraphs 5.28 and 5.29 of the January Consultation.
- 5.38 Finally, we note that, because the value of the proposed basket X is relatively large, there is little possibility that the safeguard cap will become the binding constraint on basket prices, or prevent the discovery of efficient relative prices.⁹³
- 5.39 In the light of this, we are imposing the sub-caps set out in the January Consultation.

End user cease charges set to zero

Our proposals

- 5.40 In the January Consultation, we also proposed to set BT Wholesale's (BTW) mark-up⁹⁴ cease charge to £0. From BTW's point of view a cease is only a data activity with minimal work required and we proposed that any cease costs incurred by BTW (other than charges levied by Openreach) may then be recovered through other charges within the charge control basket. This is consistent with Ofcom's proposals for future MPF and SMPF cease charges in the most recent LLU charge control consultation⁹⁵ on controls on WLR, MPF and SMPF charges.
- 5.41 In the January Consultation we asked respondents the following question:

Question 5.2: Do respondents agree with our proposal for the BT end user cease charge?

⁹² The fact that it has not done so far may simply reflect profit maximising behaviour in the absence of a charge control.

⁹³ This can happen where the value of X is small. For example, an overall basket constraint of RPI-1% or RPI-1.5% combined with sub-caps of RPI-0% could give little flexibility to vary relative prices.

⁹⁴ Additional mark-up charges are those ancillary charges where BT charges levied on CPs encompass an additional mark-up to the charges imposed by Openreach.

⁹⁵ See Paragraphs 4.108 to 4.114 of "Charge control review for LLU and WLR services", 31 March 2011 available at <http://stakeholders.ofcom.org.uk/consultations/wlr-cc-2011/>

Consultation responses

- 5.42 TTG commented that it supported the aim of reducing barriers to switching, although it thought that charges should be at least equal to incremental cost in order to disincentivise (allocatively) inefficient behaviour. In any case, it said that the approach to setting BT end user cease charges should be applied consistently across all cease charges including SMPF, MPF, WLR and IPS Connect.
- 5.43 BT suggested that it should be free to recover the costs incurred by ceases through other charges within the basket. BT believes that a possible suggestion to recover these costs through the connection charge would result in customers leaving the company being subsidised by those who are joining. BT also argued that, although the soft cease is a pass-through, they effectively incur jumpering costs to make efficient use of capacity and therefore suggest including this charge in the basket and recovering these costs as part of the rental cost stack.

Our response

- 5.44 Our proposal for setting BTW's cease charge to zero is consistent with our general approach to cease charges, which we have also proposed to apply in our most recent LLU charge control consultation. In that consultation, we discussed in detail our proposal for MPF and SMPF cease charges to be set to zero. In particular, we highlighted the importance of switching costs to maintaining a healthy level of competition.⁹⁶ We illustrated (in Paragraphs 4.109 to 4.110 of the LLU charge control consultation) how termination charges, such as cease charges, can be considered as a type of switching cost and could therefore act as a potential barrier to competition. We also analysed the costs associated with this activity, and considered it appropriate to set cease charges to zero and allow the recovery of associated costs through rental charges.
- 5.45 In the January Consultation, we proposed to follow a similar approach. We believed that the majority of BTW's cease charge would be made up of Openreach's cease charge, and that the incremental costs incurred by BTW would be minimal. Hence, there would be little danger of inducing excessive switching, where the benefits do not exceed the costs (the "allocative inefficiency" referred to by TTG). In paragraph 5.32 of our January Consultation, we therefore proposed that any cease costs incurred by BTW (excluding the pass-through charges) may be recovered through other charges within the basket. BT is not required to recover these costs via the connection charge. It will also be possible for BT to recover these costs through rental or other charges within the basket, provided it also complies with its other obligations including sub-caps.
- 5.46 On the point raised by BT in relation to soft cease, we understand that this charge is a records only ceasing process (i.e. jumpers are not removed from the MDF). BT argues that subsequent to a number of soft-cease activities it may carry out remedial work to achieve more efficient utilisation of MDF space. We believe that it would be difficult to identify a specific WBA customer to recover jumpering costs from, as they are incurred when BT decides to achieve a more efficient utilisation of the MDF space. Furthermore, we note that all ancillary services costs, excluding the ones we explicitly took out, have been included in our basket and recovered through other charges.

⁹⁶ <http://stakeholders.ofcom.org.uk/binaries/consultations/consumer-switching/summary/switching.pdf>

Certain discounts should not contribute towards meeting charge control obligations

Our proposals

- 5.47 As discussed in Paragraphs 5.47 to 5.51 of the January Consultation, BT's current charging structure in Market 1 areas is simple and does not involve any volume, geographic and term discounts. We proposed that volume, geographic and term discounts should not contribute towards BT's charge control obligations and that, in calculating compliance with the charge control, the relevant revenues will be calculated at the undiscounted rate.
- 5.48 In the January Consultation we asked respondents the following question:

Question 5.6: Do respondents agree with our approach to discounts under the charge control in WBA Market 1 area?

Consultation responses

- 5.49 All the four respondents who commented on this question agreed with our proposed approach on discounts with the exception of TTG. TTG believes that discounts should count towards compliance with the charge control provided they are cost reflective and applied on a non-discriminatory basis.

Our response

- 5.50 We have considered TTG's comments on our approach to discounts under the charge control in WBA Market 1. In the event that BT were to propose volume, geographic or term discounts on WBA services in Market 1 in the future, BT would first need to ensure that there was no breach of the obligation not to discriminate unduly. As we explained in the January Consultation, we are concerned that discounts of these types could favour BT's downstream business and, if so, they would be likely to be considered unduly discriminatory. The set out below the reasons for our concerns as identified in the January Consultation.
- 5.51 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. In the Market 1 exchanges, BT Retail is the largest purchaser of IPS Connect. As such, we would be concerned that, if BT were to offer such discounts, it would favour the largest downstream players, in particular BT itself, and this could have a detrimental impact on competition.
- 5.52 In terms of geographic discounts, we noted that BT may have an incentive to concentrate price reductions in more competitive areas and offset these against smaller reductions (or increases) in less competitive areas. Such differential charging by geographic area is likely to involve the application of discounts on an exchange-by-exchange basis.
- 5.53 With regards to term discounts, we noted in the January Consultation that the charge control is aimed at reducing the price of BT's services, and we felt that BT should not be able to provide these cuts only where long-term contracts are signed as this could make customers less likely to switch operator.

5.54 As BT does not currently offer discounts on WBA charges in Market 1 and we do not expect it to do so, we have not considered these issues in detail in this charge control.

Step 1 conclusions

5.55 Based on the reasoning set out above, we are imposing:

- A single charge control basket with safeguard caps on ancillary and contracted bandwidth charges as summarised in Table 5.4;
- BTW cease charge set to £0;
- Prior year revenue weights used for assessing compliance; and
- Discounts do not count towards charge control compliance.

Table 5.4 – Summary of the charge control baskets⁹⁷

Basket	Services within scope	Value of sub-cap
IPS Connect	IPS Connect Max and Max Premium (up to 8 Mbit/s) End User Access (EUA) – connection and rental	
	IPS Connect EU bandwidth charge per month	
	IPS Connect contracted bandwidth per Mbit/s per node rental	RPI-0%
	IPS Connect EU re-grade	RPI-0%
	IPS Connect EU migration	RPI-0%
	IPS Connect EU cancellation	RPI-0%
	IPS Connect communication provider handover rental	
	IPS Connect 20C Interconnect links 1Gbit/s AND 10Gbit/s rentals	

Step 2: Determine base year costs

We use CCA FAC costs, using 2009/10 as our base year

Our proposals

- 5.56 In the January Consultation we considered two options in the context of determining the apportionment of common costs for this charge control:
- Current Cost Accounting with Fully Allocated Costs (“CCA FAC”); and

⁹⁷This table refers to the services as currently being named in Part 8 (BT IPStream Connect) of BT’s Service Provider Price List website ([BT Price List](#)). The description of services included in the charge control basket is in Annex 1.

- LRIC⁹⁸ plus a mark up to allocate common costs in proportion to the costs incurred by the service (also known as Equi-Proportional Mark-Up or “LRIC+EPMU”).

5.57 We proposed to use CCA FAC over LRIC+EPMU. CCA FAC has the benefit of greater transparency to enable us to map more accurately BT’s audited regulatory financial statements to relevant base year costs. CCA FAC is also consistent with the general approach to other charge controls currently being determined by Ofcom for other areas of BT’s business such as WLR/LLU and wholesale ISDN30. This ensures that all common costs are properly accounted for. There were also significantly more resources (in terms of costs and time) required by the LRIC+EPMU modelling approach.

5.58 We asked the following question to respondents:

Question 5.7: Do respondents agree that CCA FAC is the appropriate cost basis to use in setting the charge control for WBA services in Market 1?

Consultation responses

5.59 Two respondents agree with our proposal of using CCA FAC as they believe it is the most appropriate costing approach for setting regulated prices. In particular, BT thinks it is the most appropriate costing approach for setting regulated prices and it has the advantage of being consistent with BT’s regulatory accounts. BT also believes that this method is clearly superior to an HCA basis where asset values could be significantly out of line with the replacement cost of assets. BT also commented that a LRIC + EPMU basis for setting charges is very data intensive, some of which is not currently available and so is not a practical option at this stage.

5.60 A third respondent disagrees with our approach and encourages Ofcom to set controls based on LRIC+EPMU. They believe that our approach should ensure that BT’s cost base is transparent and auditable so that it does not allow BT to allocate costs to monopoly products and/or products that it does not use itself. The respondent believes that LRIC+EPMU better meets these objectives than CCA FAC as LRIC+EPMU effectively removes the ability for BT to allocate common costs in its own interests. Nevertheless, they believe that regardless of which system is ultimately chosen, it is a fundamental requirement that the relevant figures are audited on a regular basis.

Our response

5.61 We disagree with the respondent’s view that LRIC+EPMU is more transparent than CCA FAC. Monitoring BT’s financial performance on a LRIC basis is not straightforward, as its wholesale service profitability as reported in its regulatory financial statements is generally on a CCA FAC basis. A charge control based on CCA FAC data can be reconciled more easily to BT’s regulatory financial statements, which are audited and are in the public domain. We are also of the view that CCA FAC and LRIC+EPMU should provide reasonably similar results, particularly at more aggregate levels, since the overall total of costs to be recovered is the same.

⁹⁸ Long Run Incremental Costs

- 5.62 The use of CCA FAC is consistent with the approach we have adopted for other recent charge controls. It is our view that a consistent approach amongst various charge controls on BT is desirable as many of the common costs under consideration are ‘common’ across a wide portfolio of services in different markets. Consistency will enable systematic over- or under-recovery of costs to be avoided.
- 5.63 Moreover, it is only at the level of the basket that charges are brought into line with costs, whether this is set on an FAC or a LRIC+EPMU basis. Within the basket, BT has freedom to vary individual prices which therefore do not have to equal either FAC or LRIC+EPMU.
- 5.64 We note that our use of CCA FAC to set the current controls was scrutinised by the Competition Commission in the LLU Appeal Determination and the WLR Appeal Determination. In its determination, the Competition Commission found that we were not in error in our use of CCA FAC to check that the price differentials between MPF and SMPF+WLR were at least equal to LRIC differentials. It also found that we had given sufficient weight to allocative and dynamic efficiency factors in adopting a CCA FAC approach to cost allocation.⁹⁹

We apply certain adjustments to base year regulatory financial statements costs

Our proposals

- 5.65 In our January Consultation, we proposed a number of adjustments to the reported WBA costs in order to arrive at our view of the relevant base year costs used in our cost forecasting model. These were set out in detail in Paragraphs 5.52 to 5.67 as well as Annex 6 of the January Consultation and can be categorised into the following types:
- i) Adjustments to the reported 2009/2010 regulatory financial statements. These include an adjustment for new market definition as set out in the 2010 WBA Statement as well as an inclusion of additional ATM costs that were incorrectly excluded from the WBA market costs in the 2009/10 regulatory financial statements.
 - ii) For the non-geographic costs (relating to the ATM network and backhaul) reported in the 2009/10 regulatory financial statements, we developed a methodology based on relevant factors such as rental and connection volumes and number of DSLAMs to attribute these to Market 1 exchanges.
 - iii) Exclude costs that are outside our basket, as set out in Section 3. These are costs associated with ancillary services whereby there is a pass through of Openreach charges¹⁰⁰ and eliminate ‘one-off’, non-relevant or non-recurring costs (such as transition costs related to 21CN activities) in 2009/10;
 - iv) Apply adjustments that are consistent with our policy approach. These are:

⁹⁹ See the LLU Appeal Determination and the WLR Appeal Determination.

¹⁰⁰ See Table A7.19 of our January Consultation for a list of the pure pass through charges.

- Removed pass through costs from Openreach's SMPF charge;¹⁰¹ and
 - Increased the values of some asset types so that they approximate their levels in a "steady state."
- 5.66 The last adjustment was necessary because a number of the assets used in the WBA market are fully depreciated. This is not consistent with our "hypothetical ongoing network" (HON) assumption, where in the absence of investments in 21CN, BT would have had to replace these depreciated assets. As a result, some of the asset values in BT's data were below the level consistent with what we believed a "steady state" value would be. Specifically, we believe that, on average, assets in a steady state would be half way through their economic lives. As such, BT's financial data were unsuitable as a basis for projecting the costs of a hypothetical ongoing network.
- 5.67 To address this, we uplifted net replacement costs such that the ratio of net replacement costs to gross replacement costs (NRC/GRC) were consistent with a hypothetical ongoing, steady state network assumption. That is, network investments would have added to the existing level of net replacement costs. Specifically, in the January Consultation we:
- Adjusted the NRC/GRC ratio for the ATM component from 17% to 31% to bring it in line with the NRC/GRC ratio for the rest of the network assets;
 - Left unchanged the NRC/GRC ratios for DSLAM and backhaul assets at 31% and 33% respectively; and
 - Adjusted the DSLAM asset life from the implied life of thirteen years to eight years, the ATM asset life from twenty-seven years to ten years, and left the backhaul asset life unchanged at twenty-three years.
- 5.68 In the January Consultation we asked the following question to respondents:

Question 5.8: Do respondents agree that our adjustments to BT's base year costs in Market 1 are appropriate?

Consultation responses

- 5.69 We did not receive any comments regarding the adjustment of the regulatory financial statements data for the new market definition. Two respondents commented on our approach to adjusting base year costs. BT and C&WW both agreed with the correction of errors in the base year data.
- 5.70 C&WW also noted that BT's request for the inclusion of ATM costs (omitted from the regulatory financial statements) provided a further example of the inaccuracy of BT's regulated accounts and expects Ofcom to consider taking punitive action if such ongoing corrections continue.

¹⁰¹ We note that this approach requires a similar treatment on the revenues side. BT's end user access rental and connections would have incorporated corresponding Openreach SMPF connection and rental charges. So, when calculating X, we need to compare revenues excluding Openreach SMPF costs against the charge control basket costs.

- 5.71 BT stated that pension deficit repair contributions should be taking into account when setting this charge control. As these are a cost of BT doing business going forward and, in so far as they result from pensions costs that were efficiently incurred, it is reasonable and consistent with Ofcom's regulatory duties and stated objectives for this charge control that they be included when calculating the cost base for regulated charges for Market 1. BT submitted a confidential annex on this issue.
- 5.72 BT agreed with our allocation of non-geographic costs in the 2009/10 regulatory financial statements. TTG expressed concerns regarding the treatment of ATM costs in Market 1. They argued that the Ofcom model seems to be based on the continuing use of ATM in Market 2 and Market 3, which results in the ATM costs in Market 1 recovering a similar share of the fixed cost of running the ATM network. As BT deploys 21CN, the use of ATM in the remaining Market 2 and Market 3 will diminish and this should lead to an increase of the share of the fixed ATM cost for Market 1.
- 5.73 We did not receive many comments regarding the removal of pass-through costs from the base year costs of the charge control basket. TTG, however, did express concerns over the base year basket revenues as they have not been adjusted consistently with costs. They gave an example that whilst Openreach's special fault investigations (SFI) costs have been excluded from the base year costs, it was not clear to TTG that the pass-through of Openreach SFI revenues have been excluded from the base year revenues.
- 5.74 BT agreed with the removal of upstream Openreach costs according to the upstream EOI approach.
- 5.75 TTG makes two points regarding the use of the SMPF charge. Firstly, it believes that this charge has little meaning as demonstrated by the fact that the internal SMPF charge/price is less than the external SMPF price.¹⁰² TTG thinks that external SMPF price should be close to internal SMPF cost particularly since there is equivalence.
- 5.76 Secondly, TTG does not believe there is clarity of how exchange costs are included in the model. They think that exchange costs should be based on the charge made to LLU operators (rather than the wholesale charges for these products such as co-mingling, power and tie cables) in the same way that SMPF cost elements are based on the SMPF charge rather than using the actual/internal incurred costs. TTG thinks that by using the charges LLU operators pay (which are higher) will not create unlevel playing field.
- 5.77 BT made a number of points regarding the adjustments related to the hypothetical ongoing network assumption. Firstly, BT disagreed with the removal of costs that relates to the adoption of new technology because they believe the remaining costs relating to the 'old technology network' do not truly reflect a hypothetical ongoing network.
- 5.78 Secondly, BT argued that the uplift applied to NRC of the ATM assets associated with the steady state ongoing network assumption should also be applied to backhaul and DSLAM assets. They believed that higher uplift to depreciation for DSLAM and backhaul should apply because the NRC/GRC ratios for DSLAM and

¹⁰² They refer to Table 5.2 of the January Consultation.

SDH assets at 31 March 2010 were 20.5% and 19.7% respectively, which are similar to that of the ATM component.

- 5.79 On DSLAMs BT noted that across the WBA market, many DSLAMs have already been fully depreciated, and therefore the total NRC is below what it would otherwise be. Since Ofcom's model allocates total NRC to Market 1 exchanges using based on the proportion of DSLAMs in this market, the value is therefore suppressed. On backhaul, BT argued that backhaul component includes SDH transmission assets, some of which are approaching the end of the depreciation life. As such, it is inappropriate to assume a twenty-three year asset life for backhaul assets when calculating the depreciation charge. Together, BT believes that the risk associated with this inconsistency is that the true costs of the HON within WBA Market 1 are underestimated.
- 5.80 On the appropriate NRC/GRC ratio to assume, BT suggested that the NRC/GRC ratio for DSLAM and backhaul assets should be around 40 to 50% and 50% for ATM asset types. BT also suggested that the appropriate asset life for the ATM, backhaul and DSLAM components to use in calculating the annual depreciation charge is around 10 years.

Our response

We make adjustments to the base year regulatory financial statements

- 5.81 In line with the responses we will continue to use our adjusted base year costs recognising that the adjustments ensure the base year cost data is the most accurate reflection of what we believe BT's WBA costs in Market 1 to be.
- 5.82 BT's audited regulated accounts represent our best view of BT's costs for its regulated services. We do acknowledge that the necessity to make retrospective adjustments to these accounts is not ideal. We will be considering this issue in our planned review of BT's regulated accounts currently scheduled to commence this year. However, these adjustments in the context of BT's regulated accounts are relatively minor.

We do not allow for pension deficit costs

- 5.83 We have not included costs related to the repair of BT's pension deficit. In excluding such costs, we have been consistent with our pensions review statement ('the Pensions Review')¹⁰³ which we published in December 2010. In the January Consultation, we conducted detailed analysis of the costs of providing the WBA service. Within the Pensions Review, we explained that the Pension Guidelines set out the approach that Ofcom would normally expect to take. We stated that we intend to have regard to the specific facts relevant to each case. However, unless we consider that there has been a material change in circumstances and background since the Pension Review, we would not expect to reconsider the general issues.
- 5.84 BT did not raise the issue of recovery of deficit repair payments during this process. As this is the first time BT has discussed the issue of deficit repair payments in relation to the WBA charge control, we are dealing with it at the first available opportunity.

¹⁰³<http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/statement/statement.pdf>

- 5.85 BT has reiterated a number of arguments which it raised as part of the Pensions Review, in response to the January Consultation. BT's points are all related to our first Guideline (disallowing deficit repair payments when setting regulated charges) BT acknowledges this:

“BT refers Ofcom again to its two responses submitted in the course of the pensions guidelines consultation. BT continues to rely upon the points made in these submissions and the accompanying report by KPMG.”¹⁰⁴

- 5.86 We have already considered BT's arguments as part of the general issues in our Pensions Review. BT has not provided any new evidence to demonstrate that there has been a material change in the circumstances since the Pensions Review concluded in December 2010.
- 5.87 Therefore, we do not consider that there has been a material change in circumstances or background which requires reconsideration of the general issues. We therefore intend to apply the Pension Guidelines to the WBA charge control. We summarise our view on the points reiterated by BT as part of its response in Annex 3.

We allocate non-geographic costs based on demand driven by end users in Market 1 exchange

- 5.88 We continue to believe our allocation of non-geographic costs represents the most appropriate way of determining the costs of WBA Market 1 services. In responding to TTG's argument that we should allocate a higher share of the fixed costs of BT's ATM network to Market 1 to allow for its replacement over time by 21CN in Markets 2 and Market 3, we note that our model reflects an anchor pricing approach. A key advantage of this approach is that customers are not made worse off by the introduction of new technology. By contrast, if BT were allowed to raise prices to customers served using older technology if new technology is introduced, this could distort the incentives it faces. We also note that customers in Market 1, who might face higher prices if we adopted TTG's suggestion, will get no benefit from the availability of new technology in other geographic markets. See also our response to another TTG argument in paragraph 5.75 above.

We exclude costs that are outside our basket definition

- 5.89 The base year basket revenues and the base year costs have been consistently adjusted. In relation to the Special Fault Investigation (SFI) pass-through charge mentioned by TTG, Table A6.6 in Annex 6 of the January Consultation shows that we took out costs which are recovered against revenues outside the main basket. The table shows that £22m was excluded across the three WBA markets of which £5m related to Market 1. For instance, Openreach's SFI costs have been excluded from the base year costs but it is not clear that the pass-through Openreach SFI revenues have been excluded from the base year revenues.

We remove Openreach's SMPF charges from base year costs

- 5.90 In its response, TTG points out that the internal SMPF charge/price is less than the external SMPF price referring to Table 5.2 of the January Consultation. However, the 'Equivalence of Input (EOI) view' section of this table reflects SMPF-related costs of £151m, which are actual SMPF costs included in the WBA cost stack which

¹⁰⁴ <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/bt-annex-3.pdf>.

are removed. The table then showed under the same 'EOI view' heading £199 million of SMPF-related charges from Openreach that are added in place of the £151 million of costs. Openreach's charges are incurred by both internal and external parties. The difference in costs is due to the fact that the £151 million of actual incurred costs do not include all the activities that form the SMPF Openreach product, thus Openreach incurs additional costs in providing the SMPF product.

- 5.91 On the second point raised by TTG, we note that exchange charges paid by the LLU operators reflect the costs that BT incurs in providing exchange services (such as co-mingling, power and tie cables) to third party operators at a national market level. These costs may well be different to the costs that BT incurs in providing these services to its own downstream business in Market 1 (exchanges in Market 1 are considerably different to the national footprint). As BT is not required to consume these activities on an EOI basis, we believe that the use of the actual costs in our HON model better reflects the real costs of the exchanges. Our model reflects a technology neutral position and as such, models the costs of the current technology used by BT in Market 1 in the absence of 21CN investment.

We apply the anchor pricing approach assuming a hypothetical ongoing network

- 5.92 In the light of BT's response as detailed above and of the further additional evidence,¹⁰⁵ we received from BT following the points raised in its response, we have reviewed our approach to the adjustments made to the asset types employed in our HON approach.
- 5.93 The NRC/GRC ratio is used in our hypothetical ongoing network to determine the cost of the capital employed in the network and the annual cost of capital amount that is used in the calculation of the X value. The asset life in the model is used to derive the annual depreciation charge that forms part of the annual operating costs within the X calculation. A shorter asset life will increase the depreciation element of annual operating costs whilst a longer life will reduce that element of annual operating costs.
- 5.94 In principle, we agree with BT's comments that a net replacement cost to gross replacement cost ratio (NRC/GRC) of less than 40% is not consistent with an ongoing hypothetical network if the asset life used to calculate depreciation is a reasonable approximation to the asset's economic life (as it should be). In the January Consultation, we made adjustments to bring the NRC/GRC ratio of assets, which were less than the network average, up to the network average of 31%. However, with further review we now believe it is more in line with an ongoing network in a steady state to assume assets are, on average, half way through their useful life and to take a realistic view about the useful lives of the relevant assets for the purposes of calculating depreciation.
- 5.95 Although there may be examples where this is not the most appropriate assumption, we believe that in this case a NRC/GRC ratio of 50% to be in line with a hypothetical ongoing network operating in a steady state.
- 5.96 We have also reviewed the asset lives we have used for the assets in our hypothetical ongoing network in light of BT's comments described above.

¹⁰⁵ We requested further information from BT specifically requiring them to show details of the observed asset life's, the book accounting asset life's, and further evidence to support the argument they made in their response to the January Consultation.

Considering the main asset component groups our conclusions are explained below.

DSLAM Component

- 5.97 In the January Consultation, we reduced the DSLAM asset life from the implied life of thirteen years to BT's suggested asset life of eight years. However, after further analysis BT suggested the asset life for the DSLAM components should be ten years. BT has since then provided further analysis with their revised view that the DSLAM asset life should be eight years.
- 5.98 We have looked at the accounting asset lives in the regulated accounts for components in the same category as the DSLAM components and observed that for this type of component BT uses a book accounting life of between three and eighteen years, and for many of the components uses ten years as an accounting life. We believe using an asset life of ten years would be consistent with our analysis from the regulated accounts and also consistent with BT's most detailed recent response which, although it suggests an asset life of eight years for the DSLAM components, does so with a NRC/GRC ratio of 40%.
- 5.99 Our guiding principle, however, is that our assumed life should be a reasonable estimate of the economic life of the assets going forward. This is so that the control we set will allow BT to recover the costs of the investments needed to support the significant future growth we expect. Given the pace of change in technology and customer demands in these markets, an economic life of ten years is a reasonable reflection of the risk of obsolescence.
- 5.100 We note that there is an implied relationship between the NRC/GRC ratio used in our model and the asset life adopted. If the NRC/GRC ratio of a component is less than 50% in a steady state situation it is implied that the asset life used is shorter than the economic life of the asset. For example if a NRC/GRC ratio of less than 50% is suggested, it implies the employed asset life is usually shorter than the actual economic life. Thus if the NRC/GRC ratio is uplifted to 50% the asset life should in line be increased from the eight years.
- 5.101 Our revised assumptions of asset lives to be used in the model going forward is consistent with the expected economic lives for each asset type. As a result, the corresponding assumption for the NRC/GRC ratios would be 50%, therefore consistent with our assumption above.

ATM Component

- 5.102 In the January Consultation, we reduced the ATM asset life from the implied life of twenty-seven years to BT's suggested asset life of ten years. BT's response to our consultation after further analysis suggested ten years was the correct asset life for the ATM components. BT then provided further analysis post their January Consultation response which further re-enforced their view that ten years was the correct asset life to use for all ATM assets.
- 5.103 We have again looked at the accounting asset lives in the regulated accounts for components in the same category as the ATM components and observed that for this type of component BT use a book accounting life of between three and twenty years, but for many of the components use ten years as an accounting life. We believe using an asset life of ten years would be consistent with our analysis of the regulated accounts and the other data provided by BT.

Backhaul Component

- 5.104 In the January Consultation, we did not change the asset life from the implied life of twenty-two years. However in its response BT suggested the asset life for the backhaul components should be consistent with that of the ATM and DSLAM component being ten years. BT then provided further analysis post their January Consultation response with the revised view that the backhaul component should have an asset life of twelve years.
- 5.105 We have looked at the accounting asset lives in the regulated accounts for components in the same category as the backhaul components. The backhaul component consists, according to BT's data, of a high percentage (35%) of the sub-category 'duct' (which has a long asset life of forty years). We have produced an implied asset life for the backhaul components using a forty years depreciation rate for the duct element and ten years for the remaining elements. This produces an average implied asset life of thirteen years.
- 5.106 We believe using this asset life of thirteen years would be consistent with our analysis from the regulated accounts and also consistent with BT's latest response which although suggests an asset life of twelve years does so with a NRC/GRC ratio of 40%.
- 5.107 The total gross replacement cost of the DSLAM, ATM, and backhaul assets are approximately £2.7 billion, with a combined NRC to GRC ratio of around 27%. Increasing this to 50% would mean an increase in the capital employed in the model by around £0.6 billion. At the same time, reducing the asset lives of the ATM and backhaul components will increase the annual depreciation charge and thus increase the costs to be recovered through the basket. In the January Consultation, we had assumed that the appropriate NRC to GRC ratio would be around 31%. Given that the DSLAM and backhaul components had NRC to GRC ratios above this, this uplift only applied to the ATM assets. The impact of uplifting all the three asset types to 50% is the reduction of the value of the X by 1.5%. The combination of a reduction in the asset life assumptions for the ATM and backhaul components with the increase in the assumed DSLAM asset life reduces the X by another 0.25%.
- 5.108 Table 5.5 shows the adjustment for different asset types that is consistent with our hypothetical ongoing steady state network.

Table 5.5 – Adjustment made for different asset types

Asset	NRC to GRC ratio	Asset life
DSLAM	50%	10 years
ATM	50%	10 years
Backhaul	50%	13 years

Call Centre costs

- 5.109 Since the January Consultation, BT has identified additional call centre costs that it believes should be added to the base year costs. These costs are in the region of £20 to £30 million for the whole WBA market. If they are allocated on the basis of broadband rentals across the three WBA geographic markets, this would add around £5millionstoMarket 1.
- 5.110 BT explained that the reason for the omission of these costs was an error in their prior year’s allocation basis. Costs for a group of call centres were allocated on the basis of a survey carried out on a ‘sample’ call centre. However, BT later discovered that this ‘sample’ call centre was not representative of the group of call centres and specifically performed PPC (partial private circuits) activities.
- 5.111 Additionally in carrying out this survey BT has identified a number of call centres that are solely focussed on WBA customers. BT now proposes that the cost for these call centres that are solely focussed on WBA customers be allocated directly to the WBA market instead of the previous allocation method used as described above.
- 5.112 We have requested additional detailed information from BT to support their analysis that these costs should correctly be included. BT has provided a detailed description of the call centres, personnel employed, and management structure, together with a more comprehensive breakdown of the actual costs in 2009/2010, the base year of our charge control model.
- 5.113 The data and evidence BT has presented shows that the allocation method used previously allocates very few costs to the WBA market. On a per customer basis this represents less than £1 per customer (with the average customer paying over £100 per year for a WBA product). We believe from the evidence and analysis presented that the cost of call centres supporting the WBA markets are not correctly represented in our base year costs within our charge control model
- 5.114 We are therefore inclined to agree with BT and adopt the allocation method they propose for WBA call centre costs and attribute the costs of the call centres handling WBA related calls directly to the WBA base year input costs within our charge control model.
- 5.115 As shown in the table below the total costs of wholesale call centres is £54 million. Of these, £21 million relate to call centres that are solely focussed on WBA related activities. These call centres consist of 956 full time equivalent (FTE) personnel. However, 40 FTE also answer general wholesale calls thus the total specific call

centre amount of £21 million is reduced by 4.2%.¹⁰⁶ We have also noted that previously £1.6 million of call centre costs have been attributed to the WBA market so we have also reduced the additional costs to be added by this amount. This means that we need to add £18.5 million of additional call centre costs across all WBA markets.

5.116 We then need to allocate these costs (£18.7m) across the geographic markets using an appropriate allocation key. Considering that the costs are driven by the number of customers calling the call centres, it seems appropriate to allocate these costs into the geographic markets using the number of rentals in the market as an allocation key. Market 1 represents about 25% of the total WBA rentals, thus the additional costs that we have added to Market 1 are £4.6 million which equate to appropriately £2 per WBA rental line.

Table 5.6 –Additional call centre costs by category

2009/2010	£'000
Total call centre costs	£53,643
Broadband specific call centres	£21,010
General wholesale call handling reduction	£879
Costs already allocated to the WBA market	£1,656
Additional costs to be allocated to the WBA market	£18,475

5.117 BT had suggested that in addition to these direct call centre costs for which they have provided very detailed data we need also to include a relevant BT management overhead. They have suggested this should be in line with the general BT wholesale rate of 40% of the direct cost base. We have considered this further increase to the call centre costs added and looked at the data BT has provided. However, we feel on balance there is not enough evidence to justify a general mark-up of direct costs to the amount of 40%. BT have not sufficiently demonstrated that these direct costs would attract any mark-up that has not already been allocated in BT's accounting system, and the 40% suggested by BT has little justification or explanation.

5.118 We also carried out further analysis on these call centre costs to determine if they were previously included in any other regulated market. We wanted to ensure that by making a correction to these costs and including them in the WBA market we were not allowing BT to double recover the costs. Our analysis showed that these additional call centre costs were previously captured in the Leased Line charge control (LLCC) charge control and therefore there is a danger that these costs may be recovered twice in charge controlled products. We will address this point in the next LLCC charge control review and will consider whether an adjustment for the previous incorrect inclusion of these costs in LLCC charges is appropriate.

¹⁰⁶ 4.2% = 40/956

Step 2 Conclusions

5.119 Based on the reasoning set out above, we conclude that:

- CCA FAC is the appropriate cost base to use in setting the charge control for WBA services in Market 1 area; and
- The adjustments to the base year CCA FAC costs are as shown in Table 5.7.

Table 5.7 – Base year Market 1 costs

	£million
BT's regulatory financial statements 2009/10*	
Market 1 attributed costs	92
Non-geographic (Non-attributed) costs	500
Market 2&3 attributed costs	214
Total WBA costs as per the regulatory financial statements (excluding holding (gain)/loss)	806
EOI view	
SMPF related costs**	-153
Openreach SMPF costs***	199
EOI view	852
EOI view without SMPF costs	654
Adjustments to regulatory financial statements	
Include additional ATM costs	21
Include additional call centre costs	18
Total adjustment	39
Policy adjustments	
Exclude software depreciation	-33
Exclude 21CN re-grade costs	-38
Total adjustment	-73
Basket view of Market 1 costs	
Exclude SFI costs recovered through pass-through of Openreach charge	-22
Allocation of non-geographic costs	
WBA market total costs, post adjustments	599
Market 1	155
Markets 2 and 3	444
Base year Market 1 costs	
CCA adjustment (holding losses)	9
Depreciation adjustment associated with HON assumption	14
Return on capital	38
Total base year market 1 costs	215

*BT attributed costs in line with the 2008 WBA Statement market boundaries as per BT's Current cost statements for 2010 page 76.

** SMPF related costs included in the WBA cost stack that need to be replaced by the EOI SMPF Openreach charge

*** Openreach SMPF costs are calculated as Openreach SMPF charge multiplied by BTW volumes.

Step 3: Forecast the costs of the services for the duration of the charge control

Approach to volume forecasts

5.120 In the January Consultation we proposed to approach volume forecasting in three distinct ways:

- i) End user volumes, i.e. rentals and connections;
- ii) Allocated bandwidth required per end user; and
- iii) Backhaul, where backhaul refers to the conveyance of end user traffic from the local exchange to the handover site (i.e. at the BRAS).

5.121 As with any standard charge control, there is a need to make assumptions regarding expected volume growth. Typically, volume growth results in lower unit costs as a consequence of economies of scale. Passing this reduction on to end users in the form of lower prices would achieve allocative efficiency. On the other hand, we need to consider potential benefits for dynamic efficiency by providing incentives for innovation and investment. An overly aggressive volume forecast is unlikely to achieve this.

5.122 Any assumption for volume growth must also be consistent with our view of what is possible using BT's existing network and allow for this in forecasting costs, consistent with our anchor pricing approach.

Our proposals

5.123 We identified two counteracting drivers of changes in end user volumes over the duration for the charge control:

- End user volume growth; and
- The rollout of LLU in Market 1.

5.124 In the January Consultation, we assumed a 2% annual growth in end users in Market 1 exchanges over the charge control period. This was based on a range of sources including brokers' reports, forecasts by consultants and BT's own view on future development of the retail broadband market.¹⁰⁷ These all pointed to a growing market, albeit at a steadily slowing rate.

5.125 We also considered potential rollout by LLU operators in Market 1 areas. This would reduce the WBA volumes we forecast as the broadband services those customers receive will be based on the LLU network rather than on BT's IPStream products. Using the information available from TTG's rollout plans¹⁰⁸ we assumed the following:

¹⁰⁷ See Annex 7 of the January Consultation for further details on the data sources used.

¹⁰⁸ TTG's announced is available at <http://www.talktalkgroup.com/ttg-events/16-11-10.html>. See the 2010 WBA Statement in paragraph 3.169 to 3.190, 4.36 to 4.40 and 5.91 to 5.92 for a further discussion of TTG's roll out plans.

- TTG would target the most attractive exchanges, as ranked by volume of customers TTG currently has or forecast it would have, for unbundling over the duration of the charge control. Some of these exchanges are in Market 2.
- Exchanges with the largest customer numbers will be unbundled first in order to migrate a higher proportion of its customer base onto the LLU network. By the end of the charge control TTG would have migrated 90% of its existing customer base in Market 1 exchanges that it unbundles from BT's network;
- For unbundled exchanges, based on the points above, we assumed there would be a 10% increase in TTG's existing customer base over 3 years, driven by increased attractiveness of TTG's offerings.

5.126 The combination of these assumptions results in TTG having around 10% of BT's current volumes by the end of the charge control period.

5.127 As set out in Paragraphs 5.68 to 5.74, we took the combined effect of the 2% underlying market growth with the 3.5% decline as a result of TTG's LLU roll-out and assumed that WBA end user volumes in Market 1 areas would fall by 1.5% per annum over the duration of the charge control in the base case, with a lower bound of -2.5% and an upper bound of 0.5%.

Consultation responses

5.128 No respondents commented on the assumption of the underlying market growth. TTG provided the list of exchanges where they intend to rollout. Specifically, it forecasts, based on the existing customers in these exchanges (currently served with BT's WBA service) and new customers (acquired by having a more competitive offering), that it would serve more than the 10% assumed in our January Consultation.

5.129 TTG also noted that the end user volume projections did not take into account the NGA rollout in the "final third" funded by Broadband Delivery UK (BDUK). TTG did not quantify the specific impact that NGA rollout may have on BT's market share in Market 1 but suggested reducing BT's market share from 90% down to about 85%.

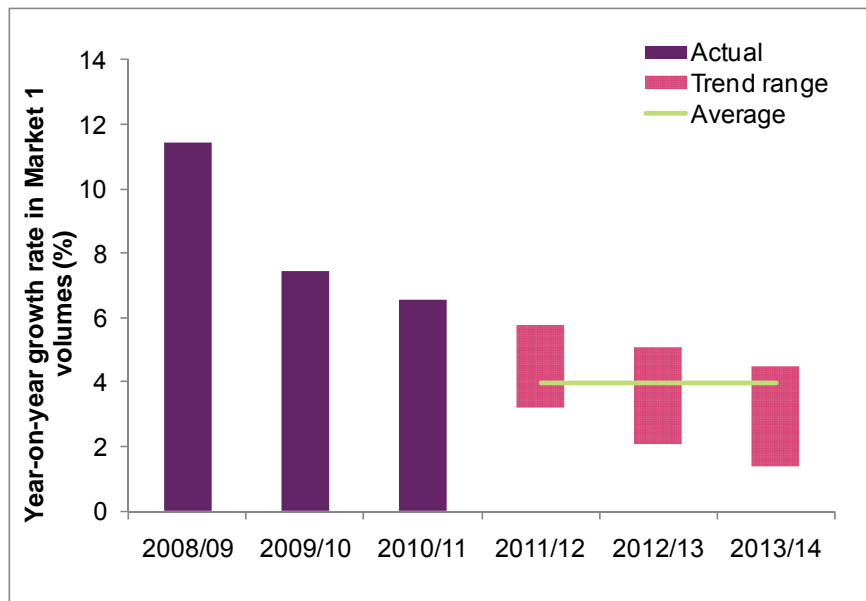
Our response

We assume 0.7% annual reduction in WBA volumes in Market 1

5.130 Since the publication of the January Consultation, we have been able to obtain updated Market 1 volumes for the quarter ending March 2011. The data suggests that volume growth has been higher than we have assumed. Broadband subscriber numbers in Market 1 grew by about 6% in 2010/11, whereas the external forecasts we used to inform our subscriber growth assumption for the January Consultation suggested that growth would be closer to 4% in 2011 with a gradual decline in growth to about 2.5% by the end of the period. An assumption of an average of 2% was therefore conservative when compared against the forecasts available at the time of the publication of the consultation document. In the light of the recent growth figures, the trends¹⁰⁹ suggest that an appropriate assumption for the average growth rate between 2011/12 and 2013/14 is around 3.5% per annum, illustrated in Figure 5.1 below.

¹⁰⁹ We considered both a linear trend as well as a logarithmic trend.

Figure 5.1 – Growth rate trends in Market 1 volumes

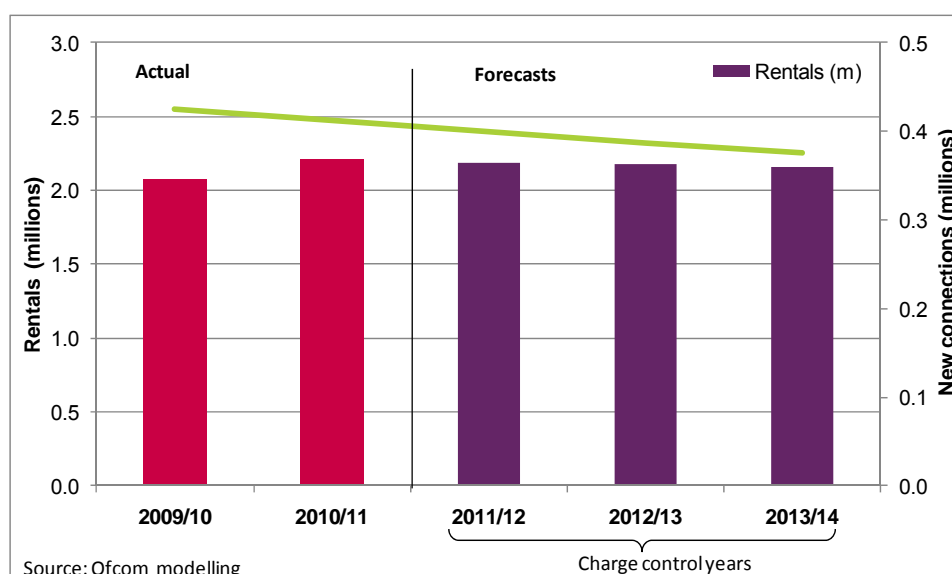


5.131 Based on the list of exchanges that TTG plans to rollout, the volume of existing customers plus forecast growth for TTG increases our estimate of TTG’s market share from 10% to [X]%. This figure assumes that TTG’s plan to further rollout in Market 1 exchanges will take place as TTG had initially planned. Whilst we accept that there is a possibility that some of this rollout may not occur, as argued by TTG, we have included the full rollout which has the effect of producing a slightly more conservative forecast of BT volumes, though we note that this effect is small.¹¹⁰ The implied annual decline in WBA volumes would be [X]% instead of the 3.5% assumed in the January Consultation.

5.132 As discussed in Paragraphs 5.73 to 5.74 in the January Consultation, our assumption of the growth in WBA volumes in Market 1 takes into account the underlying growth rate as well as the rate of migration of TTG’s customers to its LLU network. Taking into account most recent figures for Market 1 volume growth, WBA market forecasts from independent external sources, as well as TTG’s revised plans, we believe the net impact on WBA Market 1 volumes is 0.7% per annum over the charge control period. The net impact of our forecasts is illustrated in Figure 5.2.

¹¹⁰Removing all the exchanges TTG says would no longer be viable would reduce its share back to around 10% of Market 1 volumes.

Figure 5.2 - Volume forecasts for rentals and connections in Market 1



5.133 We have also considered the extent of rural broadband pilot areas to be funded under BDUK and the potential impact on the WBA volumes over this charge control period. To date three areas have been identified to receive funding,¹¹¹ and contract notices for all four of BDUK’s pilot projects have been published.¹¹² Each area will be allocated funding:

“to support the roll-out of broadband between now [October 2010] and 2015 to areas that the market alone will not reach”.¹¹³

5.134 TTG does not provide further information as to how the reduction of BT’s market share from 90% to 85% is calculated as a result of BDUK’s funding. We accept that this rollout will undoubtedly have an impact on the WBA volumes in Market 1 areas. However, we note that explicitly assuming migration of WBA volumes to superfast broadband as a result of the roll-out of next generation access (NGA) would be inconsistent with our approach to anchor pricing. We do not believe that prices for current generation services should rise as a result of NGA deployment. This is the approach we have also taken in our consultation on the WLR and LLU charge control. We stated:

“We propose to employ anchor product pricing as a guiding principle in setting the charge controls to ensure that NGA investments do not result in the charges rising for existing products”.¹¹⁴

¹¹¹ See http://www.culture.gov.uk/news/media_releases/8167.aspx

¹¹² The four areas are Highlands and Islands (tender notice published 10 June 2011 for 100% coverage by 31 December 2020, <http://ted.europa.eu/udl?uri=TED:NOTICE:183505-2011:TEXT:EN:HTML>), Hertfordshire (tender notice published 9 June 2011 <http://ted.europa.eu/udl?uri=TED:NOTICE:181875-2011:TEXT:EN:HTML>, 100% coverage by end of March 2015, with minimum data throughput of 2Mbit/s), Cumbria (tender notice published 25 March 2011, <http://ted.europa.eu/udl?uri=TED:NOTICE:96120-2011:TEXT:EN:HTML> for 100% coverage within 2.5 to 3 years with minimum speed of 2Mbit/s), and North Yorkshire (tender notice published 11 May 2011, <http://ted.europa.eu/udl?uri=TED:NOTICE:147247-2011:TEXT:EN:HTML> for close to 100% coverage).

¹¹³ See http://www.culture.gov.uk/news/news_stories/7509.aspx

¹¹⁴ See “Charge control review for LLU and WLR services”, paragraph 3.26 <http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/summary/wlr-cc-2011.pdf>

- 5.135 In addition, the rollout plans for superfast broadband for the areas identified are still at an early stage and the notices only stipulate the completion of the work by 2015, so the actual profile of deployment will depend on the details set out by the winning bidder. Given the size of these areas compared to the rest of Market 1 as well as the uncertainty of the deployment plans, we believe that this is likely to be marginal over the duration of our charge control and do not make a downward adjustment to BT's Market 1 shares.

We forecast backhaul requirements using allocated bandwidth growth per annum

Our proposals

- 5.136 We have forecasted backhaul requirements based on our technical understanding of the 20CN network. Based on the STM-1 SDH circuits and DSLAMs added at each exchange, we have then forecasted the corresponding requirements to carry the traffic on the ATM network. These were discussed in Paragraphs 5.77 to 5.82 as well as A7.42 to A7.31 in the January Consultation.
- 5.137 For each exchange, we have calculated the total bandwidth required as the product of the number of end users and allocated bandwidth per end user. We have compared this against the total bandwidth available at this exchange. If the backhaul requirement exceeds the available capacity, we have assumed that BT will add new 155Mbit/s backhaul circuits to the exchange and corresponding DSLAMs until the capacity is greater than the demand.
- 5.138 We have taken into account two factors. First, we have reduced the available capacity from 155Mbit/s to allow for SDH management overheads. The SDH management overhead captures the signalling and traffic management. For an STM-1 circuit we have assumed this overhead traffic accounts for 6% of the nominal capacity (i.e. 10Mbit/s), leaving 145Mbit/s available to carry broadband traffic.
- 5.139 Secondly, we have used data provided by BT to assess the utilisation at which network growth must occur. BT's network planning allows for end users to experience a minimum service level allowing a 2Mbit/s connection for 90% of the time. In order to meet an adequate service level,¹¹⁵ statistical modelling of the capacity required is a key input into how a network is dimensioned and utilised. Over the past year, BT's data shows that utilisation has been around 50%. That is, the actual traffic load has been approximately 50% of the provisioned ATM network capacity.

Consultation responses

- 5.140 TTG commented that they would expect the overhead requirement to decrease as capacity increases for a given level of quality. This is similar to the concept of Erlang engineering whereby the required number of voice lines per user for a given quality level decreases with an increasing number of users.
- 5.141 Another respondent argued that our proposed use of a 50% utilisation factor throughout the charge control period is too low. It considered that the trend will be for a higher utilisation factor going forward as it is very likely the case that utilisation

¹¹⁵ For example, the iPlayer suggests around 500kbit/s to stream a standard definition programme. BT has argued that assuming higher levels of utilisation would lead to a reduced level of service.

is artificially low at the present time, as a consequence of appreciable amounts of capacity being freed up by the roll out of 21CN (and migration to WBC in Markets 3).

- 5.142 BT made a number of points regarding our approach. BT thinks that our cost forecasting exercise should take into account (in addition to the asset and cost volume elasticities discussed below) the underlying network infrastructure requirements necessary to accommodate volume growth.
- 5.143 Firstly, BT argued that the total number of DSLAMs forecast is based on an idealised network infrastructure and that there are some practical constraints that Ofcom did not take into account. BT states that examples of these constraints are the use of Edge Switch Extenders (ESEs)¹¹⁶ and limited port capacity on some DSLAMs which prevent traffic being optimised across DSLAMs within the same exchange.¹¹⁷ BT has submitted separate modelling evidence to illustrate this.
- 5.144 Secondly, BT also noted that Ofcom's model underestimates the volume of transmission required across the ATM network. Whilst the ATM network has some spare port and capacity, the transmission between ATM nodes is dimensioned to carry the Virtual Paths (VPs) that have been set up across the backhaul links. As the backhaul links carry more traffic and more VPs are added, additional provision of ATM transmission across the network is needed.
- 5.145 BT also noted that in practice, there will be a need to migrate customers between the "old" and "new" DSLAMs to manage bandwidth demand in each exchange. Additional jumpering and migration costs should therefore be included to reflect this activity.
- 5.146 Finally, BT noted that the mid-year bandwidth forecast is used to estimate the investment in DSLAMs, ATM and backhaul whereas the forecast bandwidth for the following March must be accommodated within the network during the relevant year for there to be sufficient assets to deliver the necessary capacity. BT argue that this has the following impacts:
- The Capex profile required to deliver capacity between October and March is shifted six months i.e. is not recognised until the following year;
 - The capital employed at the beginning and end of the year are under-stated by six months worth of Capex. This impacts the MCE; and
 - The depreciation charge is also impacted as no depreciation is included for the six months worth of Capex.

¹¹⁶ An Edge Switch Extender is where BT has mapped several DSLAMs onto a single ATM port to optimise past investment in backhaul and ATM ports. This means that these DSLAMs will exhaust earlier than the assumed in our model.

¹¹⁷ If customers with high bandwidth demands are focussed on a single DSLAM, a lack of spare port capacity may prevent migration of high bandwidth customers to a DSLAM with spare backhaul capacity, again bringing forward the need for investment.

Our response*We forecast backhaul requirements using bandwidth driven by end users in Market 1*

- 5.147 In relation to the comments from TTG and one other respondent that utilisation will increase as capacity grows, we accept the basic argument that a higher utilisation is often experienced over higher bandwidth circuits. However, there are also two countervailing factors to be considered in this case. First, whilst average capacity per end user is growing, so that demand from each exchange is growing, the backhaul per DSLAM remains restricted to 155Mb/s. Further, through the use of ATM, BT configures connections with Virtual Paths (VP) and these may have additional limits on bandwidth (for example, a maximum capacity of 34Mb/s). The increased demand may therefore drive additional backhaul circuits but the potential to increase utilisation is limited as the backhaul links are separate 155Mb/s links. Second, the growth in traffic assumes that the average usage per end user in the peak period increases. This is likely to be driven by increased use of real-time services. The effect of this is that the potential to achieve stochastic gain may be reduced, as argued by BT.
- 5.148 We do not consider that the freeing up of capacity on 21CN or the migration to WBC would have an effect on utilisation since it is driven by the demand generated in Market 1, where 21CN is not available. However, we would note that in calculating this figure for BT's current network the migration to 21CN in Market 3 (and therefore the reduction in Market 3 generated traffic on backhaul links) has been factored into our calculation.
- 5.149 Therefore, we conclude that assuming that utilisation will remain broadly constant is reasonable.
- 5.150 We have reviewed BT's model on DSLAM and ATM network requirements and do not believe that our approach is in fact significantly different to BT's more detailed model.
- 5.151 To forecast the number of DSLAMs, BT suggests a more granular approach which takes into account the specific type of DSLAMs that are in each exchange and the prioritisation of backhaul traffic that is shared with another DSLAM (i.e. subtended). BT's modelling approach closely mirrors its current network status. As we discussed in the paragraph 5.92 to 5.106 above, our HON approach is based on the premise that, in the absence of 21CN, BT would have had to make certain investments/upgrades to its network. Having made such adjustments we move away from the state of BT's network and model it as an efficient network going forwards. As our adjustments associated with the HON approach allows for replacement of assets (i.e. DSLAMs and associated ATM network) that are almost or fully depreciated, we do not expect that the capacity restrictions highlighted by BT would exist under an efficient network.
- 5.152 Furthermore, we do not believe that the additional constraints highlighted by BT are significant enough to warrant a departure from our simplified model. We noted that when we replace the assumptions BT used in its model with the ones set out in the January Consultation, the difference in the number of DSLAMs was small.
- 5.153 In relation to the point raised by BT on the ATM model, Ofcom's approach, as set out in our January Consultation, is to model a hypothetical ongoing network that is efficient given the 20CN technology assumed. Following further discussion with BT, it is our understanding BT's argument that the Ofcom model underestimated ATM

backhaul demand was made due to a misinterpretation of data. Following clarification, BT's model and our model, whilst calculating resource requirements in a slightly different way, produce similar results. In the light of this, we do not comment further on BT's detailed comments.

- 5.154 We have considered BT's comments on the assumed timing of investment in capacity in the model. When modelling costs, we need to ensure that the capacity assumed to be in place is appropriate to the volume assumed in any year and that the costs incurred during the year to meet the increasing volumes can be recovered. If investment could be managed on a just-in-time basis, even if it had to be planned in advance, there would be no need for installed capacity to exceed demand at any time. There are three types of costs that stem from investment in capacity, and all three are calculated as annual figures:
- Depreciation, calculated as the capital costs of the additional capacity divided by asset life.
 - Return on the capital, calculated as the additional Net Replacement Cost (NRC) multiplied by WACC.
 - Operating costs, calculated as the previous year's operating costs multiplied by percentage increase in capacity and cost-volume elasticity.
- 5.155 Our modelling approach includes the full year's costs associated with the capacity used in that year. In order to address BT's points we recognise there are two possible approaches:
- Recognise that the asset count at the end of the year is determined using the year-end bandwidth, but make a downward adjustment to costs to reflect the fact that this capacity is not required for the full year; or
 - Assume that the investment occurs evenly throughout the year, such that the average costs for the year can be approximated using a mid-year capacity figure.
- 5.156 In our modelling, we have adopted the second approach for simplicity. This approach does not imply that we assume mid-year capacity needs to be able to support year end volumes. What we have assumed is consistent with the fact that the costs (i.e. depreciation, opex, return on capital) will be lower at the beginning of the year than at the end.
- 5.157 In terms of modelling options we could have:
- Used year-end bandwidth forecasts for capacity planning and mid-year values for revenues, but adjusted costs to reflect the fact that not all capacity is required at the beginning of the year.
 - Considered whether we take reasonable account of the need for planning and modularity ("lumpiness"). However, we note that this is not a cash flow model, so that the precise timing of the investment doesn't actually affect our cost stack. Instead, costs are only incurred when these assets are in service. On the other hand, even if bandwidth grows at a constant rate during the year, it may not necessarily imply that the number of DSLAMs and backhaul will also follow that profile.

- 5.158 However, we believe the most accurate and consistent method to use to ensure revenue and costs are appropriately matched is to use the mid-year bandwidth to trigger both the revenue forecast and the capital costs within our charge control model.
- 5.159 As discussed in Section 3, we propose to assume allocated bandwidth per end user of 48kbit/s in 2010/11 and reaching 111kbit/s in 2013/14, reflecting an annual growth of 30%. See Table 5.8.

Table 5.8 – Allocated bandwidth per end user forecasts

	2010/11	2011/12	2012/13	2013/14
Allocated bandwidth per end user	48kbit/s	65kbit/s	89kbit/s	111kbit/s

We forecast costs required using asset and cost volume elasticities

Our proposals

- 5.160 To forecast the additional costs required as a result of the growth in volumes described in the previous section we use asset volume elasticities (AVEs) for the capital costs and cost volume elasticities (CVEs) for the operating costs. As set out in paragraphs 5.84 to 5.86 and in A7.49 to A7.56 of the January Consultation, we described the values used in the RPI-X model. In our analysis we used AVE and CVE estimates produced for the 2004 PPC charge control statement to calculate the AVE and CVE for each cost component.
- 5.161 For some cost components we have adjusted their AVEs to 1. This change is made to reflect our approach to forecasting backhaul requirements. Rather than projecting volumes and associated costs at an aggregate level, for which the unadjusted AVEs could be appropriate, we model the demand for additional capacity at the exchange level. We assume that when capacity is exhausted at an exchange BT will add a DSLAM and a 155Mbit/s link, and this will require additional customer and network interface ports.¹¹⁸ These relationships are defined by the technical characteristics of the network and we assume they are fixed for the duration of the charge control. Table 5.9 lists the cost components that have an AVE of 1.

¹¹⁸ See Annex 7 of January Consultation for a full discussion of our approach to backhaul forecasting.

Table 5.9– Components with an AVE of 1

Component	Calculated AVE	New AVE
CO312 ATM customer interface > 155Mbit	0.63	1
CO313 ATM network interface	0.64	1
CO314 ATM network switching	0.64	1
CO316 Inter ATM transmissions	0.36	1
CO681 Broadband backhaul circuits	0.41	1
CR188 DSLAM (capital / maintenance)	0.26	1

5.162 The AVEs are applied to the gross replacement cost (these do not include any allocation of common and overhead costs, but does include installation costs) for every 1% change in the ATM, backhaul and DSLAM volumes required to meet end user demand, i.e. not applied to incremental costs.

5.163 In the January Consultation we asked the following question to respondents:

Question 5.9: Do respondents agree with our approach to AVEs and CVEs? If not, please explain why.

Consultation responses

5.164 Two respondents commented on our approach to AVEs and CVEs. TTG agreed with setting AVEs to 1 for the cost components identified in Table 5.6 above given the forecast/modelling method used.

5.165 BT did not agree entirely with our approach to AVEs and CVEs. It argued that the approach adopted for forecasting costs is dependent not only on AVEs and CVEs, but also on the underlying network infrastructure, particularly DSLAMs, Backhaul links and ATM assets needed to deliver growing volumes.

5.166 On our use of the AVEs, BT noted that these values were based on the notion that the “volumes” relate to the volume of services delivered over the physical infrastructure. These values suggest very substantial economies of scale, which may be appropriate when an existing platform can be used more intensively as volumes grow. It is possible that as more services are delivered over the same infrastructure, e.g. duct and fibre, that such economies of scale are achievable. However, BT noted that our use of the AVEs is based on the underlying physical volume of assets required to deliver the services.

5.167 For the cost components identified above, BT noted that Ofcom’s model of the DSLAM and backhaul circuits already reflects the effect of economies of scale within the asset volume forecasts, and therefore the use of 1 for the AVEs are appropriate.

5.168 However, BT believes that the CVEs applicable to the operating costs of these assets also need to be adjusted upwards to reflect the extent to which economies of

scale are already reflected in the physical volume forecast. BT proposed an approach to calculating the revised CVEs by multiplying the CVEs of 0.24 by the ratio of the new AVE to the old AVE to give adjusted CVEs between 0.38 to 0.92.

Our response

- 5.169 In response to BT's first point on the cost forecasting approach, we note that our forecasting approach does take into account the underlying network infrastructure. Indeed, Annex 7 of the January Consultation sets out our approach to calculating backhaul volumes. We then use these volumes to forecast the additional costs required. The service costs are then derived by multiplying these forecasts by usage factors.
- 5.170 We use AVEs and CVEs of less than one where we project costs based on aggregate volumes and this captures the effect of scale economies. Where we have used fixed technical relationships, the driver is the need for capacity at the exchange level so we have assumed AVEs of 1 for those cost components. This is consistent with BT's comment that our AVEs capture both the service volume growth as well as the fact that the DSLAM related backhaul circuits already reflect the economies of scale within the volume forecasts for these assets
- 5.171 We agree that the CVEs used in the model should be consistent with the AVE assumptions. For this reason, CVEs are not simply assumed as 0.24 across all cost components. Instead, we calculate them using the relative weighting of the AVEs for each individual cost component with respect to the total weighted average AVE across all cost components.
- 5.172 Finally, in accordance with the anchor pricing approach, cost changes (in response to increasing or decreasing market demand) are based on the costs of providing those services over the hypothetical ongoing network. We do not therefore seek to model any unit cost changes that could arise from demand migrating to a new platform (such as BT's 21CN).

We use the "Rest of BT" rate for the cost of capital assumption

Our proposals

- 5.173 In the January Consultation, we made proposals in relation to BT's cost of capital. For the purpose of the WBA charge control, we focused on the appropriate WACC rate for WBA services. Our proposed range for the pre-tax nominal WACC for the Rest of BT rate was 8.5% to 10.0%. In deciding which rate is appropriate for WBA services, we took into account the Competition Commission decision in the LLU Appeal Determination, WLR Appeal Determination and the LLU Appeal Determination.

Consultation responses

- 5.174 We received responses from TTG and Sky, which jointly commissioned a report from Europe Economics, and from BT, which commissioned a report from Oxera. We discussed the detail of their responses in Section 6.

Our responses

- 5.175 We continue to believe that the Rest of BT rate is the appropriate rate for the WBA charge control. Our final estimate of the cost of capital for the Rest of BT is 6.5%. We

have therefore applied the rate of 6.5% in calculation of the cost of the WBA service. Section 6 explains further how we have arrived at this figure and the reasons behind the changes.

We use 5-year average real asset price changes

Our proposals

5.176 Real asset price changes affect costs in two ways. Firstly, they affect the real value of capital employed and hence the level of profit needed to secure the required return on capital. Secondly, real asset price changes give rise to real holding gains and losses which are respectively treated as a reduction or increase in operating costs. The purpose of using the five-year average real price changes is to gain a good indication of the underlying trend, undistorted by the impact of one-off changes. For example, BT's 2009/10 regulatory financial statements includes CCA holding gains of £655m.¹¹⁹ BT calculates holding gains in relation to:

- Cost movements in the underlying assets experienced in the year. A real holding gain is the additional value that accrues to the asset holder as a result of an increase in its price relative to inflation. The reverse is true for holding losses.
- Other holding gains in the year. This is usually a one-off change to reflect, for example a change in the valuation methodology.

5.177 Our charge control methodology allows for the first effect and not the second. That is, we only take into account the effect of expect future cost input inflation. Furthermore, we re-calculate the effect the cost element by using the historic five-year average in the trend of real asset price changes as a proxy for future asset price changes.

Consultation responses

5.178 BT was the only respondent who commented on this and noted that Ofcom's model was not fully internally consistent in that it used the nominal asset price change instead of the real price change in the calculations. BT also considered that Ofcom had used an asset price change for the DSLAM assets that was inappropriate as it suggested that the price of DSLAM equipment is increasing in nominal terms, whereas the experience over the past four years is for a small decline in nominal prices. This was caused by the use of the cable asset price trend, which is dominated by the price of copper cable. BT suggested that a more disaggregated approach should be adopted in this case.

Our response

5.179 As set out at the beginning of this Section, our revised base case scenario uses the real asset price changes rather than the nominal price changes in the January Consultation. The effect of this change on the price trend on DSLAM equipment is a small real reduction, consistent with BT's views. However, we do not believe we should apply a different methodology for DSLAMs compared to the other asset types. In any case, BT has not provided further details on how a more disaggregated approach would be carried out.

¹¹⁹Page 24 of the 2009/10 regulatory financial statements.

We assume operating cost efficiency improvement of 3.5% per annum

Our proposals

- 5.180 We set out our proposals for the efficiency assumption in Paragraphs 5.94 to 5.108 as well as A7.34 to A7.48 of the January Consultation. We incorporate some underlying efficiency assumptions in our cost forecasting to take into account a level of efficiency improvement that we would expect BT to make over the charge control period. We distinguish between two types of efficiency improvements:
- The “catch-up” factor which measures the amount by which BT would need to reduce costs to be as efficient as the benchmark operator. We assumed this to be 0%, and
 - The “frontier shift” which is the rate at which an efficient company would be expected to reduce its real unit costs over time due to technical progress and productivity improvements. We assumed this to be between 2% and 5% per annum.
- 5.181 On the catch-up factor, we have previously commissioned research¹²⁰ into BT’s overall efficiency on a network basis and how that compared against the US Local Exchange Carriers (LECs). The approach adopted in the research provided an indication of the relative performance of BT and estimated the scale of improvement, if any, required for BT to become as efficient as the benchmark operator. A further study¹²¹ was commissioned in response to the one submitted by BT.¹²²Ofcom assessed all the studies and for the 2009 Leased Lines Charge Control (‘the 2009 LLCC’)¹²³we assumed a catch-up factor of 0% for the purposes of forecasting BT’s costs.
- 5.182 The data for all studies mentioned above covered data from 1996 to 2006, with 2007 being the latest data available for all LECs as a result of a change in the Federal Communications Commission (FCC)¹²⁴ reporting requirements. We did not commission a new study for the purposes of this charge control as we did not believe that an additional year’s data would give us significantly different results than one obtained previously.
- 5.183 BT, on the other hand, produced an updated report and the results showed that BT was still above the decile. A comparison of this and the previous report gave some indication that BT’s position relative to the benchmark level of efficiency has not changed markedly. As such we continued to assume a catch-up efficiency factor of 0% for the purposes of this charge control.
- 5.184 The second part of the efficiency assumption relates to the ongoing improvements that we expect BT to achieve. In line with our anchor pricing approach, this is based on the likely efficiency improvements of BT’s continuing hypothetical network. Again, based on the studies Ofcom and BT have commissioned, the results

¹²⁰NERA, 17 March 2008, “The comparative efficiency of BT Openreach.”

<http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/annexes/efficiency.pdf>. This work was carried out as part of the 2009 Leased Lines Charge Control (the 2009 LLCC).

¹²¹See Annex 7 of the 2009 Leased Lines Charge Control Statement.

<http://stakeholders.ofcom.org.uk/consultations/llcc/statement/>

¹²²NERA, 6 May 2008 “Comments on the Deloitte paper on “the efficiency of BT’s network operations”” <http://stakeholders.ofcom.org.uk/binaries/consultations/llcc/annexes/operations.pdf>

¹²³<http://stakeholders.ofcom.org.uk/consultations/llcc/statement/>

¹²⁴<http://www.fcc.gov/wcb/armis/>

suggested that the likely lower bound of efficiency improvement was around 2% per annum, with a base case of 2.5%. We also proposed an upper bound of 5% to allow for potentially higher efficiency savings by BT.

5.185 In the January Consultation we asked the following question:

Question 5.10: Do you agree with our central estimate of 2.5% for efficiency improvements? If not, please explain why.

Consultation responses

5.186 BT agreed with Ofcom's assessment that there is no need to include a "catch-up" efficiency component, as BT has been shown to have an efficiency in excess of the benchmark level. It also said that it had been given no credit for its superior efficiency performance. BT suggested that this could be incorporated by including a "negative" catch-up factor to ensure that it has incentives for further efficiency gains.

5.187 On the frontier shift, BT disagreed with our efficiency estimate of 2.5%, arguing that on the available evidence it was too high as a central estimate. BT referred back to the Deloitte 'WBA Consultation Response' final report,¹²⁵ which suggested a range of 0.6% to 2.8% per annum, with a central estimate of 1.7%.

5.188 Conversely, C&WW believes that the estimate of 2.5% was overly conservative. It suggested that selection of this measure relied on data used in other recent charge controls, most notably the 2009 LLCC. It argued that as this charge control will be the first applied in the WBA market efficiency gains might be expected to be higher than for services with a long history of charge controls. C&WW suggested that it would be more appropriate to take account of efficiency data from newly regulated services rather than services with a previous history of charge controls. C&WW also noted that in the NTS retail uplift and PRS bad debt consultation the evidence for retailing of geographic calls was between 4.5% and 9% per year.

Our response

5.189 As in previous charge controls where we have assumed BT's relative performance to be above the decile, we have applied a catch-up efficiency of 0%. Our view is that although BT is ahead of the decile we do not make an allowance for a negative "catch-up" factor. This is because the purpose of basing the benchmark on the top decile of LECs (rather than the top-performing LEC) is to allow for the possibility of data error, rather than to generate a precise estimate of the efficient level of costs. The decile is used so that we can be certain that we are comparing against an achievable level of efficiency. Furthermore, we note that this does not preclude BT from achieving further efficiency improvements. Indeed, the comparison we have made is against the US LECs, who are themselves regional monopolies. As such, we believe there is likely to be some scope for further efficiency savings, given that the LECs themselves may not be fully efficient due to the limited competition they face.

5.190 On the frontier shift, BT has submitted an updated version of Deloitte's report¹²⁶ in response to the issues we highlighted in Paragraphs 5.106 to 5.107 of the January

¹²⁵ <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/BT2.pdf>

¹²⁶ Ibid

Consultation. Deloitte highlighted three areas of disagreement with Ofcom's approach:

- The interpretation of Deloitte's stochastic frontier analysis (SFA) results, which suggested a frontier shift of between 0.6% to 1.0%;
- Rate of unit cost reduction used in the 2009 LLCC; and
- Use of prior year weighting for Tornqvist index in calculating the total factor productivity (TFP) trend.

5.191 Firstly, whilst we accept that Deloitte's preferred results (in its previous study) suggested a range of 0.6% to 1.0%, we note that our preferred SFA results used in the 2009 LLCC were based on the study Ofcom commissioned, i.e. between 2.5% to 3.0%. The equivalent result obtained from Deloitte was 2.2%.¹²⁷

5.192 Secondly, Deloitte argued that distance-related components should have been included in the analysis of the real unit cost reductions. The 2009 LLCC Statement clearly reasoned that the exclusion was due to a change in BT's methodology for defining trunk and terminating volumes. As such the unit costs could not be compared on a consistent basis. In addition we noted that the majority of the operating costs considered were included in our analysis.

5.193 Finally, Deloitte's results showed that the estimated time trend (a proxy for the frontier shift efficiency) is around 2.8% based on their preferred fixed effects equations when the Tornqvist index is specified using prior year weights. This compares against previous estimate of 2.4%. We continue to believe that the use of the prior year weights is appropriate, particularly as they are adopted in the UK.¹²⁸

5.194 Deloitte states that "*we maintain that Ofcom should use the TFP analysis to inform the WBA price control*" (page 7). The results of Deloitte's latest TFP analysis are shown in Table 2 on page 9 of their annex to BT's submission. Using the "Ofcom preferred" specification, the TFP time trend varies between 2.60% and 3.50% depending on the estimation procedure. This suggests that our base case of 2.5% may have been overly conservative, and that a rate of 3% or more may be reasonable.

5.195 We have therefore sought to inform our choice of assumption using evidence from other sources. Using evidence from a wide range of sources has the benefit of avoiding over-reliance on limited evidence and is an approach we have adopted in our consultation on the WLR/LLU charge control, published on 31 March 2011.¹²⁹ Figure 7.1 of that document summarises the various sources of evidence we propose to take into account in reaching a decision on the potential for efficiency gains in the provision of WLR and LLU services. Based on this evidence we proposed that a net efficiency target between 3.5% and 5.5% per annum (on all costs) would be reasonable, with a central case of 4.5%.

¹²⁷ See Paragraphs A7.98 to A7.100 of Annex 7 of the 2009 LLCC Statement for a detailed evaluation of the efficiency estimates. <http://stakeholders.ofcom.org.uk/consultations/llcc/statement/>

¹²⁸ For example see the Office of National Statistics paper on growth accounting and estimating total factor productivity. http://www.statistics.gov.uk/articles/nojournal/paper_5_TFP.pdf

¹²⁹ See Annex 7 at <http://stakeholders.ofcom.org.uk/binaries/consultations/wlr-cc-2011/annexes/wlr-cc-annexes.pdf>

- 5.196 We are not able to assemble such a range of evidence in the case of WBA. However, we have asked BT to provide details of efficiency targets relevant to WBA from its Medium Term Plan, as we did for the WLR and LLU charge controls. The BT Medium Term Plan (“MTP”) is an internal document used for planning purposes within BT. It sets out the financial outlook for BT for the next three years. The BT Wholesale Medium Term Plan forecasts the revenue, gross margin and SG&A¹³⁰ costs of the BT Wholesale Line of Business, which includes the supply of WBA. However, BT told us that it did not make an explicit efficiency forecast for BT Wholesale Costs. Rather it had specific targets only for SG&A costs, which represent only a small part of BT Wholesale costs and of the costs of WBA provision in our model. In addition, BT forecasts the “BT Operate Fixed Charge”, which includes the pay and other operating costs associated with maintaining the ATM network, which are the most significant costs in our model. In order to identify the underlying rate of efficiency gain implicit in BT’s figures, we compared the reductions in SG&A costs and the BT Operate Fixed Charge which BT has reflected in the MTP with our own calculation of the trend which we would expect these costs to follow given BT’s WBA volume forecasts in the MTP. Whilst the results must be treated with some caution, they suggest that an underlying rate of efficiency gain of between about 3.5% and 4% per annum is likely to be consistent with BT’s MTP.
- 5.197 Finally we have considered the evidence set out in the WLR/LLU charge control consultation, where we have somewhat greater visibility of costs. Whilst this evidence is not directly applicable to the WBA charge control, we have considered whether it is reasonable to expect significantly larger efficiency gains in the provision of WLR and LLU than in the provision of WBA (the base case assumptions for consultation are 4.5% and 2.5% respectively). On the one hand, BT’s SMP in the wholesale local access market is deeply entrenched whereas, at least outside Market 1, BT faces some competition in WBA provision. If Openreach faces less pressure to be efficient as a result, then this may be one reason why it is reasonable to expect greater scope to make efficiency gains by eliminating existing inefficiencies through a charge control. In addition, as noted earlier, some of the apparent inefficiencies in BT’s WBA network architecture have not been reflected in our base year cost data for WBA. On the other hand, the nature of the activities might suggest that there could be rather greater scope for cost reductions through technical progress in core network activities such as WBA provision.
- 5.198 It is also relevant that we have used the anchor pricing approach to set the WBA charge control. By basing the control on the costs of 20CN technology rather than the 21CN technology which might be adopted during the charge control period, we allow BT to benefit from increased profits if it is able to lower costs by investing in new technology. But as noted earlier, we do not have to allow BT to keep *all* of the benefit: we can share some of this “technology dividend” with customers through the charge control. A somewhat higher assumed rate of efficiency gain could mean that some of this dividend is passed to customers sooner than would otherwise be the case, whilst still leaving sufficient of the gains with BT to provide an appropriate level of incentive.
- 5.199 In addition, C&WW has argued that we should expect greater gains from WBA as this has not been subject to a charge control before. We do not think this is a strong argument however, since the fact that the WBA market was previously not subject to price controls means that BT will have been able to retain the benefits of any efficiency gains and this will have given it some incentive to make them. On

¹³⁰ Selling, General & Administrative expenses

balance we think it is reasonable for the Openreach target to be somewhat higher, if this is supported by the other available evidence.

5.200 Taking all these factors into account we think a rate of efficiency gain of 3.5% for WBA is the most reasonable assumption. This is:

- Consistent with the range suggested by the statistical analysis carried out by BT's own expert advisers, and at the upper end of this range;
- Consistent with BT's MTP, as far as we are able to judge; and
- At an appropriate level relative to the range of efficiency gains proposed for the WLR and LLU charge controls.

5.201 We disagree with C&WW's representation of the position in the NTS retail uplift consultation where we noted there that the figures presented by C&W were likely to be a reflection of the reallocation of costs to other retail services which are growing relatively quickly, rather than a reduction in overall costs. The base case efficiency assumption used in the NTS retail uplift charge control consultation was in fact also 2.5%, the same as the one adopted in the January Consultation.

Step 3 - Conclusions

5.202 Based on the reasoning set out above, we conclude that:

- WBA volumes in Market 1 will reduce by 0.7% per annum based on the combination of an underlying market growth of [x]%, offset against migration of TTG's customers to its LLU network at [x]% per annum;
- AVEs and CVEs as set out in the January Consultation;
- Cost of capital for rest of BT rate of 9.7%; and
- A rate of efficiency gain on operating costs of 3.5% per annum.

Step 4: Consider one-off adjustments to start charges

One-off adjustments to start charges

Our proposal

5.203 In our January Consultation (Paragraphs 5.109 to 5.127), we did not propose to make one-off cuts to WBA charges in Market 1. In order to form a view on this, we took into account the benefits of the glide paths versus the one-off adjustments to charges. Specifically, the glidepath approach:

- Approximates more closely to the workings of a competitive market where excess profits are gradually eroded as rivals improve their own efficiency.
- 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 in the telecoms market. This is particularly important for telecoms as there are now many players besides BT.

- Where a charge control is already in place, it 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.
- 5.204 We also recognised that whilst the charge control incentive arguments are of less relevance to the WBA charge control, the potential impacts of one-off charge changes on regulatory certainty and stability may be more so. CPs have made investment decisions regarding their presence in Market 1 areas, the location of their interconnection with BT's network and therefore the type of WBA services purchased. Unanticipated one-off changes to WBA charges could make some of these investments appear to be "the wrong choice" and would not necessarily best reflect outcomes likely in competitive markets (whereby surplus profits are gradually eroded).
- 5.205 In the January Consultation, we asked BT to provide the data necessary to compare BT's WBA charges with the relevant DSACs in order to identify any possible need for one-off reductions. However, BT was unable to provide the relevant information on DSAC at the time of our January Consultation. In the absence of DSAC data we considered the level of BT's WBA prices relative to FAC and BT's rate of return (ROCE) on WBA services on an FAC basis. For a given service, DSAC will almost always be significantly above FAC, often between 50% above and double the FAC figure. To make a strong case for a one-off cut on the basis of FAC data, a price significantly above FAC is therefore likely to be required.
- 5.206 A snapshot of one year's ROCE would therefore not be a very good indicator of whether prices were excessive. If there was evidence that rates of return were persistently high over time, this could suggest that some one-off adjustment to prices might be appropriate. However, our analysis suggested that, at a national level, accounting ROCE has fallen since 2008/09. Therefore, based on the level of BT's WBA prices relative to FAC and BT's rate of return (ROCE) on WBA services on an FAC basis we did not propose to make one-off cuts to WBA charges in Market 1.
- 5.207 In the January Consultation we asked the following question:

Question 5.11: Do you agree with our proposal not to make one off adjustments to WBA prices at the start of the control? If not, please explain why.

Consultation responses

- 5.208 BT agreed with our proposal in the January Consultation not to make one off adjustments to WBA prices at the start of the control. BT noted that the glide path approach ensures that the remedies are "incentive compatible" and leads to a more stable and predictable background against which investment and other commercial decisions can be made. BT also noted that Ofcom has in past rejected the use of one-off price increases e.g. in the Network Charge Control (NCC):

"In previous price caps and NCCs Ofcom has favoured glide paths to align charges to the target efficient unit costs at the end of the control period and we do not believe it is appropriate to create an asymmetric framework for regulation by applying one-off adjustments in this case. This would not be consistent treatment of

charge controls. We are, under section 3(3), required to have regard to the principle of consistency in performing our duties.¹³¹

- 5.209 BT noted that it would create regulatory uncertainty to apply an asymmetric approach to one-off price falls compared with price increases, given that Ofcom has previously rejected this approach.
- 5.210 BT also argued that regulation is contingent and censors upside returns where only successful products and services get charge controlled. This caps upside gains from any investment, but does not limit the downside exposure if the investment is unsuccessful. BT noted that Ofcom is evaluating ex post returns for a successful project, where BT would expect that the rate of return would be higher than the cost of capital. BT believes that a one-off price cut would reduce these returns at a crucial time when investment in new services or upgrade of existing ones is being considered.
- 5.211 BT submitted a confidential annex showing that the prices for IPS Connect are within the benchmarks of DSAC and DLRIC.
- 5.212 In its response, C&WW argued that Ofcom did not provide sufficient data to enable C&WW to take a view on this question. The only data provided in the consultation provided a ROCE figure for the entire WBA Market 1 showing a return of 25%. C&WW suggested that these returns are higher than what would be expected, but agreed that this does not demonstrate whether or not a particular charge is too high in relation to costs
- 5.213 Another respondent notes that in proposing the level and form of the charge controls, Ofcom has not undertaken any cost orientation tests. It believes that this is a serious omission. In reaching a decision not to make one off adjustments to WBA prices at the start of the control, Ofcom has not, in particular, performed an assessment of whether charges are between the DLRIC-DSAC boundaries to ascertain whether any such reductions are required in order to bring charges in line with their costs. It argues that, in this instance, given that charge controls are being applied to hitherto uncontrolled products, such an assessment is vital. The respondent believes that the analysis carried out in the January Consultation is not sufficient and noted that we recognised that the approach in the January Consultation was not a particularly effective or reliable indicator of excessive prices.
- 5.214 While the respondent did not want to delay application of the charge control, it suggested that this test needed to be undertaken, and therefore argued that Ofcom should seek to require BT to provide the necessary information to enable Ofcom to perform the necessary tests and revise the controls as appropriate.
- 5.215 Finally, in its response (to Question 3.3) Sky commented that:
- “If prices would need to fall by the amounts indicated by the MEA approach then there is a very strong case for immediate one-off price reductions at the start of the charge control period”.

¹³¹ See paragraph 4.107 “review of BT’s Network Charge Controls: Statement”, Ofcom, 15 September 2009.

Our response

- 5.216 In response to C&WW's point regarding the lack of appropriate information, we acknowledged in the January Consultation that we did not have all the information we would have liked in order to assess the case for one-off adjustments. In particular, at the time of publication, BT had not been able to provide estimates of DSAC. We therefore said that we had considered prices relative to FAC and BT's rate of return on an FAC basis. We did not however base our conclusions solely on the 25% figure which appears in Table 5.6 of the January Consultation.
- 5.217 We agree with C&WW that a single year's ROCE figure, by itself, would not permit a good assessment of the case for one-off adjustments. One reason for this is that relatively high returns (measured on an annual ROCE basis) in later years might be justified in order to offset earlier losses if the investment is to provide an adequate return over its lifetime.
- 5.218 In addition, it may be necessary to allow successful investments to earn outturn returns above the cost of capital if, on a prospective basis, investments are to provide an expected return equivalent to a "fair bet" (see the discussion of BT's response above). We therefore looked at the trend in BT's ROCE over the period from 2003/04 onwards, which showed losses at first giving way to profits in later years. The evidence available to us also suggested that BT's rate of return had fallen since 2008/09. It was this longer-term evidence, rather than simply the single year's ROCE figure, which persuaded us that BT's ROCE and prices were not clearly excessive and hence not to propose any one-off adjustments.
- 5.219 Sky's view of the case for one-off adjustments is dependent on its proposal that we should bring charges into line with the costs of 21CN technology (the "MEA approach") rather than setting the control using the anchor pricing approach as we propose. We respond to Sky's arguments that we should use the MEA approach in Section 3, where we discuss respondents' views on the anchor pricing proposal.
- 5.220 If we were to adopt an MEA approach and this resulted in a tougher control than the one we propose, then the case for some one-off reductions could also be stronger, as Sky suggests. However, it does not follow that we would necessarily require one-off cuts at the start of the control even then, since we do not usually do so simply on the basis that "the glide path is too steep". One reason why that approach might be inappropriate for the WBA charge control is that the value of X to a large extent reflects the assumption of high rates of growth in usage, which lead to significant reductions in unit costs over the period of the control, rather than prices which are initially excessive.
- 5.221 Our usual approach is to require one-off reductions only where charges are above DSAC, or risk creating distortions for other reasons. The size of the 17% reduction in 1Gbit/s BES charges at the start of the current leased line charge control, which Sky refers to, was calculated by comparing prices to DSAC.¹³² As noted above, the Competition Commission agreed with the use of DSAC to identify charges which should be subject to one-off reductions, in its judgment of the LL Appeal. We do not know what the DSACs of WBA services would be on an MEA basis, but as we note above, we do not propose to set the control using MEA costs.

¹³² See "Leased lines charge control", statement, 2 July 2009, paragraph 5.90 at <http://stakeholders.ofcom.org.uk/binaries/consultations/lcc/statement/lccstatement.pdf>

- 5.222 In response to the cost orientation tests raised by one respondent, we think it is important to distinguish between a formal test of compliance with a cost orientation obligation and the use of DSAC to identify charges which should be subject to one-off adjustments at the start of a charge control. The former is out of scope of the charge control review. We explained this in the January Consultation and it is set out again above. We also explained that we had asked BT to provide the data necessary to compare BT's WBA charges with the relevant DSACs in order to identify any possible need for one-off reductions.
- 5.223 Cost orientation and cost accounting obligations were imposed on BT in Markets 1 and Market 2 by our 2010 WBA Statement. BT's compliance with its cost orientation obligations going forward is outside the scope of the WBA charge control review. However, it is clear that the onus to show that its charges comply with those obligations rests with BT. This has recently been confirmed by the CAT in its judgment of BT's appeal of Ofcom's decision in the PPC dispute.¹³³ The CAT also upheld the use of DSAC in the assessment of cost orientation.
- 5.224 As noted above, we asked BT to calculate the DSACs of WBA services in Market 1 to inform our analysis of the need for one-off adjustments, consistent with the approach we had taken in the 2009 LLCC review. BT has provided confidential data in its response for the financial year 2010/2011 consisting of 9 months of actual data and 3 months of forecast data which shows that its WBA charges were below the relevant DSACs in this period. BT has produced this information specifically for the purposes of this consultation. We have since confirmed with BT that the methodology for calculating this DSAC data is consistent with the methodology used to produce the DSAC data for other services in the regulated financial statements and that this DSAC data reconciles to the same cost total. This is an important check on the reasonableness of BT's WBA charges in the context of its other charges and overall cost recovery. BT has also answered some detailed questions which we have put to it regarding consistency of the data with its FAC figures.
- 5.225 Although the DSAC data provided by BT includes 3 months of forecast data and does not consist of a full year of actual data, we have no reason to believe the full year of actual data will be materially different. However if we were investigating a possible breach of cost orientation we would normally consider actual data relating to the length of time for which charges had exceeded DSAC, amongst other things.
- 5.226 The conclusions of our DSAC analysis are consistent with those of our analysis based on BT's rate of return described in the consultative document. Therefore, as BT's charges appear to be below DSAC, and in the light of the results of the earlier analysis, we do not propose to require any one-off adjustments to WBA charges.
- 5.227 Although BT agreed with our proposal not to make one-off adjustments, we are not convinced that, in this case, one-off charge reductions would necessarily harm incentives to invest. BT appears to be suggesting that, if we made one-off reductions, this could mean that its investment in broadband would not have been a "fair bet". We explained the concept of the "fair bet" and its relevance to WBA charges in Annex 8 of the January Consultation. In paragraph A8.27 we said:

"An investment is a "fair bet" if, at the time of investment, expected return is equal to the cost of capital. This means that, in order to ensure that an investment is a fair bet, the firm should be allowed to

¹³³ Case No.1146/3/3/09. Judgment of 22 March 2011.

enjoy some of the upside risk when demand turns out to be high (i.e. allow returns higher than the cost of capital) to balance the fact that the firm will earn returns below the cost of capital if demand turns out to be low.”

5.228 We agree that, if the firm expects the regulator to reduce (or “censor”) the returns on successful investments to the point where future investments no longer appear to represent a fair bet, investment incentives will be harmed. But we do not think that this is likely to be the case here. In the 2010 WBA First Consultation we said that BT’s:

“losses when WBA volumes were relatively small and the market was at an early stage of development have now been recovered by later profits”.¹³⁴

5.229 And in paragraph A8.31 of the January Consultation we noted that:

“from the time when BT first started to deploy WBA in 1999/2000 to date, BT’s charges have been subject only to a ceiling which has allowed BT to enjoy some of the upside risk, consistent with the fair bet approach. BT has therefore now had a large degree of pricing freedom over quite an extended period. It is also relevant that...the riskiness of successive tranches of investment in successful projects will decline over time, as does the required rate of return.”

5.230 We also noted that BT had been able to take steps to reduce the riskiness of its investments in broadband, particularly in Market 1. We therefore concluded that the proposed charge control would not harm investment incentives.

5.231 In the light of this, we do not think this conclusion would change even if we were to make some modest one-off reductions to charges at the start of the control. The rate of return on BT’s investments in broadband over their lifetime would be unlikely to change materially as a result of the bringing forward of price reductions which would happen anyway, but somewhat later, under the glide path approach.

5.232 In any case, we do not propose to make one-off reductions and so we do not have to reach a firm view on their possible effect on BT’s returns and incentives in this case.

Step 4 - Conclusions

5.233 Based on the reasoning set out above, we conclude that:

- We are not making one-off adjustments to WBA charges in Market 1

¹³⁴ See “Review of the wholesale broadband access markets”, first consultative document, 23 March 2010, paragraph 4.35 at <http://stakeholders.ofcom.org.uk/binaries/consultations/wba/summary/wbacondoc.pdf>

Step 5: Calculate the value of X for the proposed basket of services

Our final value of X is 12.00%

- 5.234 The base case we presented in the January Consultation was 12.75%. We made three corrections to the model, which resulted in a revised base case of 12.25%.
- 5.235 Summarising the issues covered in this section so far, we note that our final value of X is 12.00%. Table 5.10 below summarises the assumptions used to generate this result.

Table 5.10 – Assumptions used to determine final value of X

Assumption	Base case value
Allocated bandwidth	48 kbit/s in 2010/11, growth rate of 30% per annum
Real asset prices	5 year historical average between 2005/06 and 2009/10*
AVE/CVE values	2004 PPC values, with some adjustments to backhaul-related components
Base year cost adjustments	Applied
Capacity overhead assumption	94%
Efficiency	0% Capex, 3.5% Opex
End user volume growth in Market 1	-0.7% per annum
Inflation	Based on independent forecasts
NRC/GRC adjustment	Applied for DSLAM, ATM and backhaul assets
WACC (per-nominal tax)	9.7%

* For cable and duct the five year average from 2004/05 – 2008/09 is used due to discrepancies in the 2009/10 data

Section 6

Cost of capital

Introduction

6.1 In our January Consultation, we set out our proposed ranges for the cost of capital for BT Group, Openreach and the Rest of BT.

6.2 We set out our proposed range in Table 6.1.

Table 6.1 – January Consultation pre-tax nominal cost of capital estimates

<i>Pre-tax nominal WACC</i>	<i>Openreach</i>	<i>BT Group</i>	<i>Rest of BT</i>
May 2009	10.1%	10.6%	11.0%
Jan 2011 (mid-point)	8.6%	8.9%	9.3%
Jan 2011 (range)	7.9% - 9.4%	8.2% - 9.7%	8.5% - 10.0%

6.3 These estimates equated to the pre-tax real values shown in Table 6.2, based on our assumed inflation rate of 2.5%.

Table 6.2 - January Consultation pre-tax real cost of capital estimates

<i>Pre-tax real WACC</i>	<i>Openreach</i>	<i>BT Group</i>	<i>Rest of BT</i>
May 2009	7.4%	7.9%	8.3%
Jan 2011 (mid-point)	6.0%	6.3%	6.6%
Jan 2011 (range)	5.3% - 6.7%	5.6% - 7.0%	5.9% - 7.3%

6.4 Our January Consultation proposal for the cost of capital for BT Group reflected a marked reduction in the cost of capital from May 2009. This was due to:

- Macroeconomic changes (lower interest rates, reduced corporate taxes); and
- BT specific changes (an apparent reduction in the perceived risk of BT's business when compared to the equity market in general).

6.5 However, the relativity of the Openreach and Rest of BT cost of capital estimates remained broadly similar with respect to one another, and to our estimate for the BT Group.

6.6 In this section, we set out our methodology and our estimates of the 'Rest of BT' Weighted Average Cost of Capital (WACC) that we have adopted in reaching our decision on the WBA charge control. We also show estimates of the WACC for Openreach and the BT Group.

- 6.7 The cost of capital estimates for BT which are cited below have been calculated for the purposes of the WBA charge control which will apply to 2013/14. However, we intend to apply these rates to other relevant charge controls. In the case of the forthcoming WLR/LLU charge controls, for example, we note that the charge control statement is likely to be published towards the end of 2011.
- 6.8 We intend to apply the cost of capital estimates shown below to the relevant charge controls. However, we will review the evidence on the individual parameters at the time of the publication of these charge controls to ensure that the estimates remain relevant. If the evidence suggests that these cost of capital estimates are no longer appropriate, we will update the estimates. However, in deciding whether an update is necessary, we will have regard to the importance of maintaining a consistent approach.
- 6.9 Our final estimates of the cost of capital for BT Group, Openreach and the Rest of BT are shown in Table 6.3.

Table 6.3 - BT Cost of capital July 2011

	Openreach	BT Group	Rest of BT
Real risk-free rate	1.4%	1.4%	1.4%
Inflation	3%	3%	3%
Nominal risk-free rate	4.4%	4.4%	4.4%
Equity beta	0.67 – 0.94	0.77 – 1.04	0.87 – 1.14
Asset beta	0.41 – 0.55	0.46 – 0.59	0.51 – 0.65
ERP	5%	5%	5%
Gearing	50%	50%	50%
Debt premium	2%	2 – 2.5%	2.5%
Debt beta	0.15	0.15	0.15
Tax rate	24%	24%	24%
Pre-tax real WACC	5.6%	6.1%	6.5%
Pre-tax nominal WACC	8.8%	9.2%	9.7%

- 6.10 In reaching these estimates, we have considered the January Consultation responses received from TTG and Sky, which jointly commissioned a report from Europe Economics (EE), and from BT, which commissioned a report from Oxera. We have also considered updated data in respect of some parameters.
- 6.11 In the paragraphs below, we explain how we have estimated the values shown above, based on responses received to our January Consultation, and the latest available evidence.

- 6.12 There are a number of areas where respondents have raised points which require us to exercise our judgement in making estimates. In these areas, we have been particularly mindful of the views of the Competition Commission on the mechanics of the Capital Asset Pricing Model (CAPM). In its determination in August 2010 of the LLU Appeal by Carphone Warehouse ('the LLU Appeal Determination'), the Competition Commission noted:

“the inherent imprecision of the calculation of the WACC, particularly where the cost of equity is a substantial part of the WACC.”¹³⁵

- 6.13 This inherent imprecision highlights the difficulty of our task in setting a point estimate of the cost of capital. For this reason, we tend to adopt a high evidence threshold when considering changes to our methodology.

Methodology

How we estimate the cost of capital

Our consultation proposals

- 6.14 In our January Consultation, we explained that we have an established method for estimating the cost of capital. We stated that our method closely reflects that adopted by other UK regulators.
- 6.15 We noted that estimating the cost of capital following the recent period of unusual capital market instability has been difficult; however, we considered that our methodology remained appropriate. We proposed to use the same framework to estimate the cost of capital as we have done in the recent past.
- 6.16 When we refer to the cost of capital, we mean the rate of return required by investors that a firm must generate in order to raise money in the capital markets. We usually mean a weighted average cost of capital (WACC).
- 6.17 The model we have consistently used for estimating the cost of capital is the Capital Asset Pricing Model (CAPM), the preferred model of the Competition Commission and other UK regulators.
- 6.18 In its simplest form, the weighted average cost of capital for a firm is derived as follows:

$$\text{WACC} = K_e * (1 - g) + K_d * g, \text{ where}$$

1. K_e = the cost of equity, which is given by reference to the risk-free rate (r_f), the expected return on a basket of equities (the equity risk premium, or
2. K_d = the cost of debt, which is given by reference to the risk-free rate and the debt premium of the firm, d_p , such that $K_d = r_f + d_p$
3. g = gearing, which is defined as net debt divided by enterprise value. Enterprise value is defined as net debt plus market capitalisation.

¹³⁵ Competition Commission determination: The Carphone Warehouse Group plcvvs Office of Communications, August 2010, cases 1111/3/3/09. See http://www.competition-commission.org.uk/appeals/communications_act/llu_determination.pdf §2.406

- 6.19 In addition to the equations set out above, which are a simplified version of our CAPM calculations, we need to take into account the relative tax treatment of debt and equity, and define a WACC that can be applied at a pre-tax level.
- 6.20 When we set charge controls for BT Group, we estimate the return that investors require on their invested capital by multiplying the estimated cost of capital (as set out by the CAPM calculations above) by the asset base.
- 6.21 In this charge control, we are estimating the cost of capital for a charge control period running until March 2014. The methodology that we use to calculate such charge controls typically means that we estimate the efficiently incurred costs in the final year of the control, and then calculate a glidepath towards that level of costs in the first and second years of the control. This is the basis of our estimate of the cost of capital.
- 6.22 Finally, we proposed to estimate and apply different costs of capital for different parts of BT Group (Openreach and the Rest of BT), on the grounds that they have different systematic risk profiles. In order to do this, we proposed to consider the BT Group asset beta as well as a range of utility asset betas. This is because we assumed that Openreach has some utility-like characteristics and therefore has less systematic risk than BT Group, but more than a pure utility.
- 6.23 This approach remains the same as that adopted in previous updates of our cost of capital estimates, including the update published in May 2009 as part of the Openreach Financial Framework Review.¹³⁶
- 6.24 In this section, we first explain how we calculate the BT Group WACC, describing the approach used in assessing each parameter. Having calculated a BT Group cost of capital, we then explain how we arrive at a separate WACC for Openreach, and the Rest of BT.

Key parameter values

Real risk-free rate

Our consultation proposal

- 6.25 The risk-free rate is an important parameter in calculating the WACC as it affects both the cost of debt and the cost of equity. Although our approach to estimating the risk-free rate is based on analysis of historic and current data, we noted that it needs to be relevant for the period of the charge control i.e. 2013/14.
- 6.26 We proposed a real-risk free rate of 1.5% in our January Consultation based on the evidence available at the time of the consultation. We noted that the estimate of 1.5% was above the real risk-free rates which prevailed, and above the implied forward real gilt yield for 2014. However, we considered it was appropriate for the following reasons:
- The 5 year and 10 year average yields on 5 year gilts of around 1.5% (1.4% and 1.7% respectively).
 - The Competition Commission's range of 1% - 2% in the Bristol Water appeal,¹³⁷ despite the low rates observed in the market at the time of that decision.

¹³⁶ <http://stakeholders.ofcom.org.uk/consultations/openreachframework/statement/>

- We were mindful of the potential negative effects of placing too much weight on current evidence of risk free rates, and making sudden changes which could create regulatory uncertainty, particularly at a time when current low rates may have been distorted by specific, temporary factors such as quantitative easing.

6.27 In the past we have tended to rely on UK 5 year gilts. In addition, and consistent with the approach taken by the Competition Commission, we also considered UK 10 year gilts.

Consultation responses

- 6.28 TTG, Sky and BT all agreed with our approach which avoids giving too much weight to the most recent data. They agree that current risk free rates reflect unusual recent market activity therefore support us giving weight to a wider range of data.
- 6.29 BT raises concerns in its consultation response that a point estimate of 1.5% would not allow sufficient headroom to account for *'the likelihood that rates in 2013/14 could move above this level'*. It argues that a risk free rate range of 1.5- 2% would be more appropriate to avoid the downside risks of under-estimating the risk free rate.
- 6.30 BT states that implied future yields for 2013/14 have fluctuated around 1.5% in the months to March 2011 and reached a peak of 1.6% in February 2011. It argues that this is similar to the rates observed when the Competition Commission made the Bristol Water ('BW') determination.¹³⁸
- 6.31 Oxera compares the current yield curve (as at March 2011) with the implied yield curve for September 2013. It argues that this shows that interest rates are expected to increase from their current rates to September 2013 across all maturities.
- 6.32 TTG and Sky, on the other hand, argue that a rate of 1.4% is more appropriate (based on the 5 year average for UK 5 year gilts). They state that the 10 year average would not give sufficient weight to the downward trend in risk free rates over the last 10 years.
- 6.33 BT argues that implied rates have been fluctuating at a level similar to that observed in July 2010, when the Competition Commission set the risk free rate at 2%. In contrast, TTG and Sky disagree that 2% was the rate recommended by the Competition Commission. TTG argues that the Competition Commission set a range of 1% to 2% for the risk free rate, and selected a WACC at the top of this range which is consistent with a 2% risk free rate, but is not a recommendation for it.
- 6.34 Sky and Europe Economics argue that the concept of mean reversion in the risk-free rate is inconsistent with our approach to estimating the equity risk premium (ERP).

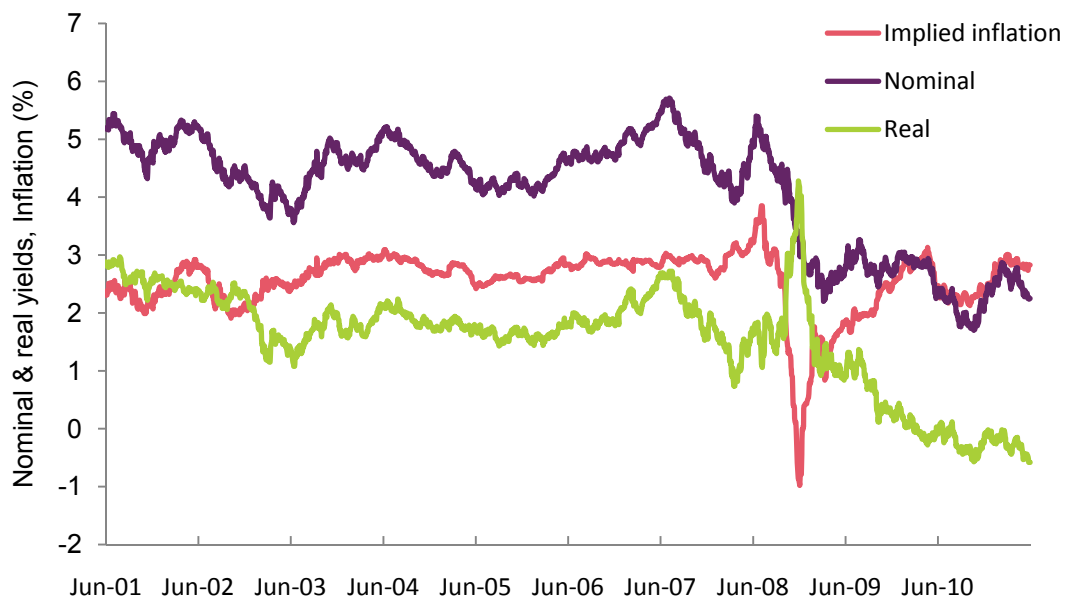
Updated data

- 6.35 We have updated the data which we gave weight to in the January Consultation process to take account of more recent movements in the risk free rate. Figure 6.1 shows that the nominal and real yields increased to February 2011, a point BT made, but have since fallen (based on data to 31 May 2011).

¹³⁷ http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_final_report.pdf

¹³⁸ http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_final_report.pdf

Figure 6.1 - 5 year gilt yields since 2001 – Nominal, Real & Inflation



Source: Bank of England

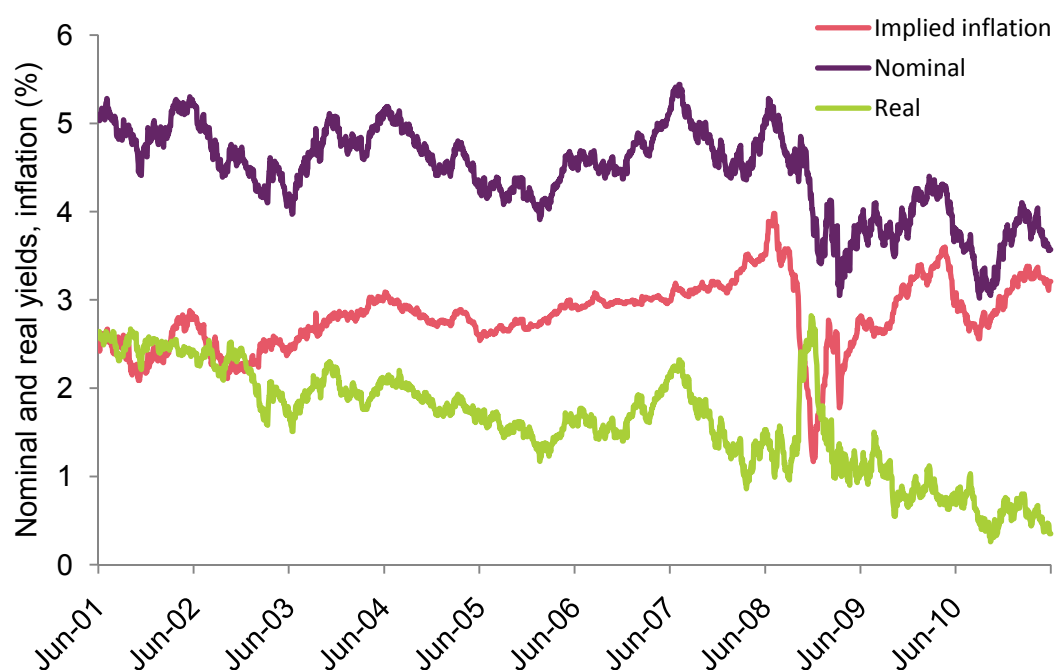
- 6.36 The yield for 5-year zero coupon gilts has fallen to around -0.5% over the last quarter. As discussed in our January Consultation, while we would normally give more weight to recent rates than historical averages, we are mindful that we do not wish to give too much weight to a rate based on a period of unusual market activity. This is the reason that we gave more weight to longer term averages in arriving at our proposed range for the January Consultation, and in previous decisions.
- 6.37 We note that the 5-year average for 5 year real gilts has fallen from 1.4% (based on data to 10 November 2010 cited in our January Consultation) to 1.2% (based on data to 31st May 2011). The 10 year average for 5 year gilts has fallen from 1.7% to 1.6% over the same period. These averages are shown in Table 6.4.

Table 6.4 - 5 year gilt yields average rate

Average period	Nominal (%)	Real (%)
31 May 2011	2.3	-0.6
1 month	2.3	-0.5
3 months	2.5	-0.4
6 months	2.5	-0.2
1 year	2.3	-0.2
2 years	2.6	0.1
3 years	2.9	0.7
5 years	3.7	1.2
10 years	4.1	1.6

Source: Bank of England

Figure 6.2 - 10 year gilt yields since 2001 – Nominal, Real & Inflation



Source: Bank of England

6.38 10 year gilts tend to give higher yields than the 5 year equivalents, and are also less volatile. However, even the 10 year gilt yield is at historically low levels.

- 6.39 The average yield on the 10 year government gilt over the last 5 years has fallen from 1.4% in November 2010 to 1.3% (May 31st 2011). These averages are shown in Table 6.5.

Table 6.5 - 10 year gilt yields average rate

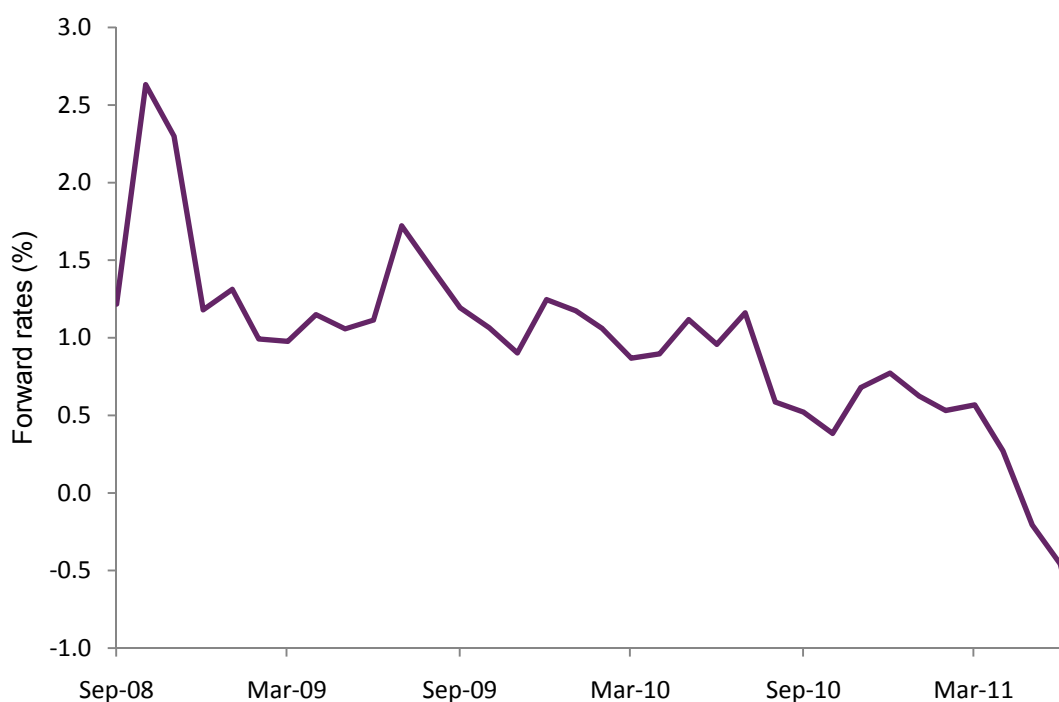
Average period	Nominal (%)	Real (%)
31 May 2011	3.6	0.4
1 month	3.6	0.4
3 months	3.8	0.5
6 months	3.8	0.6
1 year	3.6	0.6
2 years	3.8	0.8
3 years	3.9	1.0
5 years	4.3	1.3
10 years	4.4	1.6

Source: Bank of England

Implied forward rates

- 6.40 In the past, historic averages and forward looking implied rates have tended to be similar. On the basis of this assumption, we have used historic rates as an indicator of the future risk free rate.
- 6.41 In our January Consultation, we noted that the implied forward rates for 2013/14 were around 1%. We observed that they were below the historic gilt yields, but were cautious about placing significant weight on the evidence of implied forward rates.
- 6.42 We noted that the implied forward rates were likely to be affected by the Bank of England's Quantitative Easing programme; we therefore stated that we needed to exercise caution when interpreting this data. We considered that, given a 1% implied future yield for 2013/14, a 1.5% risk free rate was reasonable.
- 6.43 Using more recent data, we note that implied forward rates for 2013/14 are out of line with the historic average gilt yields discussed above of 1.2-1.6%.
- 6.44 In addition, we observe that the current implied instantaneous forward rates for 2013/14 are highly volatile, reducing from around 1% at the time of our consultation, to negative rates at July 2011. Furthermore, the implied 5 year forward rates for 2013/14 have also reduced materially over the period (see table 6.6 for details).

Figure 6.3- Historic monthly implied forward rates for 30 September 2013



- 6.45 In addition, we observe that the current implied instantaneous forward rates for 2013/14 are highly volatile, reducing from around 1% at the time of our consultation, to negative rates at July 2011. Furthermore, the implied 5 year forward rates for 2013/14 have also reduced materially over the period (see table 6.6 for details).
- 6.46 Figure 6.3above shows the implied forward rate for September 2013 observed each month from September 2008 to 7 July 2011. As seen, the implied forward rate has been volatile and is now negative as a result of a recent sharp decline in rates¹³⁹.
- 6.47 We are therefore cautious about placing too much weight on these low implied forward rates which have not been observed over a long period.
- 6.48 As TTG notes, recent rates alone are not a robust indicator of the future risk free rate. However, if low implied forward rates continue to persist, we may give more weight to them in future assessments of the cost of capital. This is on the basis of our estimation of a forward looking cost of capital.

Our view

- 6.49 As a result of the more recent evidence which we have provided above, we do not think that BT's concerns are still valid. The risk free rate has continued to decrease since the peak in February 2011. We consider that underlying financial conditions are somewhat different to those considered by the Competition Commission when assessing the risk-free rate in the BW determination. **Error! Reference source not found.**6 below summarises the movements in the data which we consider in arriving

¹³⁹Note that the implied forward rate chart shown in Figure 6.3 is not the same as that derived by Oxera for BT. The chart above shows the implied forward rate for a specific date (September 2013), whereas Oxera's Figure 2.3 looks at a fixed forward period on different dates. In addition, Oxera look at the 5 or 10 year yields as forward points in time, whereas the chart above shows the instantaneous annual yield as at September 2013 implied by monthly gilt yield data.

at our estimate of the risk free rate. As shown, at the time of our January Consultation, a rate of 1.5% looked reasonable. However, since this time, key evidence used to support our decision shows that rates have all declined.¹⁴⁰

Table 6.6: Changes in supporting evidence on risk free rate

	WBA Consultation Jan-11	WBA Statement July-11
5 year average 5 year gilts	1.4%	1.2%
10 year average 5 year gilts	1.7%	1.6%
5 year average 10 year gilts	1.4%	1.3%
10 year average 10 year gilts	1.7%	1.6%
Instantaneous implied forward rate at Sept 2013 ¹⁴¹	c1.0%	<0%
Implied forward rate on 5 year gilt to Sept 2013 ¹⁴²	C1.4%	c.0.9%

- 6.50 As a result of the significant downward trend in volatile implied forward rates, we are not minded to change our methodology, which places weight on the historic average of gilt yields. However, taking into account the more recent evidence, our estimate for the risk-free rate is now 1.4%.
- 6.51 We accept TTG's argument that 1.5% was slightly above current observed rates. We note the point made by TTG and Sky that the 10 year average may not reflect the downward trend in risk-free rates. However, we remain cautious about placing too much weight on the most recent data.
- 6.52 On the basis of the downward trend in estimates (using both our approach shown in Figure 6.3 and Oxera's approach used in their report) since January 2011, we consider a rate of 1.4% is reasonable. This reflects the longer term gilt yields, the downward trend of forward looking implied rates and the Competition Commission's estimate of the risk free rate of 1-2%.
- 6.53 In response to the point made by Sky and EE in relation to mean reversion, we see no obvious connection between mean reversion in the risk free rate and mean reversion in the ERP.

¹⁴⁰We note that current rates are also somewhat lower than those observed in March 2011 during the cost of capital assessment in the Mobile Call Termination statement.

¹⁴¹The instantaneous implied forward rate is the implied future yield on a very short term investment made in September 2013. This data is published by the Bank of England.

¹⁴²The estimates for Jan 11 and July 11 represent the implied future yield on an investment in a five year ILG made in 3 and 2.5 years respectively. These estimates are consistent with Oxera's calculations, using Bank of England spot interest rates expected at date 't' for a period of 'T-t' and the

following formula: $f_{t,T} = \left[\frac{(1+r_T)^T}{(1+r_t)^t} \right]^{\frac{1}{T-t}} - 1$.

Cost of Debt/Debt Premium

Our consultation proposal

- 6.54 In estimating BT's cost of debt, we use two inputs:
- The risk free rate (discussed above); and
 - BT's debt premium.
- 6.55 We proposed a debt premium of 2-2.5% in our January Consultation for BT Group. This was consistent with our average gearing level assumption of 50%, discussed below.
- 6.56 Combining this with the proposed real risk free rate of 1.5%, we estimated BT's Group's real pre-tax cost of debt to be 3.5%-4%. In nominal terms this (using an illustrative inflation rate of 2.5%) led us to a proposed range of 6-6.5%.
- 6.57 In estimating BT Group's debt premium, we considered the yield on BT's 2016 sterling denominated bond, over and above benchmark gilt yields. This indicated a spread of 2% to 2.5% with a brief dip below 2% during January 2010 and a brief peak above 2.5% in June 2010 over the 12 month period to January 2011.
- 6.58 We noted that the observed yield on BT's 2016 bond during the previous year was 4% - 6%. Taking into account the fact that BT issued €600m commercial paper at a time when gilt yields were considerably higher than at the time of our January Consultation, we stated that our proposed range was not unreasonable.
- 6.59 At the time of our January Consultation, BT's 2016 sterling bond was yielding around 4%, about 2% above the equivalent gilt yields.

Consultation responses

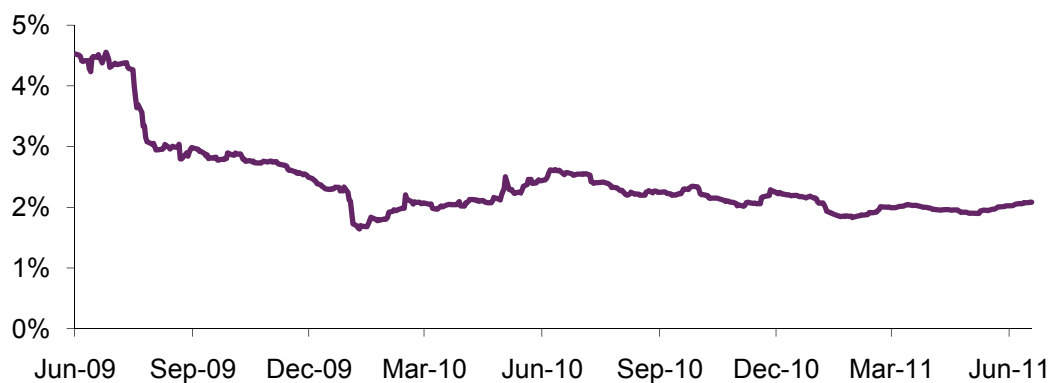
- 6.60 TTG agrees with our proposed range of 2-2.5% for the debt premium for BT Group. It considers that the appropriate figure to apply is towards the bottom of this range for the following reasons:
- The nominal range appears high compared to the observed yield for BT bonds.
 - The same debt premium is used for both BT Group and Openreach; TTG argues that the cost of debt for Openreach is likely to be lower than for BT Group.
 - The WACC used for Openreach should exclude the impact of the pension scheme, the existence of which increases the BT Group cost of debt.
- 6.61 TTG also argues that the appropriate debt beta range is 0.20-0.25. This is based on the current forward looking debt beta assuming half the rise in the debt premium is due to an increase in the debt beta. We discuss this further from paragraph 6.138 below.
- 6.62 Sky agrees with our stated range of 2-2.5%, however it notes that EE's updated data suggests an estimate at the lower end of this range. EE states that spreads have been consistently at or around 2% since October 2010.

- 6.63 EE noted that the higher cost of debt which we assumed, compared to the observed yield, is based on an assumption that the total cost of debt will rise. EE supported this assumption, but notes that if this is incorrect, the total cost of debt will be lower than our estimate. It argued that this could justify choosing a number at the lower end of our range.
- 6.64 Oxera considers that a debt premium range of 2-2.5% is consistent with the evidence on current and historical spreads for BT bonds and spreads on a BBB rated bond index.
- 6.65 BT argues that we should take into account the Competition Commission's approach to the cost of debt which it has applied to other sectors. This approach uses a weighted average of new debt and embedded debt. BT claims this would be consistent with our stated policy objective of providing BT with the opportunity to recover all of its relevant costs (where efficiently incurred) including the cost of capital.
- 6.66 Oxera has estimated the impact of including the cost of embedded debt to increase the cost of debt to 8% in nominal terms (compared to our nominal cost of debt estimated between 6-6.5% as proposed in our January Consultation).

Updated data

- 6.67 More recent data in Figure 6.4 shows that BT's corporate bond spreads remain around 2%.

Figure 6.4 - BT 2016 Corporate bond spread over benchmark yields, %



Our view

Historic cost of debt

- 6.68 We have never previously used the cost of embedded debt in our calculation of the WACC. This is consistent with our approach to assessing the forward-looking costs of providing regulated services. This is also consistent with CAPM.
- 6.69 We note that our normal approach to setting regulated charges involves a forecast of the costs of providing a service. Where costs need to be estimated, the risks of under-recovery sit with BT and the rewards of over-recovery accrue to BT. We would not seek to claw-back any previous over recovery which BT received. In the same regard, we do not consider it appropriate to include the costs associated with historic debt.

- 6.70 Under this approach, it may be the case that costs turn out to be higher or lower than expected. In a new price control period, new information may inform the latest set of assumptions and forecasts, however, we do not take “retrospective” action.
- 6.71 This means that we do not make adjustments for potential over or under recovery in the past. There are strong arguments for regulating according to this principle:
- Allowing BT to bear the risks and rewards of costs turning out to be different to forecasts gives it a strong incentive to operate efficiently and minimise costs.
 - Adjusting for past under or over recovery of costs could lead to significant investment uncertainty, undermining efficient investment.
- 6.72 We believe that a consistent approach to setting charge controls furthers the interests of consumers and encourages investment and innovation.
- 6.73 Although we accept that other regulators have taken account of embedded debt, they have done so consistently over time. The Competition Commission has upheld the approach of other regulators. The Competition Commission has also considered our approach to the cost of debt in the LLU and WLR Appeal Determinations, and did not suggest that we should be using an embedded debt approach.
- 6.74 We note that, like Ofcom, other regulators have regard to their specific duties and the specific circumstances of the companies which they regulate. Where these duties or circumstances differ, it may be appropriate to take a different approach. Specifically, we note that Ofcom does not have a ‘duty to finance’ which may lead to a different approach being taken.
- 6.75 On balance, we believe that the evidence presented by BT in its consultation response does not justify a change to our previous, well understood, consistent methodology.¹⁴³
- 6.76 We disagree with BT’s proposal in principle, and we also note that the cost of debt under this proposal is 8%. We think this cost of debt looks high, particularly when compared to BT’s assessment of the cost of equity for BT Group of 9.25%.
- 6.77 We understand that the 8% weighted average cost of debt is calculated on the proceeds of the debt at the time of issue. We note that when the cost of debt is calculated based on the market value of debt (which was 109% of the par value at June 2011) the difference between BT’s estimate of the cost of debt and our estimate of the cost of debt would be smaller.

Forward looking cost of debt

¹⁴³We note, however, as a result of our revised inflation assumptions, our nominal cost of debt for BT Group is 6.75%. In addition, BT’s average cost of embedded debt, reported in its 2011 accounts, has declined from 8% to 7.4% (for the period 1 April 2010-31st March 2011). We therefore consider the scale of the difference is not as significant as BT and Oxera calculated based on data available at the time of their response. We note that Oxera exclude the cost of bonds that would mature before 2013 and make an assessment of floating rate bonds, however the weighted average cost of new and embedded debt was equal to the cost of embedded debt. On this basis, we have assumed the cost of embedded debt in the accounts represents a reasonable proxy of the weighted average cost of debt and note that this has fallen from 8% to 7.4% based on BT’s latest accounts.

6.78 As all respondents agreed that our range of 2-2.5% is an appropriate estimate of the cost of new debt for BT Group, we consider that this remains a reasonable range for the Group.

ERP

Our proposal

6.79 The Equity Risk Premium (ERP) is a key component of the estimate of a company's WACC. Under CAPM the ERP represents the extra return that investors require as a reward for investing in equities rather than a risk-free asset. It is market-specific, not company-specific.

6.80 We set out our approach to estimating the ERP in our 2005 statement entitled '*Ofcom's approach to risk in the assessment of the cost of capital*'.¹⁴⁴

6.81 In our January Consultation, we proposed a point estimate for the ERP of 5% from a range of 4.5-5%.

6.82 In estimating this point range, we relied heavily on the work of Professors Dimson, Marsh and Staunton ("DMS") from the London Business School, which tracks the average premium that investors have earned from equities over time.

6.83 DMS, in their 2010 report¹⁴⁵, suggested an arithmetic mean premium for the world index of 4.5% to 5%, stating this was their "*best estimate of the equity risk premium for use in asset allocation, stock valuation and corporate capital budgeting applications*". For the UK, DMS estimated the historic premium of equities over bonds to be 5.2%.¹⁴⁶

6.84 We also considered a range of other sources including:

- Academic/user surveys (although we placed little weight on this);
- Market commentary which suggested that when equity prices are depressed and average corporate gearing is higher than anticipated, the ERP may be increased. However, we considered that this effect will no longer be relevant once gearing levels revert to normal;
- Regulatory benchmarks which show that recent ERP estimates, by the UK's economic regulators, were in the range of 5% to 5.5%; and
- The Competition Commission's determination in relation to Bristol Water, which suggested a point estimate at the top of their range of 4-5%.¹⁴⁷

6.85 In arriving at our point estimate of the ERP, we noted that setting the ERP value too low could lead to discretionary investment by BT being discouraged. In contrast, setting the value too high could lead to consumers paying prices that are too high, or BT's competitors reducing their levels of discretionary investment.

¹⁴⁴http://stakeholders.ofcom.org.uk/binaries/consultations/cost_capital2/statement/final.pdf

¹⁴⁵Dimson, Marsh and Staunton, "Credit Suisse Global Investment Returns Sourcebook 2010", Credit Suisse Research Institute.

¹⁴⁶Arithmetic mean 1900-2009

¹⁴⁷http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_final_report.pdf

6.86 We considered that the downside risk of setting the ERP too low outweighed the downside risk of setting the ERP too high. Taking this into account, along with evidence from market commentators and the Bank of England (which suggested that the ERP may have increased in recent years), we considered a point estimate of 5% was reasonable.

6.87 We asked stakeholders for comments on our approach in our January Consultation.

Question 6.2 We welcome stakeholders' views on Ofcom's approach to ERP estimates

Consultation responses

6.88 BT agreed with our point estimate of the ERP of 5%. Oxera suggested that a range of 4.5%-5.5% is appropriate. In arriving at this range, Oxera has regard to the latest historical data provided by DMS, forward looking evidence and survey data.

6.89 TTG agreed with our range of 4.5-5%. However, TTG argued that this range of 4.5%-5% is more reasonable than our point estimate of 5%. It argues this for the following reasons:

- Consistency with the range of 4%-5% implied by the Competition Commission's determination in relation to Bristol Water.
- Consistency with calculation of the ERP using an arithmetic mean premium which implies there is no mean reversion.
- Market volatility has or will have subsided, therefore Ofcom's argument that the ERP increases in periods of market volatility is no longer appropriate. On this basis, EE argues that the 0.5 uplift in the ERP which was introduced in May 2009 no longer remains appropriate.

6.90 Finally, TTG argued that if we increase the risk-free rate, we should consider a reduction in the ERP because total market return tends to be more stable than the individual components.

6.91 Sky and EE believe that an ERP range of 4.5-5% is appropriate; they argue that it is incorrect to assume that the CC arrived at a single point estimate of 5% for the ERP. Sky's view is that the Competition Commission gave more weight to total market return rather than a point estimate of its components. It also argues that 5% includes a 0.5% uplift to reflect market volatility which has since passed.

6.92 Sky and EE argue that if we believe mean reversion applies to prices when calculating the risk-free rate, we should also consider it in the calculation of the ERP which would make a geometric mean more appropriate. Sky argues that this would make the ERP 4.5% or lower. However, Sky accepts that adopting a lower ERP would be consistent with a higher risk-free rate.

Updated data

- 6.93 The latest historical ERP evidence reported by DMS¹⁴⁸ shows that the historic premium of equities over bonds for the UK remains at 5.2%.¹⁴⁹ In addition, in the 2011 report, DMS have suggested a long-run arithmetic mean premium for the world index of around 4.5-5%.

Our view

- 6.94 We continue to believe that a point estimate of the ERP of 5% remains appropriate.
- 6.95 Although we note EE's argument that market volatility may have declined, the most recent data from DMS suggests that a point estimate of 5% is reasonable. In addition, we note that volatility may have increased from the relatively benign period during which we decreased our ERP estimate from 5% to 4.5%.
- 6.96 As discussed above at paragraph 6.53, we see no obvious link between mean reversion in the risk free rate and mean reversion in the ERP estimate. Therefore, we consider that using the arithmetic mean to estimate the ERP remains appropriate.

BT Group Beta

Our proposal

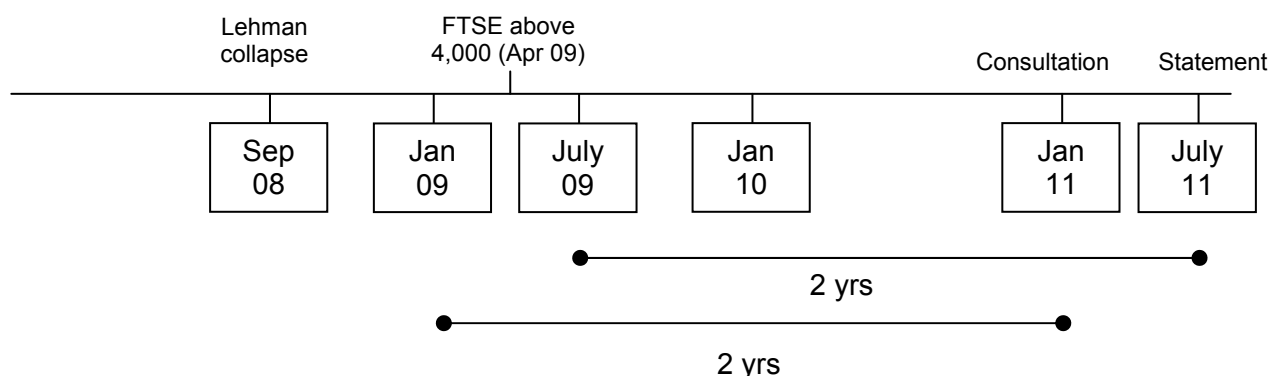
- 6.97 The value of a company's equity beta reflects movements in returns to shareholders relative to movements in the return from the equity market as a whole.
- 6.98 In our January consultation, we explained that our approach to estimating the equity beta is broadly the same as that adopted in the past. This involves identifying the equity beta¹⁵⁰ for the relevant time period. We then derive the asset beta taking into account the gearing over the same time period, and the debt beta. We then select an appropriate asset beta range for BT Group, which we re-lever using the debt beta and prospective gearing assumption.
- 6.99 In the past, we have placed most weight on the 2 year beta however, as we set out in our consultation, we were mindful that the 2 year statistics included a period of the credit crisis. In order to mitigate the impact of this potential distortion, we gave greater consideration to the 1 year data in the consultation. While we are not seeking to set out exactly when the credit crisis ended, we believe that by July 2009 the credit markets were in a more stable state than 6 months earlier. Therefore, the evidence on volatility suggests that a 2 year data 'window' from June or July 2009 to June 2011 is likely to be more robust, and less impacted by the credit crisis, than a 2 year window from January 2009 to January 2011.

¹⁴⁸Dimson, Marsh and Staunton, "Credit Suisse Global Investment Returns Sourcebook 2011", Credit Suisse Research Institute.

¹⁴⁹Arithmetic average 1900-2010.

¹⁵⁰Based on Brattle and Ofcom data. See separate report entitled "Estimate of BT's Equity Beta", Brattle Group, June 2011, published alongside this statement.

Figure 6.5: Beta estimation timeline



- 6.100 In our January Consultation, we therefore proposed to give greater weight to an updated 2 year data set for the estimation of the equity beta in this statement.
- 6.101 We acknowledged that during the credit crisis, as market capitalisations of companies fell, gearing levels rose. If equity betas were stable, the effect of this is a likely fall in asset betas during this period. We noted that during the crisis, the market premium may have been inflated – this is due to a similar level of market risk being spread across a smaller total value of equity.
- 6.102 We therefore explained the need to be cautious about using an ERP assumption based on long-run historical data with betas derived from ‘crisis’ periods. We proposed to apply the beta estimate as discussed above, with an ERP estimate that is not adjusted to reflect short-term crisis effects. In order to estimate the asset beta, we proposed to use the observed actual gearing levels in order to derive an asset beta for BT Group.

Gearing – our proposed methodology

- 6.103 It is worth noting in a little more detail the process that we proposed to use when estimating BT’s equity beta, since there are effectively 2 different gearing estimates required for the process, which may or may not be the same.
- 6.104 We used an observation of the actual gearing level of 50% over the relevant time period to estimate an asset beta for BT Group. We then potentially use another gearing figure to re-lever this asset beta up to an equity beta which is used in the final WACC calculation.
- 6.105 In the past, the gearing level we used to re-lever the asset beta was an optimal gearing level, based on long-term norms. However, in our January consultation we proposed moving to a methodology that used the observed level of gearing for the purposes of re-levering.
- 6.106 We proposed to use a gearing ratio of 50%, to re-lever the asset beta for BT Group. This reflected the average BT Group gearing over the period of beta measurement.
- 6.107 In our January Consultation, we asked stakeholders for comments:

Question 6.3 We would welcome stakeholders’ views on Ofcom’s approach to BT’s beta calculation.

Our proposed asset beta range for BT Group

- 6.108 Using the methodology described above, we proposed a range of 0.45 - 0.60 for the BT Group asset beta. This took into account the 2 year asset beta of 0.53 and the 1 year asset beta of 0.58 at 11th January 2011. In addition, we considered the Brattle Group ("Brattle") evidence from 27 October 2010 which showed a range of 0.52 to 0.54. This was based on a gearing assumption of 50% and a debt beta of 0.125.
- 6.109 We adopted a wide range in recognition of the volatility of the data and the risk that the data might move materially between the consultation and the final statement.

Consultation responses

BT Group Beta – BT's view

- 6.110 BT's response stated that there is no evidence that its business risk and asset beta have decreased since our previous assessment of the cost of capital.
- 6.111 Oxera examined revenue and cost risks, along with BT's pension and regulatory risks. It concluded that the evidence is inconsistent with the notion that BT has experienced an identifiable reduction in business risk.
- 6.112 BT argued that our point estimate of the BT Group asset beta of 0.525 is too low for two reasons:
- The low end of the range is influenced by the cut-off date used by Brattle of 27th October 2010 which reflects the lowest estimate of beta for over two years; and
 - The gearing assumption of 50% used to de-lever the equity beta is biased upwards due to unusually high levels of gearing as a result of the steep decline in BT's share price (discussed below).
- 6.113 In relation to the first point, BT acknowledged our intention to use a more recent dataset which is likely to be less distorted by the credit crisis. However, it argued that rather than relying on an estimate at a single point in time, we should take a more holistic approach considering 1, 2 and 5 year data. This was the approach taken by Oxera in its report commissioned by BT.
- 6.114 Oxera stated that using a longer time period may provide a more robust estimate of the systematic risk of the company. In support of this, it argued that the large swings in BT's gearing will have had a greater impact on the 1-2 year equity beta. However, Oxera acknowledges that 1 and 2 year equity betas may be more appropriate for forward looking estimates of equity betas.

BT Group beta – TTG and Sky view

- 6.115 TTG broadly agrees with the overall method of estimating the BT Group equity and asset betas which we proposed in our January consultation.
- 6.116 TTG and Sky argue that our assumption that all of the increase in the debt premium is related to default risk is incorrect. They jointly commissioned a report from Europe Economics (EE) to consider this issue.
- 6.117 EE states that there will be some correlation between the risk of default and the broader economic cycle. This is because companies tend to be more likely to go bust

in a period of economic downturn. EE argues that not all default risk is diversifiable therefore the debt beta is above zero.

6.118 From 2007- 2010 EE argues that credit markets have been impaired and corporate credit risks elevated. EE believes that some of this was a consequence of a perceived increased risk of default, however it claims that it seems likely that another driver of the increased debt premium was an increased debt beta. For this reason, it argues that we should not assume that debt betas were invariant over the period.

6.119 EE argues that it is more plausible to assume that half of the increase related to an increase in the default risk and half of the increase is related to the debt beta for the following reasons:

- The debt beta contributes to a variation in the debt premium as well as default risk therefore equal apportionment should be the default position.
- Academic studies suggest the proportion of the debt premium variation attributable to default risk is 34% to 73%.
- The CC assumed the proportion attributable to debt beta was 28% to 60% (in 2007).
- Using historic data for BT the variation attributable to debt beta was 38% to 60%.
- Direct estimates of debt beta (though unreliable and non-robust) are broadly compatible with this.

6.120 EE acknowledges that estimating the proportion of the increase which is attributable to the debt beta is not straightforward. Having attempted to estimate the debt beta, EE notes that estimates of the debt beta are 'unreliable, non-robust and not supportive of', but broadly consistent with, the 50% assumption.

6.121 According to TTG, the debt beta under the equal apportionment method increases to 0.20-0.25 (from 0.1 – 0.15 used in our January Consultation).

6.122 TTG and Sky argue that using this debt beta to de-lever BT Group's equity beta results in an asset beta range of 0.55 to 0.64 for BT Group. Re-levering using this debt beta produces a BT Group equity beta range of 0.90 to 1.03.

6.123 EE and Sky note that a consequence of spreading the increase in debt premium between the debt beta and default risk is that the BT asset beta is more stable compared to the asset beta calculated assuming all debt premium risk is related to default risk.

Gearing – BT view

6.124 BT and Oxera consider that our use of actual gearing data to de-lever the equity beta is inappropriate. They argue that investors did not adjust their view of long-run gearing for BT as the large swing in BT's gearing was believed to be temporary because:

- BT's equity beta estimates have been fairly stable over the past 2 years despite the increase in gearing;
- Prior to the steep drop in the share price, gearing was around 40% or lower;

- BT communicated its intention to reduce debt levels to the market;
 - Analysts were forecasting a reduction in BT's net debt, and were using lower gearing assumptions in BT valuation models;
 - The relative level of spreads on BT's corporate bonds were consistent with the belief that investors considered the high gearing to be temporary.
- 6.125 Oxera states that this evidence suggests that BT's share prices did not incorporate the actual higher gearing. It argues that share prices reflect a stable, forward looking estimate of BT's gearing.
- 6.126 On the basis of this, BT argues that, in converting the observed beta into an asset beta, we should consider a forward looking gearing, consistent with investor perceptions. Oxera considers that a conservative estimate of 40% would be appropriate. We estimate that this assumption would result in a BT Group asset beta range of 0.52-0.68¹⁵¹.
- 6.127 In relation to the calculation of gearing, Oxera argues it is more appropriate to use BT's adjusted net debt rate than the Bloomberg net debt figure. BT's adjusted net debt is stated after:
- Removal of changes in the value of bonds due to fluctuations in currency and interest rate movements;
 - Removal of accrued interest incorporated in the bond and investment values.
- 6.128 Oxera argues that a net debt figure which includes the first adjustment, but not the second would be appropriate for use in our gearing calculation. They estimate the impact of the two adjustments, and conclude that as the first adjustment is more significant, we should use BT's adjusted net debt figure.
- 6.129 Oxera notes that the conceptually appropriate measure of gearing is based on the market value of equity and debt. However, it notes that in practice the market value of debt is not commonly readily observable therefore book value of debt is used as a proxy. Oxera has calculated the market value of BT's debt and finds:
- During the crisis the market value of long term debt was around 88% of the par value of debt (March 2009).
 - More recently, the market value has increased to around 109% of the par value (June 2011).

Updated data

- 6.130 As discussed above, we stated our intention to give greater weight to the 2 year beta data for BT for this statement as it will not contain data from the credit crisis during late 2008 and early 2009.

¹⁵¹Oxera note that using an equity beta range of 0.9-1.0 along with a 40% gearing assumption results in an asset beta range of 0.59-0.65. It notes that this is similar to the range in our May 2009 decision. It believes this is consistent with the view that BT's risk profile has not changed.

- 6.131 We have asked Brattle to update their October 2010 report to take account of data to 6th June 2011.¹⁵²
- 6.132 Brattle concludes that the most recent data indicates little change in the level of BT Group's equity beta since March 2009.
- 6.133 The analysis shows the one year beta has fallen from 0.96 to 0.94, against the FTSE All Share index, whereas the two year beta has increased from 0.84 to 0.91 since Brattle's October 2010 report.
- 6.134 Using a debt beta of 0.15, Brattle estimates that BT's 2 year asset beta has increased from 0.47 to 0.53 (based on average gearing of 51%), whereas the one year asset beta has fallen from 0.54 to 0.50 (based on average gearing of 47%).

Our view

BT Group beta

- 6.135 We note BT's assertion that there is no evidence that their business risk has gone down. Our consistent approach to assessing asset betas has involved the use of observed market beta levels. We believe there to be no compelling evidence to suggest that these observed betas are materially incorrect. This may imply that investors perceive a change in BT's business risk¹⁵³.
- 6.136 As discussed in the January Consultation, we consider that we are now able to use a dataset which substantially excludes the credit crisis for the calculation of the WACC in this statement.¹⁵⁴ We accept BT's concern regarding the cut-off date used by Brattle in the second consultation. We consider that the latest cut-off date of 6th June mitigates this problem, as set out above in paragraphs 6.99 - 6.100.
- 6.137 We have previously explained our preference for using 2 year betas. This has been supported by Brattle and upheld by the Competition Commission. We have also taken into account the 1 year beta estimates. However, for the purposes of this statement, we continue to place most weight on the 2 year beta estimates for BT Group.

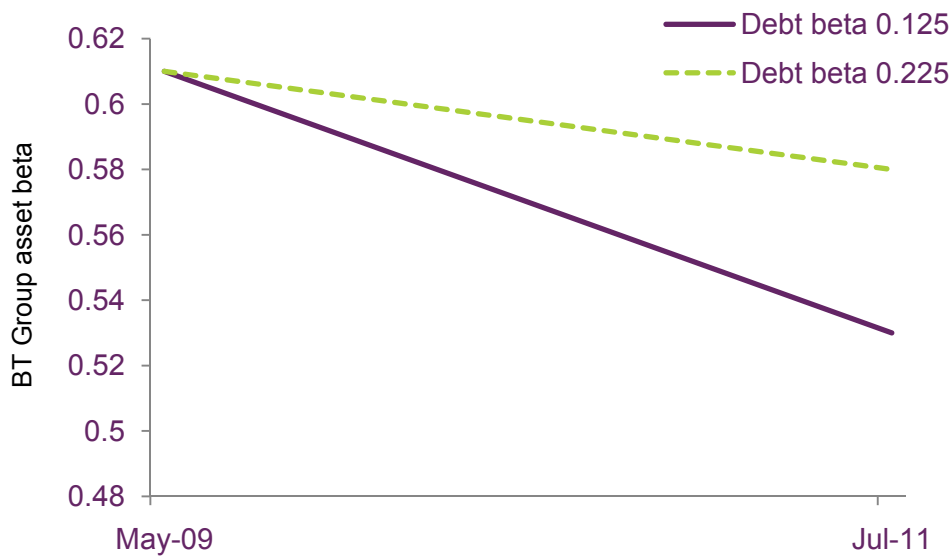
Debt beta

- 6.138 In relation to EE's argument that we should assume that 50% of the debt premium change relates to the debt beta, we consider this an interesting argument. As shown in Figure 6.6, we note that doing this would make the asset beta for the period look substantially more stable. This would, to some degree, respond to BT's claim that our implied asset beta is implausible when considered against the assertion that the risks of BT Group are unchanged.

¹⁵² See separate report entitled "Estimate of BT's Equity beta", Brattle group, June 2011, published alongside this statement.

¹⁵³ Our proposed reduction in the BT Group asset beta from May 2009 to now is from 0.61 to 0.53. This may suggest a small decline in perceived business risk over time, which may reflect a general view among investors that telecoms companies have become less risky over time. However, with such a small change in asset beta, we do not speculate about the cause of changes in investor perceptions, we merely observe the market data in a consistent manner.

¹⁵⁴ Although we note that the exact date of the end of the credit crisis is open to some debate.

Figure 6.6: Impact of debt beta on BT Group asset beta

6.139 However, while we believe this to be an interesting line of argument, the evidence available to support EE's use of a 50% assumption is less robust, since direct observations of debt betas tend to produce quite volatile (and sometimes negative) figures.

6.140 In addition, we note that a higher debt beta assumption would not necessarily impact our final estimate of the asset beta, since we proposed to re-lever the asset beta based on an actual observed level of gearing.

6.141 For illustrative purposes, as shown in Table 6.7, if we were to assume a debt beta of 0.225 for BT Group, our 2 year equity beta is de-levered to an asset beta of 0.58 (rather than 0.53 with a debt beta of 0.125), and then re-levered back to 0.94 for the purposes of the final WACC calculation.

Table 6.7 - Impact of higher debt beta assumption

	Ofcom January 2011	TTG/Sky mid-point
2 year equity beta	0.94	0.94
Debt beta	0.125	0.225
Asset beta	0.53	0.58
Equity beta re-levered	0.94	0.94

6.142 We recognised in our consultation that the debt beta was likely to have increased, and proposed a range of 0.1 – 0.15 (up from 0.1 in May 2009). While determining the exact level of debt betas is extremely difficult, we think that our range of 0.1 – 0.15 may not fully capture a plausible range. Therefore, for the purposes of this statement we have extended our debt beta range to 0.1 – 0.2.

6.143 Based on the Brattle 2 year equity beta analysis, which suggested an equity beta range of 0.78 – 1.05 (from the 2 yr beta versus the FTSE All-share index), and debt beta mid-point of 0.15, we estimate an asset beta range for BT Group of 0.46 – 0.59. This range gives a mid-point of 0.52.

6.144 This range is calculated as follows:

- Low-end: $\beta_A = (0.78 * 49\%) + (0.15 * 51\%) = 0.46$
- High-end: $\beta_A = (1.05 * 49\%) + (0.15 * 51\%) = 0.59$

6.145 We then re-lever back to a 50% gearing level to get the equity beta range used in our final WACC calculation, of 0.77 – 1.04.

Gearing – to calculate the asset beta

6.146 We have previously used the actual level of gearing observed (of 51%) to de-lever BT's equity beta. This is consistent with the use of the actual beta observed over the period. We do not think it would be appropriate to choose a different gearing level which is not consistent with the observed market data.

6.147 We consider this is the correct approach for the following reasons:

- If capital markets function effectively, this is an effective way of de-levering the beta. Changes in value largely accrue to equity holders based on the capital structure that prevails at the time. Market prices will reflect this. Our beta measurement reflects these actual price movements. Thus it is most appropriate to de-lever the equity beta using the gearing statistics which are observed for the relevant time period. This is a generally accepted approach based on fundamental principles of finance theory. BT has not provided sufficient evidence to suggest that this approach is no longer suitable.¹⁵⁵
- This approach is consistent with the approach to de-levering betas which we have taken in the past.

Gearing - prospective

6.148 BT suggested that we should consider the forward looking expected level of gearing. Although we do not think this is appropriate for de-levering the beta, we have considered it for the purposes of re-levering the Openreach/Rest of BT betas.

6.149 In our January Consultation, we proposed to use an average actual level of gearing observed to re-lever betas. At this time, we considered how a gearing assumption of around 40% would impact our estimates. We noted that the impact of this would be small.

6.150 Having considered the data provided by BT, we believe there may be some merit in a notional gearing level of 40%. However, the impact of this is limited to the tax

¹⁵⁵We note that BT communicated its intention to reduce debt levels to the market, however BT only has control over debt levels, not overall gearing. Any changes in the market capitalisation will result in changes in the gearing levels of BT Group, and BT is not in control of this.

benefits associated with a higher level of gearing. BT estimate the impact of this is to increase the WACC by around 0.01%.¹⁵⁶

6.151 As a result of the margin of error associated with the calculation of the WACC and size of the potential impact, we have continued to use an estimate of the actual observed gearing for the purposes of re-levering the beta.

6.152 In relation to our calculation of the gearing figure, we note:

- Brattle reports an average 2 year gearing figure of 51% for BT Group in the June 2011 report.
- Oxera have estimated the impact of using BT's adjusted net debt rather than the Bloomberg reported net debt figure which shows average gearing at 48.4% (March 2009-2011).
- Oxera have estimated the impact of using the market value of debt rather than book value, this shows a 2 year average gearing figure of 49.8% (March 09-11).

6.153 Taking into account the above estimates, we consider that our estimate of 50% remains an appropriate estimate of the average gearing over the 2 year period, and for the purposes of re-levering the asset beta. We acknowledge Oxera's arguments and accept that there are different ways of calculating gearing. However, the impact of using an alternative approach is immaterial.

6.154 To summarise, we accept that prospective gearing for BT Group may be lower than the average observed gearing. However, we note that the net effect of this on the cost of capital is negligible. On this basis, we intend to continue to adopt a prospective gearing assumption of 50%.

Inflation

Our proposal

6.155 We presented analysis based on an inflation rate of 2.5% for the cost of capital in our WBA consultation, which was consistent with our previous estimates in order to assist comparisons of the WACC over time. We stated that this assumption would be reviewed in light of the latest available forecasts at the time of our statement.

Consultation responses

6.156 BT argued that our inflation assumption of 2.5% is too low. Oxera provided evidence that a range of 2.5% to 3% would be more appropriate based on a number of data sources:

- RPI at 5.3% for March 2011.
- HM Treasury forecasts of 3% for 2013/14.
- Implied inflation figures of 2.9% for 5 year gilts and 3.3% for 5 year inflation linked swaps.

¹⁵⁶Based on a pre-tax cost of debt of 6.75% and an equity beta of 0.95, provided for illustration purposes only.

- RPI assumption in the WBA charge control model (3.6%).

Updated data

6.157 We have considered the latest inflation forecasts and agree with Oxera and BT that 2.5% does not seem appropriate for our RPI forecast.

6.158 The latest data shows:

- RPI at 5.2% for May 2011
- HM Treasury forecasts of 3.6% for 2011 and 3.4% for 2013-14.
- Implied inflation of 2.8% for 5 year gilts at 31 May 2011.

Our view

6.159 We consider that an inflation assumption of 3% is an appropriate estimate of market expectations of RPI for the purposes of estimating the WACC. When combined with our risk-free rate assumption of 1.4%, this gives a nominal risk-free rate of 4.4%.

6.160 For the purposes of this charge control, we use a real model and a real cost of capital rate. In future charge controls, where we model in nominal terms (e.g. WLR/LLU charge controls), we will use the nominal pre-tax WACC. We will ensure that we are consistent in our approach to the RPI forecast used in modelling asset price changes and the RPI forecast used in the cost of capital.

Corporate Tax

Our proposal

6.161 In the January Consultation, we proposed a corporate tax rate of 25% for the purposes of calculating the WACC. This was following an announcement by the UK government of an intention to reduce the corporate tax rate to 24% by 2014/15.

6.162 A reduction in corporation tax represents a real saving for businesses which pay UK corporation tax, and this will reduce the pre-tax cost of capital accordingly. Put simply, in order to deliver the same post-tax returns to investors, companies need to earn lower pre-tax profits.

6.163 We need to incorporate the appropriate tax rate for 2013/14 into our calculations. At the time of our consultation, this was projected to be 25%.

Consultation responses

6.164 We received no consultation responses on this issue.

Updated data and our view

6.165 In the March 2011 budget, the chancellor announced plans to accelerate the reduction in the corporate tax rate. This means that the prevailing UK corporation tax rate in 2013/14 is now projected to be 24%.

6.166 We have therefore used the revised projection of the 2013/14 tax rate of 24% in our calculations of the cost of capital.

Ofcom's Pensions Review

Our proposal

- 6.167 As noted in our January Consultation, we conducted an analysis of our treatment of pension costs in charge controls. This included a consideration of whether the regulatory cost of capital should be adjusted to take into account BT's defined benefit (DB) pension scheme.
- 6.168 We developed a set of pensions guidelines (the 'Pension Guidelines') as part of the pensions review statement ('the Pensions Review').¹⁵⁷ As part of the Pension Guidelines, we stated that the cost of capital of BT Group (Openreach and the Rest of BT) should not be adjusted to reflect the existence of the DB scheme.

Consultation responses

- 6.169 Both Sky and TTG reiterate arguments made in response to the Pensions Review. They argue that the existence of the DB scheme increases the observed cost of capital of BT due to the higher risk of the scheme relative to other parts of the business.
- 6.170 TTG considers 'pension risk cost' against the six principles of pricing and cost recovery which were developed by Oftel. It then argues that the pension risk cost should be excluded from the cost of capital for the following reasons:
- Pension risk cost is not caused by the provision of wholesale services;
 - Inclusion of pension risk cost reduces cost minimisation incentives;
 - The beneficiaries of the causes of pension risk cost are shareholders, therefore they should bear the pension risk cost; and
 - Inclusion of pension risk cost increases prices above efficient levels and therefore distorts competition.
- 6.171 TTG also argues that disallowing pension deficit costs from regulated charges, but allowing the pension risk cost is an inconsistent approach. It argues that if shareholders bear the risks and rewards of the pension scheme, they should also bear the cost of the risks.
- 6.172 TTG disagrees with our interpretation of the Competition Commission's determination in the LLU Appeal Determination. It considers that the Competition Commission's determination does not provide cogent or clear support for Ofcom's position.
- 6.173 Sky notes that we cannot fetter our discretion in relation to the treatment of pension costs. It argues that we did not explain how we assessed the merits of taking a fresh approach to the treatment of pension costs in this case.
- 6.174 Sky also restates the estimate of the pension scheme on the cost of capital provided by PricewaterhouseCoopers ('PWC') during the pensions review. PWC estimated that, if we had followed this approach, there would have been a £45m annual reduction in regulated wholesale input costs to providers.

¹⁵⁷ <http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/statement/statement.pdf>

6.175 Sky and TTG, do however accept that there are difficulties associated with estimating the impact of the DB scheme on the cost of capital due to a lack of strong and reliable evidence. Sky cites the PWC estimate as a suggested methodology, alternatively it suggests aiming lower within the range of asset beta to take account of the uncertainty.

Our view

6.176 We summarise our Pension Guidelines in Annex 3¹⁵⁸ to this statement and explain how these are intended to apply to relevant charge controls. In summary, we stated in our Pensions Review that we do not intend to re-examine the general issues unless there has been a material change in the nature or background of the scheme.

6.177 We have already addressed the arguments of Sky and TTG as part of our Pensions Review. We refer readers to the Pensions Review for a detailed explanation of our reasoning.

6.178 We have considered the available evidence including BT's latest results and the Pensions Regulators' review of BT's pension scheme. We do not consider that there is evidence of a material change in the nature of the scheme since our review. We have not been presented with any new evidence as part of the January Consultation to suggest any such change has occurred.

6.179 Therefore, we continue to apply our Pension Guidelines in relation to the cost of capital, this means that we will not adjust the cost of capital to take account of the DB scheme.

Choosing parameter values

Consultation responses

6.180 TTG note that we do not explicitly 'aim up', choosing estimates at the high end of our ranges. They assert that we do however, err on the high end for our ERP estimate as we consider that the downside risk of setting a cost of capital rate too low (BT may reduce discretionary spending in new technology and equipment) exceeds the downside risk of setting a cost of capital rate too high (customers pay higher prices and competitors may reduce discretionary spending).

6.181 TTG argues that an increase in the wholesale price would lead to reduced downstream investment and less effective competition. This is because retail prices will not increase by as much as the wholesale prices increase due to price elasticity.

6.182 TTG argues that a £1 of lost downstream investment by ISPs has a more detrimental impact than £1 of lost upstream investment by Openreach because more innovation, competition and dynamic economic benefits result from investment at the ISP layer than the Openreach layer.

6.183 It also argues that:

- Increased wholesale prices will weaken downstream competition because non-BT providers will experience a margin squeeze.

¹⁵⁸ We set out the interaction between the Pensions Review and subsequent charge controls and respond to BT's arguments regarding the exclusion of deficit repair payments in Annex 3 of this statement.

- There are other reasons for BT to invest e.g. USO therefore BT's investment levels will not decrease significantly.
- The level of investment in new network for copper access services is small.
- Even if the allowed return on CCA FAC assets is less than the actual cost of capital, the actual return on incremental investment will be greater than the actual cost of capital because LRIC costs are generally below CCA FAC costs.
- Aiming up will create incentives for excessive and inefficient investment.

6.184 TTG are supportive of our approach of selecting values for the individual parameters in arriving at the overall WACC. It argues that we should consider selecting values at the bottom of our ranges where appropriate.

6.185 Sky also considers the asymmetry associated with the estimating the cost of capital. It considers that the argument that the risks associated with under-estimating the cost of capital outweigh the risks of over-estimating holds less weight in wholesale markets. It argues that there is significant investment in networks and equipment by downstream wholesale operators.

Our view

6.186 In general, we make the best estimate of each parameter with the CAPM, and then combine these to arrive at an overall WACC. We sense check the results as part of this process (for example, we consider what the combined risk-free rate and debt premium imply for the overall cost of debt).

6.187 As noted by TTG, we do not explicitly 'aim up' in our assessment of the cost of capital. For several parameters, we use ranges to assist us in identifying an appropriate value, taking into account a range of available evidence.

6.188 There are circumstances where we consider it is appropriate to err on the side of caution in relation to certain parameters. We had regard to the asymmetric loss function when choosing a point estimate for the ERP.

6.189 We further note that in relation to several parameters we have chosen a point estimate either at the lower end of the range (i.e. Openreach's debt premium) or chosen a mid point. Where we have chosen a point estimate at the top of the range, we have explained this based on the available evidence and considering the implications.

6.190 We accept TTG and Sky's arguments that the asymmetric loss function is more complicated for wholesale products which support downstream competition. This is because setting a WACC too high may impact investment by other communications providers (CPs). We understand the importance of encouraging efficient investment from both BT and downstream operators. However, we have regard to the level of investment made by the CPs.

6.191 BT Group has invested over £2.5bn per annum p.a. in capital expenditure over the period 2009-2011, compared to TTG's investment of around £100m p.a. over the same period. Whilst we accept that downstream investment is important, the relative scale of BT's investment profile means that the risks associated with setting the WACC too low may be greater than those of setting the WACC too high.

Disaggregating the BT Group WACC

Openreach & Rest of BT beta estimates

Our proposal in January 2011

- 6.192 We proposed to estimate and apply different costs of capital for different parts of BT Group (Openreach and the Rest of BT), on the grounds that they have different systematic risk profiles.
- 6.193 We estimated an Openreach beta by considering the BT Group asset beta alongside analysis performed by Brattle on comparable UK network utilities.
- 6.194 We proposed a BT Group asset beta range of 0.45-0.60 in January 2011 and we noted that Brattle's analysis implied an asset beta range for UK network utilities of 0.3 – 0.4 using a debt beta of 0.15.
- 6.195 From this, we proposed an asset beta range for Openreach 0.05 lower than that of BT Group, which resulted in an asset beta range of 0.40 – 0.55. This was consistent with our view that Openreach is more risky than a pure network utility, but carries less specific risk than the Rest of BT Group.
- 6.196 Broadly speaking, we assumed that Openreach sits in the same position in the risk 'spectrum' (between BT Group and a pure network utility) as in May 2009 (see table below).
- 6.197 The asset beta range proposed in January for Openreach translated to a proposed equity beta range of 0.68 - 0.98 at 50% gearing.
- 6.198 The asset beta range for the Rest of BT was 0.50 - 0.65 with an equity beta range of 0.88 - 1.18.

Our estimates in May 2009

- 6.199 In our previous assessment of the cost of capital for BT and Openreach in May 2009, we estimated an Openreach asset beta of 0.55. We noted that this was approximately 0.16 above the mid-point of the network utility comparators (i.e. 0.39). We set out the relative May 2009 asset betas, along with updated estimates in Figure 6.7 on page 128 below.
- 6.200 The work we commissioned from Brattle at the time suggested an equity beta range for comparable network utilities of 0.4 – 0.7, assuming gearing of 35%. This was equivalent to an asset beta range of 0.29 – 0.49 for the comparators they observed (assuming a debt beta of 0.1).
- 6.201 During the LLU appeal determination, the Competition Commission noted that:

“None of the parties has suggested that it is possible to calculate Openreach's beta with complete precision and they recognize that it is necessary to exercise a considerable degree of regulatory judgement when making a point estimate. In view of the uncertainties involved, we do not consider that there are reasonable grounds to contradict the particular judgement that Ofcom applied in the LLU Statement. The qualitative analysis of risk made by the parties indicates that Ofcom's estimate sits in a reasonable position

in the 'risk spectrum' (i.e. above the beta of utility comparators and below the beta of the BT Group) and we do not see a compelling argument for shifting the precise number slightly up, or as CPW would wish, slightly down."

6.202 Our interpretation of this statement is that our judgement was deemed reasonable at the time.

Openreach & Rest of BT debt premium and gearing – proposed in January 2011

6.203 In January 2011, we proposed to use a gearing ratio of 50%, to re-lever the asset beta for BT Group, Openreach and the Rest of BT. This reflected the average BT Group gearing over the period of beta measurement.

6.204 We proposed to use a debt premium range of 2-2.5% for BT Group, Openreach and the Rest of BT, with a point estimate of 2.25%.

6.205 In the January Consultation we asked:

Question 6.1: We welcome stakeholder's views on Ofcom's approach to estimating two different costs of capital for Openreach and Rest of BT.

Consultation responses

6.206 All respondents were supportive of our use of two different costs of capital for BT Group (Openreach and Rest of BT).

6.207 BT stated that it considers our approach to estimating two costs of capital is reasonable.

6.208 TTG and Sky stressed the importance of restricting the Openreach WACC to copper access services. They consider that the Rest of BT WACC should include the WACC for non-Openreach divisions as well as non-copper access services included in Openreach.

Openreach & Rest of BT Beta – TTG & Sky view

6.209 TTG argues that Openreach is more similar to network utilities than to the 'Rest of BT.' As a result it considers that a more appropriate Openreach asset beta range is 0.40 to 0.50, taking into account its lower estimate of network utility asset betas. This assessment is based on the following considerations:

- Demand: Whilst TTG accepts that LLU/WLR services have a higher risk than water/electricity, TTG argues it is much lower than for the Rest of BT.
- Prices: TTG argues that LLU/WLR price regulation substantially reduces price and margin volatility which does not exist for the Rest of BT.
- Costs: TTG states that copper access networks are reasonably mature and operating costs are predictable. It also claims that unlike the Rest of BT costs, historic investments are all fully recovered.

- Asset stranding: TTG argues that WLR/LLU business has a very low risk of asset stranding given the slow pace of technology change, innovation and volume change.
- 6.210 TTG comments on our approach to estimating Openreach's asset beta. TTG and Sky suggest that there was an error in our calculation of network utility benchmarks and argue that a range of 0.25-0.35 was a more appropriate asset beta range than 0.30-0.40 as proposed in our January consultation. This is based on using a debt beta of 0.125 (rather than Brattle's debt beta assumption of 0.15).
- 6.211 TTG considers that our positioning of the lower end of the Openreach range at the upper bound of the network utilities range is aggressive. It suggests that a lower bound of 0.05 above the network utilities range is appropriate.
- 6.212 Sky argues that once the debt beta of 0.2-0.25 is applied to the comparator companies, the upper bound of the range 0.25-0.35 becomes 0.40, therefore this is an appropriate lower bound for Openreach.
- 6.213 TTG applies a gearing assumption of 50% and a debt beta of 0.20-0.25 to its proposed range of 0.40 to 0.50 to result in an equity beta for Openreach of 0.60-0.75.
- 6.214 Sky argues that an asset beta range of 0.40-0.54 is appropriate, and combined with its other assumptions, the 'wedge' between BT Group and Openreach is greater than in 2009. It argues that this is reasonable in light of riskiness associated with Openreach's NGA roll-out which would form part of the 'Rest of BT'. Sky argues that it is more important to anchor the Openreach asset beta to the top of the comparator range than to maintain a 0.05 differential from BT group.

Openreach & Rest of BT debt premium and gearing

- 6.215 Sky considers that we have incorrectly applied the same cost of debt for Openreach as for BT as a whole. It states that Openreach would carry less risk than BT Group. It therefore recommends aiming lower in the range, if we consider that an estimate of Openreach's cost of debt would not be sufficiently robust.
- 6.216 TTG notes that gearing has a limited impact on the overall WACC. However, it argues that it would be more appropriate to assume a higher gearing for Openreach. This is because it considers Openreach is more similar in risk profile to network utilities and therefore can sustain a higher level of debt.

Our view

- 6.217 We will continue to use our methodology described above in order to estimate the WACC of BT Group. We will then estimate and apply two costs of capital, one for Openreach and one for the 'Rest of BT'.
- 6.218 As previously stated, what we describe as the cost of capital for Openreach is more specifically a rate for BT's copper access services business. This definition still applies, although we will continue to refer to it as the 'Openreach WACC.'
- 6.219 In the past we assumed Openreach's access services business accounted for around 50% of BT Group's mean capital employed (MCE). We continue to believe this is appropriate, based on BT's 2010 Current Cost Financial Statements. The access products that sit within Openreach account for just under half of the MCE of

the Group as a whole. Therefore, when disaggregating BT Group, we assume Openreach to be 50% of the Group, and the Rest of BT to be 50%.

Openreach&Rest of BT beta

6.220 TTG and Sky suggest that our starting point for estimating the Openreach asset beta should be the asset betas of comparable network utilities, rather than the BT Group asset beta. However, we note the comments of the Competition Commission, in its LLU Appeal Determination, where it opines on CPW's argument that utility comparators were a better starting point than BT Group:

"It is not clear that this is a significant issue as there is a reasonable amount of common ground between the parties on hierarchy of risk. All parties agree on the value for the BT Group beta; all parties also agree that Openreach is less risky than the BT Group as a whole, and that Openreach is more risky than conventional regulated utilities. Whether one begins the analysis with the observed BT Group beta or observed utility betas requires consideration of the differences in risk between the businesses and the impact of these differences on the positioning of Openreach's beta relative to the full comparator set.

Because Ofcom's approach makes more use of the information contained within the BT Group's beta, which reflects market data from the entire BT Group, including Openreach, we consider there to be strong arguments that the beta analysis should take the form of a disaggregation of the observed BT Group beta.....While we recognize the difficulties in disaggregating the BT Group beta, CPW has not put forward persuasive arguments in favour of preferring the comparator group approach, which has its own shortcomings (for example, this approach does not incorporate market information on Openreach and the comparator companies are not directly comparable as they are involved in different activities and are subject to different regulation).¹⁵⁹

6.221 Therefore, we believe our approach remains valid and have used the BT Group asset beta as the basis for estimating the Openreach asset beta.

6.222 In terms of systematic risk, we do not consider that Openreach is more similar to a network utility than to the Rest of BT for the purposes of determining the range for the Openreach beta. We have considered the arguments put forward by TTG and have considered other determinants of asset beta.

- Demand – We believe that TTG's assertion that Openreach is much more similar to the network utilities than the Rest of BT is overstated. It is not clear that demand for copper access services has a risk level 'much lower' than the Rest of BT and we consider our view of where Openreach sits relative to the utilities and the Rest of BT remains appropriate. This is because levels of demand for pure utility services (i.e. water, electricity etc.) which are considered 'essentials' by consumers tend to be very robust, and relatively impervious to changes in GDP levels. We consider that demand for telecommunications network services is also fairly robust. However, we do not think it is obvious that this demand is as certain

¹⁵⁹See para 2.360-2.361, p2-81, of http://www.competition-commission.org.uk/appeals/communications_act/llu_determination.pdf

as the products provided by the pure utility operators. In addition, we would not necessarily consider demand for services within the Rest of BT 'highly uncertain' and this is reflected in the beta of the BT Group as a whole.

- Price – There are a number of significant services within the Rest of BT which are subject to price regulation. For example, leased lines and network traffic charges. Therefore, we disagree that this makes Openreach more similar in risk to network utilities than the Rest of BT.
- Costs – The regulatory framework in the water industry, for example, underwrites the costs of providing the services as a result of their 'duty to finance'. No such duty exists for Ofcom in relation to BT. We think that Openreach is more risky than water on this basis.
- Asset stranding – We consider TTG's claim, that the risks of asset stranding in Openreach are 'very similar' to those in water/electricity, is an overstatement. We do not necessarily agree that all assets within Openreach are protected from asset stranding. For example, we do not think it is necessarily the case that, if there was a material shift in the number of users accessing broadband through mobile services, all of Openreach's investment in the regulated copper access base would be protected from stranding risk. In addition, we disagree that no regulatory price protection from stranding is afforded to the Rest of BT. We note above that several significant Rest of BT services are subject to price regulation.

6.223 We have considered the asset betas given in Table 2 of Brattle's report. Using the 1 year and 2 year asset betas versus the FTSE Allshare gives a range of 0.26-0.37 with a mid-point of 0.31.

6.224 We have also considered other determinants of asset beta in addition to those cited by TTG, in order to identify what the appropriate asset beta for Openreach is:

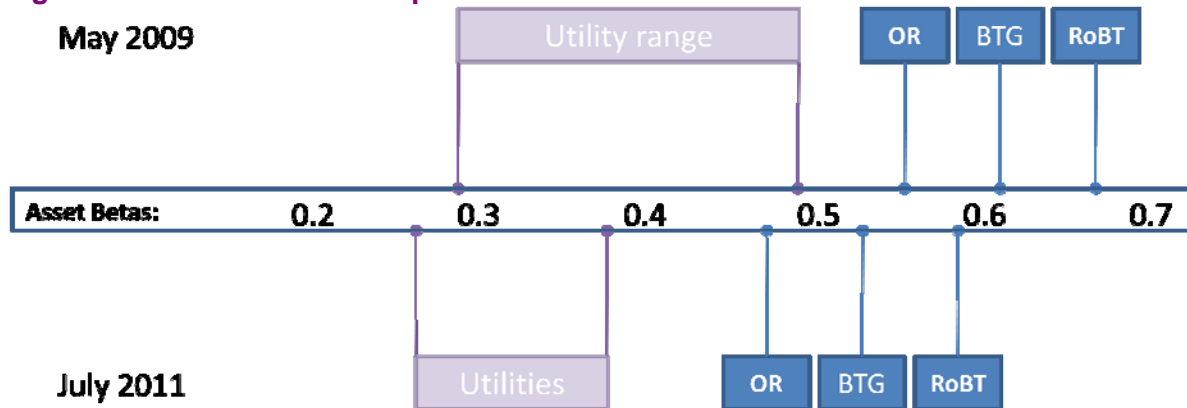
- Operating leverage¹⁶⁰ - an analysis of operating leverage for BT, Openreach and the 5 utility comparators over the last 5 years, suggests that BT has the highest operating leverage, followed by Openreach. The utility comparators tend to have lower operating leverage. However, we recognise that this analysis can be viewed as somewhat subjective since there are a number of accounting adjustments that could be made to the numbers in question in order to arrive at 'underlying' operating leverage.
- Volatility of returns – a similar analysis to that above (i.e. looking at profitability over the last 5 years) suggests that Openreach's returns have been less volatile than those of BT in recent years, in keeping with the suggestion that investors may perceive it as having lower systematic risk.

6.225 Taking into account the evidence provided by Brattle and the responses to our January Consultation, we believe an appropriate range for Openreach's asset beta would be 0.05 lower than our BT Group asset beta range. As shown in Figure 6.7 below, this results in a range of 0.40 - 0.53 with a mid-point of 0.47. We note that this results in a similar differential to the utility comparator group which we used in our May 2009 LLU statement.¹⁶¹

¹⁶⁰ By Operating Leverage, we mean the ratio between 'cash out' and 'cash in'

¹⁶¹ <http://stakeholders.ofcom.org.uk/binaries/consultations/openreachframework/statement/statement.pdf>

Figure 6.7: Asset beta: risk 'spectrum'



6.226 Finally, we have considered the implication for the Rest of BT asset beta, if we were to reduce the Openreach beta range. Whereas in the past we have focused on disaggregating Openreach from the BT Group using utility comparators, we ought to recognise that there may be comparators we can use to benchmark the Rest of BT asset beta. However, we note the Competition Commission's comments (set out above) which highlight the difficulties of finding reasonable comparator groups with which to compare Openreach data, and believe this is also true of the Rest of BT.

6.227 A reduction in the Openreach asset beta range to 0.40 to 0.50 as proposed by TTG would imply a Rest of BT asset beta of 0.70 - 0.78 (according to TTG).

6.228 This would suggest that the Rest of BT asset beta is higher than that of TTG and Colt,¹⁶² both of which operate telecoms businesses that employ a mixture of owned network assets and wholesale network assets. Although it is difficult to get a like-for-like comparator, given the demand characteristics of the Rest of BT (and BT Retail in particular), we would be uncomfortable supporting the view that the Rest of BT would be perceived as more risky than these alternative operators.

Openreach & Rest of BT debt premium and gearing

6.229 We have reconsidered our view on de-averaging the cost of debt and consider that it may be appropriate to differentiate between the cost of debt for Openreach and the Rest of BT.

6.230 In response to Sky and TTG's arguments that Openreach is likely to have a lower cost of debt compared to the BT Group as a whole, we agree that the lower systematic risk means that Openreach may be able to target a higher credit rating which could in turn result in a lower cost of raising finance. This would suggest that a lower cost of debt assumption is appropriate for Openreach.

6.231 As noted by the Competition Commission in the LLU Appeal Determination, this is very difficult to estimate because there are no direct comparators available for Openreach:

¹⁶² We estimate that the asset beta of TTG is of the order of 0.5, based on a 2 year estimate of equity beta versus the FTSE Allshare index, and gearing of around 25%. For Colt, which is 100% equity funded, we estimate the asset beta is a little higher, between 0.6 and 0.7.

“We note that there is no stand-alone proxy for the Openreach business from which to observe a capital structure or a debt premium.”¹⁶³

6.232 In order to estimate an appropriate debt premium for Openreach, we have considered the range of debt premium observed for the network utilities which is currently around 1-1.5%. We have also considered our range for the BT Group debt premium of 2-2.5%. We consider that applying a debt premium of 2% for Openreach and 2.5% for the Rest of BT would be a reasonable approximation of relative risk in relation to the debt premium.

6.233 This is consistent with our view of where Openreach sits on the ‘risk spectrum’ relative to utilities and to the Rest of BT which we apply in disaggregating the BT Group beta. As discussed from paragraph 6.222 above, we consider that in terms of systematic risk, Openreach is more similar to the Rest of BT than to the network utilities. As a result, we maintain the BT Group debt premium range of 2-2.5% with a point estimate of 2.25%.

6.234 In relation to TTG’s argument that we should calculate the WACC for Openreach using a higher gearing level, we refer to the Competition Commission’s view in the LLU Appeal Determination:

“In our view, a business with lower systematic risk will generally be able to support a higher level of debt, although this depends on the overall risk of the business, including the company-specific risk of default on debt. We accept that a business exposed to lower overall risk may be able to target a higher credit rating, and hence a lower cost of raising finance, even at a higher level of indebtedness. However, there is no universally accepted model of an ‘optimal’ capital structure which would permit us to calibrate the relationship between risk and gearing with any precision”.¹⁶⁴

6.235 We have taken into account the argument that a business with a lower systematic risk may have a lower cost of debt in our assessment of Openreach’s debt premium¹⁶⁵. However, we do not think there is sufficient evidence to additionally support the use of a higher level of gearing for Openreach. The Competition Commission found that we did not err in this regard in the LLU Appeal Determination.

Overall WACC

Our proposal

6.236 We proposed a pre-tax nominal WACC of 9.3% for the Rest of BT in our January Consultation. This reflected the mid-point of our range. This was equivalent to a pre-tax real WACC of 6.6%.

¹⁶³§2.367 http://www.competition-commission.org.uk/appeals/communications_act/llu_determination.pdf

¹⁶⁴§2.366-2.375 http://www.competition-commission.org.uk/appeals/communications_act/llu_determination.pdf

¹⁶⁵Note that while we consider it is appropriate to use different debt premium estimates for Openreach and the Rest of BT, we have not extended this approach to our analysis of debt betas. This is because we do not believe that the relationship between debt betas and debt premium is as technically robust to enable a read-across of proportionate changes in debt betas as a result of a change in the debt premium. We therefore use a debt range of 0.1-0.2 for both Openreach and the Rest of BT in line with the BT Group estimate discussed in paragraph 6.142 above.

Our response

6.237 As a result of the updated data and our consideration of the consultation responses, we have revised our estimate of the cost of capital for BT Group, Openreach and the Rest of BT.

6.238 Our revised WACC estimates are set out in Table 6.8.

Table 6.8: Revised WACC estimates

	Openreach	BT Group	Rest of BT
Pre-tax real WACC	5.6%	6.1%	6.5%
Pre-tax nominal WACC	8.8%	9.2%	9.7%

Which rate is appropriate for WBA?Our proposal

6.239 As discussed in our January Consultation, we noted that we disaggregate the BT Group WACC into Openreach and the Rest of BT. We discuss the methodology for this above. We consider that the most appropriate method for determining which rate to use is a consideration of the sensitivity of demand to the economic cycle.

6.240 As a result of our analysis of the responsiveness of the demand for WBA services to the economic cycle, we proposed that the Rest of BT rate is appropriate for WBA services. We considered a range of evidence such as:

- The ability of customers to switch to different packages whilst retaining a broadband service.
- The levels of broadband penetration.
- Empirical evidence such as econometric studies.
- Evidence from BT on WBA volumes and BT forecasts for WBA services.

6.241 In our January Consultation, we asked respondents:

Question 6.4: Do respondents agree with the proposal that the 'Rest of BT' rate should be used for the WBA charge control in Market 1?

Consultation responses

6.242 BT agrees that the 'Rest of BT WACC' should be used for WBA services.

6.243 TTG states that the Openreach WACC should be the WACC for only the copper access services and not for other business that form part of Openreach or other BT divisions.

Our response

6.244 We continue to believe that the Rest of BT rate is the appropriate rate for the WBA charge control. We have therefore applied the pre-tax real rate of 6.5% in calculation of the cost of the WBA service.

Section 7

Legal tests and duties

- 7.1 In the January Consultation, in Section 2, we set out how we have taken account of the general duties under section 3 of the Act and the European Community requirements for regulation in section 4 of the Act. We noted that in considering the options for the approach to the WBA charge control remedy in Market 1, we were taking into account our principle duty to further the interests of consumers in relevant markets, where appropriate by promoting competition. We also noted, with regard to the six European Community requirements regulation,¹⁶⁶ we had taken these into consideration in recommending our proposed approach and in particular we focused on the promotion of competition and encouraging network access and service interoperability, which are particularly relevant when considering WBA costs and charges.
- 7.2 In addition, in Section 7 of the January Consultation we set out why our proposals met the tests set out in section 88 and section 44 of the Act. We also consider that our recommendations we are now imposing do not impact on that assessment. For the purpose of this statement, we have reviewed whether our reasoning remains applicable. We have also considered whether the specific form of the charge control meets the relevant tests.

Section 88 tests

- 7.3 For reasons set out in paragraphs 7.4 to 7.10 of the January Consultation we consider that this charge control is appropriate for promoting efficiency, for promoting sustainable competition, that it confers the greatest possible benefits on users of public electronic communications services and that it ensures the correct incentives for investment and innovation are set. In particular:
- **Incentivise efficiency:** As set out in Section 3 of this statement, we consider there is a risk of adverse effects arising if BT sets some or all of its prices at an excessively high level, reducing benefits for end-users of WBA services. The charge control will work in conjunction with the cost orientation (basis of charges) condition which we imposed on BT in the 2010 WBA Statement. The basis of charges condition requires BT to set each price based on its costs in Market 1. However, the basis of charges condition is unlikely to incentivise BT to reduce its costs. In the absence of a charge control BT would be likely to be able to recover higher costs through higher prices charged at the wholesale level, which would ultimately be passed on in higher retail charges. The charge control addresses this as it is structured to incentivise efficiency improvements and/or investment by BT, which will be of benefit to all purchasers of WBA products (and, ultimately, could result in better products and lower prices for consumers).
 - **Sustainable competition:** The charge control will aim to promote sustainable competition by only encouraging equally or more efficient CPs to compete based on LLU. It will also aim to promote sustainable competition at the retail level by restricting BT's ability to price excessively with the aim of making it more difficult

¹⁶⁶ Which are: to promote competition; to contribute to the development of the internal market; to promote the interests of all EU citizens; not to favour one type of network, service or associated facility over another; to encourage network access and service interoperability in order to promote efficiency and competition; and, to encourage compliance with relevant international standards.

for other providers to compete. We expect that the benefits of this pricing will eventually flow through to end-users of WBA services.

- Possible benefits on consumers: We consider that the charge control will in particular further the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act. In particular, the charge control seeks to ensure the availability throughout the UK of a wide range of electronic communications services. In imposing the charge control, we have had regard to the desirability of promoting competition in relevant markets, the desirability of encouraging investment and innovation in relevant markets and the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.
- Correct incentives for investment and innovation: We consider that, in line with section 4 of the Act, the charge control will, in particular, promote competition in relation to the provision of electronic communications networks and will encourage the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.

Section 47 tests

7.4 For the reasons set out in paragraphs 7.2 to 7.3 and in section 3, 4 and 5 of the January Consultation, we consider that the charge control is objectively justifiable, is not unduly discriminatory, is proportionate and transparent. These reasons are:

- Objectively justifiable: As BT has entrenched market power in Market 1, it has the ability and the incentive to set prices above the competitive level and that BT's competitors at the retail level would be forced to pay these high prices in Market 1 in order to be able to provide retail services on a national basis. This charge control is necessary as it restricts BT's ability to charge excessive prices to CPs where BT currently faces no competitive or pricing constraints and where its pricing is unlikely to be constrained throughout the period of this review.
- Undue discrimination: The charge control does not unduly discriminate against BT as it is imposed only in a market where BT has been found to have SMP.
- Proportionate: The charge control is proportionate, as we have taken account of the need for BT to be able to make a return on its investment in Market 1 whilst acting to constrain BT's ability to set wholesale prices above the competitive level, which may result in consumers paying higher retail prices.¹⁶⁷
- Transparent: The charge control is transparent since our approach to setting charges, the mechanism for setting them and the charges themselves were discussed in detail in the January Consultation and, in relation to our final recommendations, in this statement¹⁶⁸.

¹⁶⁷ This is further addressed in sections 3, 4 and 5 above.

¹⁶⁸ We will also publishing the non-confidential version of the charge control RPI-X model in the second half of July 2011.

Conclusion

- 7.5 In Annex 5 of the January Consultation, we notified the Commission of our draft proposals for the setting of SMP services condition on BT under section 48(2) and 86 of the Communications Act 2003 (the Act). As we sent the draft notification before 25 May 2011, we now follow the notification process in place before the transposition of the revised framework.
- 7.6 This statement includes our legal Notification (Annex 1) under the Act in which we set out the SMP Conditions which constitute the legal instrument for implementing this charge control.

Annex 1

Legal Instrument: SMP Condition

NOTIFICATION UNDER SECTION 48(1) OF THE COMMUNICATIONS ACT 2003

The setting of SMP services conditions to be imposed upon BT applying section 45 of the Communications Act 2003, as a result of the market power determinations made under the Review of the wholesale broadband access markets published on 3 December 2010

Background

1. On 2 December 2010, the Office of Communications (“Ofcom”) published a statement entitled Review of the wholesale broadband access markets - Statement on market definition, market power determinations and remedies (the “2010 WBA Statement”) identifying a number of markets for the purpose of making market power determinations and setting SMP services conditions.
2. In Annex 1 to the 2010 WBA Statement Ofcom published a notification identifying, in accordance with section 79 of the Communications Act (the “Act”), certain markets including “wholesale broadband access provided in Market 1” and “wholesale broadband access provided in Market 2” in relation to both of which Ofcom determined that BT has significant market power, and “wholesale broadband access provided in the Hull area” in relation to which Ofcom determined that KCOM has significant market power.
3. As a result of these market power determinations, in accordance with section 48(1) of the Communication Act 2003, Ofcom set on BT and KCOM pursuant to section 45 of the Act the SMP services conditions set out in Schedules 1 to 3 to Annex 1 of the 2010 WBA Statement.
4. In the 2010 WBA Statement, Ofcom also decided to impose a charge control on BT in relation to the market “wholesale broadband access provided in Market 1”, and set out the reasons for doing so. Ofcom explained that it would consult separately on the detailed implementation of the charge control, and would separately notify the relevant legal instrument for imposing the charge control in a consultation to be published shortly after.
5. On 20 January 2011 Ofcom published a consultation document entitled ‘Proposals for WBA charge control, Consultation document and draft notification of decisions on charge control in WBA Market 1’ (‘the January Consultation’),¹⁶⁹ which included a publication at Annex 5 to that document of a notification under section 48(2) of the Act setting out Ofcom’s proposals to set new SMP conditions for the purpose of imposing on BT charge controls to address its significant market power. Accordingly, those proposals were made by reference to the market power determinations referred to in the 2010 WBA Statement.
6. Copies of the Consultation Notification were sent to the Secretary of State in accordance with section 50(1)(a) of the Act, as well as to the European Commission and to the regulatory authorities of every other Member State in accordance with

¹⁶⁹<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/summary/condoc.pdf>

sections 50(3) and 81 of the Act. Ofcom invited representations on its proposals by 31 March 2011.

7. By virtue of section 48(5) of the Act, Ofcom may give effect, with or without modifications, to a proposal with respect to which Ofcom has published a notification under section 48(2) of the Act only if—
 - a) Ofcom has considered every representation about the proposals duly made to it within the period specified in the notification; and
 - b) Ofcom has had regard to every international obligation of the United Kingdom (if any) which has been notified to it for this purpose by the Secretary of State.
8. Ofcom received seventeen responses to the Consultation Notification and has considered every such representation duly made. The Secretary of State has not notified Ofcom of any international obligation of the United Kingdom for this purpose.

Decisions

9. Ofcom hereby sets, in accordance with section 48(1) of the Act and in relation to the services referred in paragraph 4 above, the SMP services conditions implementing charge controls in relation to the market “wholesale broadband access provided in Market 1” as identified in the 2010 WBA Statement.
10. The SMP services condition is set out in Schedule 1 to this Notification.
11. The SMP services condition shall have effect from 17 August 2011.¹⁷⁰

Ofcom’s duties and tests

12. By imposing the SMP services condition in paragraph 4 above, OFCOM is setting SMP services conditions on BT by a notification which does not also make the market power determination by reference to which the condition is set. In accordance with section 86(1) of the Act, Ofcom is satisfied that there has been no material change in the markets referred to in paragraph 2 since the market power determinations referred to in the same paragraph were made.
13. The effect of these decisions, and the reasons for making these decisions, are set out in the statement document accompanying this notification and in the 2010 WBA Statement.
14. Ofcom considers that the setting of the SMP Charge Control Conditions comply with the requirements of sections 45 to 47, 87 and 88 of the Act as appropriate and relevant to them.
15. In imposing the conditions set out in this Notification, Ofcom has considered and acted in accordance with its general duties set out in section 3, and the six Community requirements set out in section 4, of the Act.
16. Copies of this Notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with section 50(1)(a) of the Act, as well as the European Commission in accordance with sections 50(2)(a) of the Act.

¹⁷⁰ The date which is 28 days from the day of the Notification under Section 48(1) of the Act

Interpretation

17. Except for references made to the identified services markets in this Notification as set out in the 2010 WBA Statement and except as otherwise defined in paragraph 14 of this Notification, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.
18. In this Notification:
- a) "BT" means British Telecommunications plc whose registered company number is 1800000, and any British Telecommunications plc subsidiary or holding company, or any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006
19. For the purpose of interpreting this Notification –
- a) Headings and titles shall be disregarded; and
 - b) The Interpretation Act 1978 (c.30) shall apply as if this Notification were an Act of Parliament.
20. Schedule 1 to this Notification shall form part of this Notification.



David Stewart

Competition Policy Director

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

20 July 2011

SCHEDULE 1

Setting of SMP services condition EAA7(A) as a result of the market power determination made by OFCOM in the 2010 WBA Statement in respect of the market “wholesale broadband access provided in Market 1” in which OFCOM has determined that BT has significant market power.

The following new SMP Condition EAA7(A) shall be set by identifying it after Condition EAA7 in Part 2 of the Schedule 1 of the WBA Notification.

“Condition EAA7(A) – Charge control

EAA7(A).1 Without prejudice to the generality of Condition EAA7, and subject to paragraphs EAA7(A).3 to EAA7(A).9, the Dominant Provider shall take all reasonable steps to secure that, at the end of each Relevant Year, the Percentage Change (determined in accordance with paragraphs EAA7(A).4, EAA7(A).5 and EAA7(A).6) in:

- a) the aggregate of charges for all of the services listed in the Annex to this condition;
- b) the charge for the service listed in point 4 of the Annex to this condition;
- c) the charge for the service listed in point 5 of the Annex to this condition;
- d) the charge for the service listed in point 6 of the Annex to this condition; and
- e) the charge for the service listed in point 8 of the Annex to this condition,

is not more than the Controlling Percentage (determined in accordance with paragraph EAA7(A).9).

EAA7(A).2 The Dominant Provider shall not charge more than:

- a) for the service listed in point 7 of the Annex to this condition, the charge for the Input Service.

EAA7(A).3 For the purpose of complying with paragraph EAA7(A).1, the Dominant Provider shall take all reasonable steps to secure that the revenue it accrues as a result of all individual Charge Changes during any Relevant Year shall be no more than that which it would have accrued had all Charge Changes been made:

- a) for the First Relevant Year, on 17 August 2011¹⁷¹ of that year; and
- b) for each of the Second Relevant Year and the Third Relevant Year, on 1 April of that year.

The Dominant Provider shall be deemed to have satisfied this obligation where, in the case of a single Charge Change in the Relevant Year, the following formula is satisfied:

$$RC(1 - D) \leq TRC$$

where:

¹⁷¹ The date of coming into effect of the condition, as set out at paragraph 11 above

RC is the revenue change associated with the single Charge Change made in the Relevant Year, calculated as the relevant Percentage Change immediately following the Charge Change multiplied by the revenue accrued during the Prior Financial Year;

TRC is the target revenue change required in the Relevant Year to achieve compliance with paragraph EAA7(A).1, calculated by the Percentage Change required in the Relevant Year to achieve compliance with paragraph EAA7(A).1 multiplied by the revenue accrued during the Prior Financial Year; and

D is the elapsed proportion of the Relevant Year in question, calculated as:

- a) for the First Relevant Year, the date on which the Charge Change takes effect, expressed as a numeric entity on a scale ranging from 17 August¹⁷² = 0 to 31 March = 227¹⁷³, divided by 228¹⁷⁴; and
- b) for each of the Second Relevant Year and the Third Relevant Year, the date on which the Charge Change takes effect, expressed as a numeric entity on a scale ranging from 1 April = 0 to 31 March = 364, divided by 365;

In the case of multiple Charge Changes in the Relevant Year the revenue change associated with each Charge Change is in effect measured as a proportion of the Relevant Year. The revenue accrued by all the Charge Changes taken together should not, in aggregate, be more than the target revenue required in the Relevant Year as defined above.

EAA7(A).4 The Percentage Change for the purpose of each of the categories of services specified (each of which is referred to in this paragraph as a “single charge category”) in paragraphs EAA7(A).1(e) shall be calculated for the purposes of complying with paragraph EAA7(A).1 by employing the following formula:

$$C_{t,i} = \frac{p_{t,i} - p_{0,i}}{p_{0,i}}$$

A1.2 Where

$C_{t,i}$ is the Percentage Change in charges for the specific service i in the single charge category in question at a particular time t during the Relevant Year;

$p_{0,i}$ is the published charge made by the Dominant Provider for the specific service i in the single charge category in question immediately preceding the Relevant Year excluding any discounts offered by the Dominant Provider; and

$p_{t,i}$ is the published charge made by the Dominant Provider for the specific service in the single charge category in question at the time t during the Relevant Year excluding any discounts offered by the Dominant Provider.

EAA7(A).5 The Percentage Change for the purpose of the category of services specified (which is referred to in this paragraph as a “single charge category”) in paragraph EAA7(A).1(b), EAA7(A).1(c) and EAA7(A).1(d) shall be calculated for the purposes of complying with paragraph EAA7(A).1 by employing the following formula:

¹⁷²The date of coming into effect of the condition, as set out at paragraph 11 above

¹⁷³ The number of days between start date of the charge control and 31 March 2012, minus 1

¹⁷⁴ The number of days between start date of the charge control and 31 March 2012

$$C_{t,i} = \frac{\{p_{t,i}-q_{t,i}\}-\{p_{0,i}-q_{0,i}\}}{p_{0,i}-q_{0,i}}$$

Where

$C_{t,i}$ is the Percentage Change in charges for the specific service i in the single charge category at a particular time t during the Relevant Year;

$p_{0,i}$ is the published charge made by the Dominant Provider for the specific service i in the single charge category immediately preceding the Relevant Year excluding any discounts offered by the Dominant Provider;

$p_{t,i}$ is the published charge made by the Dominant Provider for the specific service i in the single charge category at the time t during the Relevant Year excluding any discounts offered by the Dominant Provider;

$q_{0,i}$ is the published charge made by the Dominant Provider to itself for the Input Service immediately preceding the Relevant Year excluding any discounts offered by the Dominant Provider; and

$q_{t,i}$ is the published charge made by the Dominant Provider to itself for the Input Service at the time t during the Relevant Year excluding any discounts offered by the Dominant Provider.

EAA7(A).6 The Percentage Change for the purpose of the category of services specified in paragraph EAA7(A).1(a) (which is referred to in this paragraph as a “basket”) shall be calculated by employing the following formula:

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

where:

C_t is the Percentage Change in the aggregate of charges for the services in the basket at a particular time t during the Relevant Year;

n is the number of individual services in the basket;

i is a number from 1 to n for each of the n individual services in the basket;

R_i is the revenue accrued during the Prior Financial Year in respect of the individual service i that forms part of the basket, calculated to exclude any discounts offered by the Dominant Provider;

S_i is the amount of the payments made by the Dominant Provider to itself for the Input Service during the Prior Financial Year, calculated to exclude any discounts provided by the Dominant Provider to itself;

$p_{0,i}$ is the published charge made by the Dominant Provider for the individual service i that forms part of the basket immediately preceding the Relevant Year, excluding any discounts offered by the Dominant Provider;

$p_{t,i}$ is the published charge made by the Dominant Provider for the individual service i that forms part of the basket at the time t during the Relevant Year excluding any discounts offered by the Dominant Provider.

$q_{0,i}$ is the published charge made by the Dominant Provider to itself for the Input Service immediately preceding the Relevant Year excluding any discounts offered by the Dominant Provider; and

$q_{t,i}$ is the published charge made by the Dominant Provider to itself for the Input Service at the time t during the Relevant Year excluding any discounts offered by the Dominant Provider.

EAA7(A).7 Where the Percentage Change in the Relevant Year is less than the Controlling Percentage (the “Excess”) then the Controlling Percentage for the following Relevant Year shall be determined in accordance with paragraph EAA7(A).4, EAA7(A).5 or EAA7(A).6, as applicable, but increased by the absolute value of the Excess.

EAA7(A).8 Where the Percentage Change in the Relevant Year is more than the Controlling Percentage (the “Deficiency”) then the Controlling Percentage for the following Relevant Year shall be determined in accordance with paragraph EAA7(A).4, EAA7(A).5 or EAA7(A).6, as applicable, but decreased by the absolute value of the Deficiency.

EAA7(A).9 Subject to paragraphs EAA7(A).7 and EAA7(A).8, the Controlling Percentage is the amount of the change in the Retail Prices Index in the period of 12 months ending on 31 December immediately before the beginning of that Year expressed as a percentage (rounded to two decimal places) of that Index as at the beginning of that period:

- 1) for the First Relevant Year,
 - a) for the basket of services specified in paragraph EAA7(A).1 (a), decreased by 12.00¹⁷⁵ percentage points;
 - b) for the service specified in paragraph EAA7(A).1 (b), decreased by zero percentage points;
 - c) for the service specified in paragraph EAA7(A).1 (c), decreased by zero percentage points;
 - d) for the service specified in paragraph EAA7(A).1(d), decreased by zero percentage points;
 - e) for the service specified in paragraph EAA7(A).1(e), decreased by zero percentage points
- 2) for each of the Second Relevant Year and the Third Relevant Year,

¹⁷⁵Value of $X1 = (1 + \text{change in RPI}) - [\text{Sum}\{w_i * P_{m,i}\} / \text{Sum}\{w_i * P_{0,i}\}] * (1 + \text{change in RPI} - X)$, where w_i is the weight of the service in the basket as calculated in paragraph EAA7(A).6; $P_{0,i}$ is the published charge made by the Dominant Provider for the individual service i that forms part of the basket immediately preceding the Relevant Year, excluding any discounts offered by the Dominant Provider; $P_{m,i}$ is the published charge made by the Dominant Provider for the individual service i that forms part of the basket on 1 April 2011, excluding any discounts offered by the Dominant Provider; change in RPI is the change in the Retail Prices Index in the period of 12 months ending on 31 December 2010 expressed as a percentage (rounded to two decimal places) of that Index as at the beginning of that period; and X is value set out in paragraph EAA7(A).9 (2)(a).

- a) for the basket of services specified in paragraph EAA7(A).1 (a), decreased by 12.00% percentage points;
- b) for the service specified in paragraph EAA7(A).1 (b), decreased by zero percentage points;
- c) for the service specified in paragraph EAA7(A).1 (c), decreased by zero percentage points;
- d) for the service specified in paragraph EAA7(A).1(d), decreased by zero percentage points;
- e) for the service specified in paragraph EAA7(A).1(e), decreased by zero percentage points

EAA7(A).10 Where:

- a) the Dominant Provider makes a material change (other than to a Charge) to any Charge Controlled Service for which a Charge is charged;
- b) the Dominant Provider makes a change to the date on which its financial year ends; or
- c) there is a material change in the basis of the Retail Prices Index,

paragraphs EAA7(A).1 to EAA7(A).9 shall have effect subject to such reasonable adjustment to take account of the change as Ofcom may direct to be appropriate in the circumstances. For the purposes of this paragraph, a material change to the Charge Controlled Service includes (but is not limited to) the introduction of a new product and/or service wholly or substantially in substitution for an existing Charge Controlled Service.

EAA7(A).11 The Dominant Provider shall record, maintain and supply to Ofcom in writing, no later than three months after the end of each Relevant Year, the data necessary for Ofcom to monitor compliance of the Dominant Provider with the price control. The data shall include:

- a) pursuant to Condition EAA7(A).4, EAA7(A).5 or EAA7(A).6, as applicable, the calculated Percentage Change relating to the services as listed in EAA7(A).1(a) to EAA7(A).1(e);
- b) pursuant to Condition EAA7(A).3, calculation of the revenue change as a result of all individual Charge Changes during any Relevant Year compared to the target revenue change;
- c) All relevant data the Dominant Provider used in the calculation of the Percentage Change pursuant to Conditions EAA7(A).4, EAA7(A).5 or EAA7(A).6, as applicable, and the revenue change and target revenue change pursuant to Condition EAA7(A).3;
- d) Other data necessary for monitoring compliance with the charge control.

EAA7(A).12 If it appears to Ofcom that the Dominant Provider is likely to fail to secure that the Percentage Change does not exceed the Controlling Percentage for the Third Relevant Year, the Dominant Provider shall make such adjustment to any of its charges for the provision of the services listed in EAA7(A).1(a) to EAA7(A).1(e) and by such day in that

Relevant Year (or if appropriate in Ofcom's opinion, by such day that falls after the end of that Relevant Year) as Ofcom may direct for the purpose of avoiding such a failure;

EAA7(A).13 Paragraphs EAA7(A).1 to EAA7(A).9 shall not apply to such extent as Ofcom may direct.

EAA7(A).14 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

EAA7(A).15 In this Condition:

- a) "Charge" means for the purposes of paragraph EAA7(A).10, the charge (being in all cases the amounts offered or charged by the Dominant Provider) to a Communications Provider for the Charge Controlled Service;
- b) "Charge Change" means a change to any of the charges for the provision of the services as listed in EAA7(A).1(a) to EAA7(A).1(e);
- c) "Charge Controlled Service" means a service or basket of services listed in EAA7(A).1(a) to EAA7(A).1(e);
- d) "Charge Controlled Product" means any wholesale broadband access product supplied by the Dominant Provider to communications providers (including itself) based on IP connectivity that allows those communications providers to connect at a number of handover points to the Dominant Provider's network in order to provide a service to end users with an access connection capable of supporting downstream speeds of up to 8Mb/s, such product being currently known as IPStream Connect Max and IPStream Connect Max Premium..
- e) "Controlling Percentage" is to be determined in accordance with paragraph EAA7(A).9;
- f) "Input Service" means, in relation to each service listed in the Annex to this condition, the service provided by the Dominant Provider to itself and made available to other parties, which the Dominant Provider uses as a specific input for each such service listed in the Annex to this condition;
- g) "Ofcom" means the Office of Communications;
- h) "Percentage Change" has the meaning given to it in paragraph EAA7(A).4, EAA7(A).5 or EAA7(A).6, as applicable;
- i) "Prior Financial Year" means the period of 12 months ending on 31 March immediately preceding the Relevant Year in question;
- j) "Relevant Year" means each of the following three periods:
 - (1) the period beginning on 17 August 2011 and ending on 31 March 2012 (the "First Relevant Year");
 - (2) the period beginning on 1 April 2012 and ending on 31 March 2013 (the "Second Relevant Year"); and
 - (3) the period beginning on 1 April 2013 and ending on 31 March 2014 (the "Third Relevant Year").

- k) "Retail Prices Index" means the index of retail prices compiled by an agency or a public body on behalf of Her Majesty's Government or a governmental department (which is the Office of National Statistics at the time of publication of this Notification) from time to time in respect of all items.

Annex to condition EAA7(A)

Services subject to the charge control pursuant to paragraphs EAA7(A).1 (a) to EAA7(A).1 (e).

1. End User Access Connection Services, i.e. any service required in order to provide the initial connection of an end user to the Dominant Provider's broadband network for the purposes of providing the Charge Controlled Product, such service currently being known as IPStream Connect Max and Max Premium End User Access connection.
2. End User Access Rental Services, i.e. any service related to the ongoing provision of a connection of an end user to the Dominant Provider's broadband network for the purposes of providing the Charge Controlled Product, such service currently being known as IPStream Connect Max and Max Premium End User Access rental.
3. End User Bandwidth Rental Services, i.e. any service in addition to End User Access Rental Services provided on an End User basis and related to the ongoing provision of End User bandwidth by the Dominant Provider to a communications provider, for the purposes of providing the Charge Controlled Product, such service currently being known as IPStream Connect Max and Max Premium EU bandwidth.
4. End User Migration Services, i.e. any service required to migrate an end user of a product provided using the Charge Controlled Product from one communications provider to another (including to or from a retail division or subsidiary of the Dominant Provider) or between a product provided using the Charge Controlled Product and a product provided using other wholesale broadband access services provided by the Dominant Provider, such service currently being known as BT IPStream Connect End User Transfer.
5. End User Re-grade Services, i.e. any service required to change the upstream or downstream speed of the connection provided to the end user, where the end user continues to be connected to the same communications provider, where all other features of the service provided by the Dominant Provider to the communications provider stay the same, and where the effect of the change of upstream or downstream speed is such that the service provided by the Dominant Provider is the Charge Controlled Product either prior to or after the re-grade. This would include, for example, re-grading from a lower speed to achieve a downstream speed of up to 8Mbit/s or by re-grading between products that provide a downstream speed of up to 8Mbit/s in order to achieve a different maximum theoretical upstream speed, such service currently being known as BT IPStream Connect End User Re-grade Charges.
6. End User Cancellation Services, i.e. any service required to cancel an order for an End User Access Connection service during the course of connecting that service but prior to the service connection being completed, such service currently being known as IPStream Connect ADSL cancellation.
7. End User Cease Services, i.e. any service required to disconnect an end user from a product provided using the Charge Controlled Product, such service currently being known as IPStream Connect Max and Max Premium End User Access cease.
8. Contracted Bandwidth Rental Services, i.e. any service related to the provision of bandwidth purchased by a communications provider at each of the handover points for the purpose of providing a product to end users which uses the Charge Controlled Product (either individually or in aggregate across handover points), irrespective of the actual bandwidth used, such service currently being known as IPStream Connect Contracted bandwidth per Mbit/s per node.

9. Communications Provider Handover Rental Services, i.e. any service related to the connection by the communications provider at each of the handover locations required to connect to the Charge Controlled Product, such service currently being known as IPStream Connect Communications Provider (CP) Handover.

10. Interconnect Links, i.e. any service provided by the Dominant Provider to connect between any of the handover points of the Charge Controlled Product and the communications provider's network, such service currently being known as IPStream Connect Interconnect Links.

Annex 2

List of respondents to consultation

- A2.1 A total of five responses were received from Communications Providers. Of these, one respondent asked for its response to be regarded as confidential and four agreed for their full responses, or redacted versions, to be published.
- A2.2 Non-confidential responses were received from:
- BT;
 - Cable & Wireless Worldwide (C&WW);
 - Sky; and
 - TalkTalk Group (TTG)
- A2.3 We also received responses from:
- Communication Worker Union (CWU)
 - Four local Councils;
 - Six individuals; and
 - A business in a rural area.
- A2.4 Furthermore, BT, Sky and TTG also submitted their non-confidential responses to the cost of capital questions.
- A2.5 These non-confidential responses can be found on our website at:
<http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/?showResponses=true&pageNum=2>

Annex 3

Treatment of pension costs

Introduction

- A3.1 We published our pensions review statement ('the Pensions Review')¹⁷⁶ in December 2010. This contained our pensions cost guidelines ('the Pension Guidelines') which 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.
- A3.2 In summary, the Pension Guidelines were set out as follows:
- We intend to disallow any deficit repair payments¹⁷⁷ when setting regulated charges and similarly ignore any impact of any pension holidays BT may choose to take.
 - We intend to use statutory reported accounting costs as a measure of ongoing service costs when assessing pension costs as part of regulated charges.
 - We intend to make no adjustment to the cost of capital to account for the effect of a defined benefit pension scheme when setting regulated charges.
- A3.3 We noted that the aim of the Pension Guidelines was to establish, as much as is possible, transparency and legal certainty about our general policy position on the issues covered by them.
- A3.4 In the Pensions Review, we stated our intention to apply the Pension Guidelines in the circumstances referred to in paragraph A3.1 above where relevant to the carrying out of our functions under Part 2 of the Communications Act ('the Act'). For example, this includes the imposition of an SMP condition such as in the WBA charge control. We explained that, while we expect the Pension Guidelines to form an important consideration in relevant cases, we intend to apply these on a case-by-case and will always act consistently with our duties and applicable legal tests under the Act. Although the Pension Guidelines set out the approach that we would normally expect to take, each case will be considered on its own merits.
- A3.5 As specified in the Pensions Review,¹⁷⁸ if we decide to depart from the Pension Guidelines in a particular case, we will set out our reasons for doing so. As a general rule, unless we consider that there has been a material change in the circumstances and background considered as part of our review, we are not expecting to depart from the Pension Guidelines.
- A3.6 BT has reiterated a number of arguments which it raised as part of the Pensions Review, in response to our January Consultation.¹⁷⁹ BT's points are all related to

¹⁷⁶<http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/statement/statement.pdf>

¹⁷⁷By "pension deficit payments" we mean the cash amounts, agreed with the pension scheme trustees, which the company will pay over time, intended to eliminate a pension deficit.

¹⁷⁸ See Paragraphs 3.13 and 8.15 plus Annex 1.

¹⁷⁹<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/bt-annex-3.pdf> .

our first Guideline (disallowing deficit repair payments when setting regulated charges).¹⁸⁰ BT acknowledges this:

“BT refers Ofcom again to its two responses submitted in the course of the pensions guidelines consultation. BT continues to rely upon the points made in these submissions and the accompanying report by KPMG.”

- A3.7 We have already considered BT’s arguments as part of our Pensions Review. BT has not provided any new evidence to demonstrate that there has been a material change in the circumstances since the Pensions Review concluded in December 2010.
- A3.8 In addition, both TTG and Sky restate the arguments which they raised in relation to our third Guideline (making no adjustment to the cost of capital to reflect the defined benefit pension scheme). As these arguments relate to the cost of capital, they are considered in Section 6 of this statement.
- A3.9 We have considered the circumstances surrounding the Pensions Review, for example the size and the scale of the scheme, and the regulatory risks associated with the scheme. We do not believe that a material change has occurred which would warrant an approach other than that outlined in our Pension Guidelines being taken in relation to pension costs.
- A3.10 We do not consider that there are any factors relating to the WBA charge control in particular which would support the adoption of an approach other than expressed in our Guidelines.
- A3.11 As BT acknowledges, the arguments it raised in response to the WBA charge control are not new. We consider that these arguments have been dealt with either in the consultations or statement of the Pensions Review. For ease of reference, we summarise our view on the points reiterated by BT as part of its response in this annex. However, we also refer readers to the appropriate sections of the pensions review for our detailed analysis.¹⁸¹

Analysis of pensions in WBA

What we have said previously

- A3.12 In line with our Guidelines, we did not include any deficit repair payments when assessing the costs of providing the WBA service.

BT response

- A3.13 In its response to our January Consultation, BT notes that pension costs weren’t considered in any detail and that as a result, it assumes Ofcom is proposing to apply the Pension Guidelines directly to WBA regulated charges without adaptation.

Ofcom view

- A3.14 In the WBA charge control analysis, we conducted detailed analysis of the costs of providing the WBA service. Within the pensions review, we explained that the

¹⁸⁰ See Pension Review (cited above) page 59.

¹⁸¹ In particular, see Sections 3, 4 and 5 of the Pensions Review (cited above).

Pension Guidelines set out the approach that Ofcom would normally expect to take. We stated that we intend to have regard to the specific facts relevant to each case. However, unless we consider that there has been a material change in circumstances and background since the publication of the statement, we would not expect to reconsider the general issues.

- A3.15 BT did not raise the issue of recovery of deficit repair payments during this process. As this is the first time BT has discussed the issue of deficit repair payments in relation to the WBA charge control, we are dealing with it at the first available opportunity. As explained above, we do not consider that there has been a material change in circumstances or background which requires reconsideration of the general issues. We therefore intend to apply the Guidelines to the WBA charge control.

Interpretation of the six principles

What we said previously

- A3.16 The key components of our assessment framework used to assess pension costs as part of the Pensions Review were:

- An assessment of regulatory consistency, and
- An assessment of pension costs against the six principles of pricing and cost recovery ('the Six Principles').¹⁸²

- A3.17 The purpose of using this assessment framework was to identify whether our current approach, which includes not allowing the recovery of deficit repair payments through regulated charges, remained appropriate and, in particular consistent with our duties.

- A3.18 In the Pensions Review we concluded that the Six Principles did not suggest that our current approach to the treatment of pension deficit payments was incorrect.

BT response

- A3.19 BT notes that our assessment of pensions costs against the Six Principles evolved over the consultation process, but disagree that they support exclusion of deficit repair payments.

- A3.20 BT notes that in the first consultation of the Pensions Review ('the First Pension Review Consultation'),¹⁸³ we spoke of the assessment against the Six Principles positively 'supporting' the exclusion of PDRs. However, it states that the conclusion in the pensions review was limited to a statement that the Six Principles "do not suggest" that the approach it is maintaining for reasons of 'regulatory consistency' was incorrect.

- A3.21 BT claims that the Competition Commission has indicated that the relevant forward-looking costs are those which would be incurred by an efficient company in BT's

¹⁸²The most recent use of the Six Principles is cited below; this reference also cites the references for previous uses of the 6 principles.

http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_01004/cwdispute.pdf

¹⁸³<http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/summary/pensions.pdf>

position i.e. insofar as they represent a cost of doing business for BT and were efficiently incurred at the time, deficit repair payments should be allowed to be recovered in regulated charges.

Ofcom view

- A3.22 In the First Pension Review Consultation, we set out our initial views on the Six Principles of pricing and cost recovery. The purpose of setting out our preliminary thoughts was to encourage stakeholder responses on the suitability and interpretation of the Six Principles. We initially focused on the principles of cost causation, cost minimisation, distribution of benefits and practicability.
- A3.23 Having received responses to the First Pension Review Consultation, and having further developed our thinking in relation to the Six Principles, we set out an Ofcom view of the way each of the Six Principles applied to pension costs. We refined our views on the application of the Six Principles in light of the responses we received and the additional consideration we gave to the issues.
- A3.24 For example, we previously did not take a view on the issue of ‘effective competition’, however given the number of responses we received, it was clear that this was an important consideration. In our second consultation of the Pensions Review (‘the Second Pension Review Consultation’),¹⁸⁴ we stated that we were minded to conclude that deficit repair payments should not form part of the regulatory cost stack, however we again sought stakeholder views on our interpretation and application of the Six Principles.
- A3.25 Following our assessment of stakeholder responses, we concluded that the Six Principles did not suggest that our current approach to the treatment of pension deficit repair payments was incorrect. As stated at the outset of the consultation process, the purpose of this review was to review our treatment of pension costs. As stated in the consultations, in order to move away from our current approach we would require compelling evidence that our current approach is incorrect. Our consideration of deficit repair payments against our assessment framework (which considers regulatory consistency and the Six Principles) leads us to our Pension Guidelines.
- A3.26 We set out the reasons for arriving at this conclusion in the Pensions Review. However, we deal with BT’s specific comments raised on the Six Principles in the WBA consultation in the following paragraphs.

Cost causation

What we said previously

- A3.27 The principle of cost causation states that costs should be recovered from those whose actions cause the costs to be incurred.
- A3.28 In the Pensions Review, we said that we were minded to conclude that the principle of cost causation does not support the recovery of pension deficit payments from regulated charges. We said that deficit repair payments would not form part of the costs incurred by a new entrant and so would not be considered to be part of the forward-looking costs of the services that BT provides.

¹⁸⁴<http://stakeholders.ofcom.org.uk/consultations/pensions-review/>

BT response

- A3.29 In relation to the cost causation principle, BT claims that we agree “*that it is not always appropriate to take a strict view of the ‘efficient operator’ as a hypothetical new entrant*” when considering the question of efficient forward looking costs.
- A3.30 Bt states that in saying this we are in effect agreeing with the Competition Commission’s view in the LLU Appeal Determination¹⁸⁵ that the relevant cost benchmark in a charge control should be the costs that would be incurred by an efficient operator in BT’s position.
- A3.31 In relation to the argument that costs have already been recovered once, BT argues that forecasts do not sufficiently take into account new information being available in later years. BT claims that this makes pension costs unique, therefore we cannot rely on the fact that costs have been recovered once to support our argument.

Ofcom view

- A3.32 We consider that it is important to again set out the context in which the Competition Commission’s comments were made.
- A3.33 In its determination, the Competition Commission stated that the relevant benchmark is an efficient operator in BT’s position. This was in relation to the use of the technology to be considered when setting WLR charges. The Competition Commission agreed that this was a reasonable approach and rejected CPW’s arguments that we should have assessed costs on the basis of a new entrant rolling out a next generation network (NGN).
- A3.34 We have followed a consistent approach to this in the WBA charge control, basing costs on BT’s 20CN rather than the costs for ADSL2+ for example. The pension deficit question is not related to a choice of technology therefore we do not think that the Competition Commission’s statement can be indicative of the view they would take on this issue.
- A3.35 In our Pensions Review, we commented on the Competition Commission statement on the LLU Appeal Determination. We agreed that it is not always appropriate to take a strict view of the “efficient operator” as a hypothetical new entrant. That is not to say that in this instance we think that the relevant cost benchmark is an efficient operator in BT’s position. We noted that it is important to look at the context of the decision and consider the importance of consistency in risks and rewards and in applying charge control principles. This is what we have done in arriving at our Pension Guidelines.
- A3.36 We noted earlier that cost causation is important because it is usually efficient for those causing costs to be incurred also to bear them. It is clear that current use of WBA does not cause the pre-existing pension deficit or any repair payments which may be made. If pension deficit repair payments were included in charges, prices would be raised above the level of the costs actually incurred in the provision of WBA. That could lead to a reduction in demand which would be inefficient in the sense that some users who would be willing to pay the costs actually incurred do not use WBA as a result.

¹⁸⁵http://www.catribunal.org.uk/files/1.1111_Carphone_Warehouse_CC_Determination_310810.pdf

A3.37 Any efficiency-based argument for inclusion of pension deficit repair payments in charges would therefore presumably depend on its effect on dynamic efficiency. Dynamic efficiency is most likely to be enhanced by the maintenance of a consistent and stable regulatory framework over time – for BT and its customers. As we have explained, considerations of this sort strongly support not including deficit repair payments in regulated charges.

A3.38 We discuss BT's arguments that pension costs are unique in more detail below.

Cost minimisation

What we said previously

A3.39 The cost minimisation principle states that the mechanism for cost recovery should ensure that there are strong incentives to minimise costs.

A3.40 In the Pensions Review, we stated that incentives to minimise costs are strongest when BT bears the costs it incurs.

BT response

A3.41 Regarding our interpretation of the cost minimisation principle, BT noted that we conclude that any amount of pass-through of deficit repair payments would reduce BT's incentives to minimise these costs. It argued that this is incorrect because it is incentivised to minimise its salary and pensions costs in order to remain competitive where it is unregulated. Where it is regulated, it has an incentive to ensure that costs are deemed 'efficiently incurred' and thus recoverable, as well as to contribute to meeting any efficiency targets that Ofcom may impose in charge controls on BT's regulated services.

A3.42 BT stated that the Competition Commission, in its decision in the Bristol Water ('BW') case,¹⁸⁶ considered that a sufficient incentive was secured by the inability to recover just 10% of deficit repair payments. BT argued that we failed to explain why the consideration of cost minimisation justifies the exclusion of the entirety of BT's deficit repair payments.

Ofcom view

A3.43 We considered the Competition Commission's determination in the BW case in section 3 of the Pensions Review. We agreed with Ofwat and the Competition Commission that passing on full deficit repair payments to customers would remove the incentives to manage the pension liability and minimise costs. As discussed above, it appears clear to us that the Competition Commission had regard to Ofwat's duty to finance and therefore do not consider that we should necessarily take the same approach in deciding whether our current approach to pension costs remains appropriate.

A3.44 We acknowledged that part of the deficit repair payments related to the unregulated business, therefore a degree of incentives to minimise costs would be retained. However it is clear that any amount of pass-through would tend to reduce incentives, relative to a situation with no pass-through.

¹⁸⁶ http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_final_report.pdf

- A3.45 In relation to BT's argument that we do not explain why cost minimisation justifies the exclusion of all of BT pension costs, we refer to our consideration of the treatment of pension costs against our assessment framework in the pensions review. We considered the importance of regulatory consistency, and assessed our Pension Guidelines against an analytical framework to ensure that we were not maintaining an incorrect position.
- A3.46 The Six Principles are a framework which have been used to assess pension costs and determine an outcome that is consistent with our duties. We have stated that we do not think there is one uniquely correct approach to reflecting pension costs, therefore consistency is an important consideration.
- A3.47 We remain of the view that incentives to minimise costs are strongest when BT bears the costs it incurs. It is true that, on its own, this might not lead to full exclusion if the other principles suggested that pension deficit repair costs should be included in charges. We have therefore provided our view on each of the Six Principles, and conclude that, taking all the Six Principles into account together, they do not suggest that our current approach is incorrect.

Effective competition

What we said previously

- A3.48 The principle of effective competition states that the mechanism for cost recovery should not undermine or weaken the pressures for effective competition.
- A3.49 We explained that to the extent that any increase in charges would weaken competition this could suggest that we exclude deficit repair payments from charges.

BT response

- A3.50 BT argues that our current approach to deficit repair payments is likely to distort competition, impacting on BT's ability to compete and providing an undue advantage to its competitors.
- A3.51 BT claims that our approach deprives BT of a relevant element of the cost base of wholesale services, thereby undermining efficient and sustainable competition and discouraging investment and innovation in those services.
- A3.52 According to BT, the effect is to increase the cost base that must be recovered in respect of services which are not subject to price controls.
- A3.53 BT also states that we have not carried out a market assessment to enable us to conclude that pension costs would not be partly passed on to consumers. It argues this could be either directly in the form of higher prices for unregulated products, or indirectly in the form of reduced innovation and investment for those unregulated services, or through a combination of both.

Ofcom view

- A3.54 As explained above, we do not consider that deficit repair payments constitute a 'relevant element of the cost base'.

- A3.55 We do not want to distort effective competition and therefore our normal policy is to allow BT to recover relevant, efficiently incurred forward looking costs. As a result of our analysis throughout the Pensions Review, we do not consider that deficit repair payments meet this criteria. Our two pensions consultations constitute an impact assessment for the purposes of meeting our statutory duties, and we do not consider further assessment is required.
- A3.56 We considered investment concerns in detail in the Second Pension Review Consultation and the Pensions Review. In the Pensions Review from paragraph 5.47 we note that there is no evidence to suggest that BT is unable to raise funds for profitable investment projects. We therefore do not consider that BT is constrained from investing in profitable projects as a result of the Pension Guidelines. There is no evidence that investment has been discouraged by the non-inclusion of pension deficit costs.
- A3.57 We discuss effective competition as part of the Six Principles in both the Second Pension Review Consultation and the Pensions Review, we refer readers to these documents for a more detailed discussion. We remain of the view that this principle does not support the inclusion of pension deficit repair payments in regulated charges.

Our approach is consistent with our duties

What we said previously

- A3.58 In arriving at our Guidelines, we assessed the pension costs against our 'assessment framework'. This included a consideration of what a consistent approach to the treatment of pension costs would be. We also considered pension costs against the Six Principles of pricing and cost recovery. We noted that applying our assessment framework enabled us to identify an approach which was consistent with our duties.

BT response

- A3.59 BT argued that our approach to the treatment of pension costs is not consistent with our duties, in particular section 3 and section 4 of the Act.

Ofcom view

- A3.60 We set out details of our relevant duties in the Pensions Review (and the two consultations which preceded that). We explained how we felt that our Pensions Review and Pension Guidelines enabled us to further our duties. This has been set out in section 3 of the Pensions Review.

Duty to finance

What we have said previously

- A3.61 When we conducted the Pensions Review, we analysed the approaches taken by both UK and European national regulatory authorities ('NRAs'). This allowed us to consider BT's claim that our approach was inconsistent with that taken by other NRAs. We noted that we do not think there is a uniquely correct approach to the treatment of pension costs in regulated charges.

A3.62 We considered the reasons for the different approaches to the treatment of pension costs taken by the relevant NRAs and concluded that each NRA has regard to the specific circumstances relevant to each assessment of the costs of regulated products or services. These specific facts include the NRA's relevant duties. We noted that unlike many NRAs (e.g. Ofgem and Ofwat), Ofcom does not have a 'duty to finance.' We considered this was one explanation as to why a different approach would be appropriate.

A3.63 Broadly speaking a 'duty to finance' is the duty to regulate the relevant industries in such a way as to enable licence holders to finance the carrying on of their regulated activities.¹⁸⁷ As stated in our Second Pension Review Consultation, Ofcom does not have a duty to finance.

BT response

A3.64 BT argues that other regulators' statutory duty to finance do not in substance give rise to any different regulatory objective. BT notes that Ofgem and Ofwat allow 'efficient businesses' to finance their activities. BT claims that we have not explained how our duties differ from those of other regulated business in this context.

A3.65 BT considers that the absence of a duty to finance should not result in a different approach being taken to the treatment of pension costs. To support this, BT quotes the Competition Commission from the LLU Appeal Determination:

"In practice we do not see that a statutory financing duty would produce a very different decision from that which Ofcom took in light of its duty to promote efficient investment."¹⁸⁸

Ofcom view

A3.66 As explained in the Pensions Review, the reasons for different approaches being taken by different regulators include:¹⁸⁹

- Historical factors;
- Size and nature of the schemes; and
- Each regulator's own relevant duties as they apply to the industry and framework within which it regulates.

A3.67 Although we consider the existence of a 'duty to finance' relevant in understanding the various approaches, we noted that the absence of a similar duty placed on us does not automatically lead to an answer on the pension cost issues.

A3.68 We adopted a specific assessment framework discussed in Section 4 of the Pensions Review in order to reach a view on those issues which was consistent

¹⁸⁷ <http://www.ofgem.gov.uk/Networks/rpix20/Stakeholder/Documents1/Finance%20WG%20-%20Final%20Final.pdf>

¹⁸⁸ Page 5, BT Annex 3 (<http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/bt-annex-3.pdf>) . See §2.368 Competition Commission Final Determination, CPW vs. Ofcom, Case 1111/3/3/09

¹⁸⁹ Pensions Review 2nd consultation <http://stakeholders.ofcom.org.uk/binaries/consultations/751766/summary/pensionscondoc.pdf> §A10.3

with our relevant duties. Indeed, even if Ofcom were under a duty to finance, it is possible that we would arrive at similar conclusions on the pension cost issues.¹⁹⁰

A3.69 We think this is an important argument. We are ultimately required to ensure that our decisions comply with our own statutory duties and tests, something which our assessment framework allows us to do.

A3.70 In relation to the statement made by the Competition Commission, it is important to note the context in which this was made. The Competition Commission made this comment when considering the cost of capital, and in particular, whether other regulated industries can be used as an indicator of Openreach's optimal gearing ratio. We do not believe that it can be taken as an indicator of how the Competition Commission would approach the issue of BT's pension deficit contributions.

A3.71 It should also be noted that the Competition Commission found that we did not err on the cost of capital point which this quote relates to, or in our approach to the pensions deficit in the WLR/LLU charge control.

The Competition Commission's approach to Bristol Water pension costs

What we said previously

A3.72 We set out our justification for arriving at a different outcome from the Competition Commission in the BW case¹⁹¹ in section 3 of the Pensions Review and in the Second Pension Review Consultation. In arriving at the BW decision, the Competition Commission had regard to the specific duties of BW and Ofwat.

BT response

A3.73 BT claimed that the Competition Commission set out criteria for the recovery of pensions costs in its determination of the BW case. BT argued that its pension deficit repair payments satisfy these criteria. BT stated the criteria which determine inclusion of deficit repair costs are as follows:

- Estimates indicate that the undertaking's costs will increase;
- The costs would increase for reasons beyond that undertaking's reasonable control;
- Reasonable management action could not substantially mitigate the effect of such increases; and
- The RPI does not adequately capture the increase in costs.

A3.74 BT stated that we have provided no justification for departing from the approach taken by the Competition Commission.

¹⁹⁰ Pensions review statement (cited above) §3.31

¹⁹¹ http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_final_report.pdf

Ofcom view

- A3.75 We disagree with BT's interpretation of the Competition Commission's determination on the inclusion of BW pension costs. Rather than setting out principles for the allowance of operating costs in general, we consider that these apply specifically to BW, taking into account Ofwat's duties, the duties of BW and the nature of the market within which BT operates.
- A3.76 In the final determination, the Competition Commission stated that it considered the evidence and arguments of BW and Ofwat in light of the principles which apply to determinations by Ofwat.¹⁹² The Competition Commission set these principles out as follows (emphasis added):
- “The Competition Commission must reach its redetermination in accordance with the principles set out in **section 2 of the Water Industry Act 1991** which apply in relation to such determinations by Ofwat. The primary principles relevant to this determination are to: (a) further the interests of both existing and future water consumers (the ‘consumer objective’); (b) **secure that water companies properly carry out their functions**; and (c) **secure that they are able to finance those functions**, in particular, by securing reasonable returns on their capital.”¹⁹³
- A3.77 The Competition Commission explained that the operating costs which BW is allowed to recover should reflect the expenditure, efficiently incurred, that BW needs to fulfil its statutory duties.¹⁹⁴
- A3.78 The Competition Commission applied the criteria cited by BT directly to BW, taking account of the specific facts relating to BW and the duties of Ofwat. Therefore, we do not think that the criteria cited by BT should be applied in this instance. In Section 4 of the Pensions Review, we created an assessment framework which allows us to identify an outcome which is consistent with our duties. We explain the assessment framework which we have used, and how this helps us to further our duties.
- A3.79 Even if we did think that, it was appropriate to adopt the criteria (mentioned in A3.73) set out by BT, we do not consider that BT's deficit repair payments would meet these criteria, which BT argues is required for their inclusion in regulated charges. As BT's 2011 results¹⁹⁵ show, the estimate of the deficit has declined substantially from the previous triennial valuation of December 2008.
- A3.80 We do not therefore consider that deficit repair payments will necessarily increase by the end of the charge control period following the forthcoming 2011 triennial valuation. If this is the case, it would mean the costs fail to meet the criteria above. In addition, we note that BT's 2011 results demonstrate that it is able to finance its ongoing activities.

¹⁹²*Ibid*, §6.5 BW case.

¹⁹³*Ibid*, §2.10 BW case.

¹⁹⁴*Ibid*, §6.7 BW case.

¹⁹⁵BT 2011 Annual report

http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2011_BTGroupAnnualReport_smart.pdf

Consistency with WBA policy objectives

What we said previously

A3.81 In our January Consultation, we set out the following policy objectives:

- to prevent BT from setting excessive charges for WBA services in Market 1 where it has SMP while providing incentives for it to increase its efficiency;
- to ensure that prices are subject to appropriate controls whilst still encouraging BT to maintain service quality and innovation in WBA services in Market 1;
- to promote efficient and sustainable competition in the delivery of broadband services;
- to provide regulatory certainty for BT and its customers and to avoid undue disruption;
- to encourage investment and innovation in the relevant markets; and
- to ensure that the delivery of the regulated services is sustainable, in that the prevailing prices provide BT with the opportunity to recover all of its relevant costs (where efficiently incurred), including its cost of capital.

BT response

A3.82 BT argued that our Pension Guidelines fail to serve the final four policy objectives cited above.

Ofcom view

A3.83 We set out how the proposals in the WBA charge control meet our policy objectives in section 7 of our January Consultation and we refer readers to this section and to Section 7 of this statement for further details.

A3.84 However in response to the specific policy objectives raised by BT:

- We consider that the application of our Six Principles ensures that we take account of effective competition. In particular, we consider that the mechanism for cost recovery should not undermine or weaken the pressures for effective competition. We discuss this in detail in the Pensions Review.¹⁹⁶
- We place significant weight on the importance of regulatory certainty and this is one of the key considerations in arriving at our Pension Guidelines. We consider that our treatment of pension costs is consistent with our normal approach to the assessment of costs within a charge control, which is known and understood by stakeholders. In addition, the treatment is consistent with the historical treatment of who bears the risks and benefits from the rewards of the pension scheme.¹⁹⁷
- We ensure that we encourage investment and innovation within the WBA charge control by our application of the anchor pricing principle and by allowing BT to

¹⁹⁶ Pensions Review (cited above) §5.87-5.99.

¹⁹⁷ This is considered in detail in Section 4 and 5 of the Pensions Review, which also refers to the first and second consultations.

recover a reasonable cost of capital. This is discussed in detail in Section 3 of this statement.

- In relation to ensuring BT has the opportunity to recover all relevant, efficiently incurred costs, as noted in our Pensions Review, in our view, the concept of regulatory consistency suggests to us that deficit repair payments are not ‘relevant costs’ for the purposes of assessing the costs of regulated products.¹⁹⁸

A3.85 Therefore, by excluding such costs, we believe that our Pension Guidelines enable us to meet (among others) our WBA policy objectives.

Consideration of BT’s pension holiday

What we said previously

A3.86 In our Pensions Review, we explained that it was important to understand the underlying factors and reasons for the current deficit. One of the contributing factors was the pension holiday taken in the early 1990s. We also expressly considered other factors which contributed to the current deficit such as changes in longevity and returns on pension scheme assets.

BT response

A3.87 BT claimed that we placed excessive reliance upon one period of pension holiday without any regard to the wider context in which it occurred or to the factors contributing to whether those costs were efficiently incurred. BT also argued the following:

- The “holiday” was taken on the recommendation of the Scheme Actuary¹⁹⁹ in line with common practice at the time;
- Whilst “[i]t is almost universally accepted that with the benefit of hindsight, the assumptions used in the past understated the true cost of the benefits being promised... it is questionable whether setting regulated charges based on these would have been considered appropriate at the time”;
- The “holiday” is no longer causally relevant. BT made additional contributions to remove the deficit in 1994 and 1995;
- The prospect of a future contributions holiday of a material size is remote. Instead, BT is in the course of a 17 year schedule agreed with the pension fund trustees over which the pensions deficit as currently assessed will be repaired;
- In the event that there were to be a surplus in the future, the priority would likely be to reduce the level of risk in the scheme, rather than increase shareholder dividends.

¹⁹⁸Pensions Review (cited above) §4.37.

¹⁹⁹The Scheme Actuary is an expert appointed by the Trustees to provide them with advice on funding the Scheme. The Scheme Actuary measures the financial state of the pension scheme by placing a value on the pension benefits that have built up in the scheme and comparing this with the value of the assets that the pension scheme holds.

A3.88 BT also reiterated that, in the past under the Telecommunications Act 1984 previously in force, Oftel had a 'duty to finance' and that if this is considered to be a relevant factor in assessing the treatment of deficit repair payments:

“...this would make it highly unlikely that Oftel’s treatment of the pensions holiday was meant to signal that the risk of charges based on P&L operating costs failing to cover cash requirements in the future would lie solely with BT and its shareholders. Ofcom has not explained whether, and if so why, it disagrees with this analysis.”²⁰⁰

Ofcom view

A3.89 We agree with some of the points made by BT and KPMG in relation to the pension holiday.

A3.90 We took BT and KPMG’s arguments into account and expressly stated that we accepted KPMG’s arguments that the pension holiday was not the only contributing factor to the deficit and that the practice of taking pension holidays was not unusual at the time. In addition, we noted that different stakeholders have identified different causes of the current deficit.

A3.91 We accepted that BT subsequently made good the shortfall which was created by the pensions holiday. In the Pensions Review, we explained that this supported the fact that BT has borne the risks and rewards of the pension scheme.

A3.92 However, the purpose of the Pensions Review was not to assess responsibility for the current deficit, but to assess whether our current approach to deficit repair payments remains appropriate. We considered pension holidays in order to identify whether there is consistency between who bears the risks and receives the rewards in relation to the pension scheme.

A3.93 In arriving at our Pension Guidelines, we did not rely solely on the treatment of the pensions holiday. We assessed our proposed treatment against our assessment framework. One aspect of this framework required a consideration of regulatory consistency. It is important to note that this is not limited to a consideration of pension holidays. We place weight on consistency with our treatment of other costs within the regulated cost base for example.

A3.94 We disagree with the conclusion made by BT that Oftel’s ‘duty to finance’²⁰¹ makes it ‘highly unlikely’ that Oftel’s treatment of the pension holiday signals that the risks lie with BT and its shareholders. When BT made the shortfall payments into the scheme Oftel did not include these in regulated charges. Within the Pensions Review we stated:

“As BT notes, Oftel was under such a duty [to finance], but it nonetheless adopted the approach that we have now recommended

²⁰⁰ <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/bt-annex-3.pdf>

²⁰¹ Under the Telecommunications Act 1984, Oftel paramount duty was twofold:

- Firstly, to secure the provision of telecommunications services satisfying all reasonable demands throughout the UK; and
- Secondly, to secure the ability of any person by whom such services fall to be provided being able to finance their provision.

In contrast, under the Communication Act 2003, Ofcom is under no duty to ensure that providers are able to finance their activities.

be maintained. Such an outcome would, of course, only be possible if it would be consistent with our statutory duties.²⁰²

A3.95 We discuss the reasons for considering a duty to finance and our interpretation of this in the Pensions Review. In summary, we have considered the treatment of pension costs against our assessment framework which is intended to ensure that our approach is consistent with our duties.

Pension costs should not be included in WBA charges

What we said previously

A3.96 In the First Pension Review Consultation, we explained that it was important to understand the context surrounding defined benefit pension schemes in general and BT's pension scheme in particular. We stated that we did not consider that the management of the scheme was relevant to whether, in principle, deficit repair payments should be recovered through regulated charges.

BT response

A3.97 BT argues that our approach to the historical context is inconsistent and contradictory. BT said that we stated that it was important to understand the underlying factors which have affected the pension scheme, but that we did not consider that the way in which the pension deficit arose was relevant to the Guidelines.

A3.98 In addition to this, BT argued that the BW decision provides support for taking into account the sources of the deficit in determining whether the costs were efficiently incurred and therefore should be included in regulated charges (in line with WBA objectives).

Ofcom view

A3.99 We do not consider that the management of the scheme is relevant to our decision whether or not, in principle, pension deficit costs should be passed on to consumers. We use our assessment framework to identify whether our current approach is consistent with our duties. In this regard, we consider that the Six Principles do not suggest that pension deficit repair costs should be included in regulated charges.

A3.100 In the Second Pension Review Consultation, we explained that we were not seeking to decide whether costs were efficiently incurred or not; instead, we were seeking to decide, in principle, which types of costs should be passed through to consumers in regulated charges.

A3.101 However, efficiency is not a matter which we ignored when applying the Six Principles. We think that assessing the costs against the Six Principles allowed us to establish whether costs should be passed on in regulated charges as part of our general approach to the treatment of pension costs.

A3.102 The cost causation principle says that costs should be recovered from those whose actions cause the costs to be incurred. We generally put significant weight on this

²⁰² Pensions Review (cited above) §3.31

principle because it will usually be efficient for those causing the costs to be incurred to bear them.

- A3.103 We considered whether current demands directly or indirectly cause pension deficit repair payments and concluded that they do not. The absence of such a causal link means it is not necessary to incur such costs in order to supply current customers and suggests that deficit repair payments are not part of efficiently incurred forward looking costs. In addition, the cost minimisation principle says that the mechanism for cost recovery should ensure that there are strong incentives to minimise costs²⁰³.

Consistent treatment of pension costs

What we said previously

- A3.104 As discussed in the Pensions Review, we usually set charge controls to bring charges into line with a projection of relevant costs at the end of the charge control period. The ongoing pension costs which we take into account when setting a charge control, like many other costs, are a forecast which means it is highly unlikely they will be exactly right.
- A3.105 Our normal approach to the recovery of costs from regulated charges is that the risks of under-recovery against that forecast sit with BT, and the rewards of any over-recovery accrue to BT. In accordance with this, we noted that we would not seek to claw-back any over-recovery of pension costs by BT. This was the approach taken when BT took pension holidays for example. We disagreed with BT that pension costs are sufficiently unique to warrant a different, inconsistent approach.

BT response

- A3.106 BT continued to argue that pension costs are unique and therefore our normal approach to assessing the costs for recovery in charge controls should not apply to pension deficit costs.
- A3.107 For this reason, it stated that our principle of 'no retrospective adjustment' is not an appropriate framework, and that we cannot rely on this on the basis of regulatory consistency alone.
- A3.108 BT argued that we did not address the issue in any real detail in the pensions review and restates its reasons for believing that pension costs are unique:

“There is a unique uncertainty about pensions costs and if funding contributions made in this uncertain environment are later deemed to have been insufficient, then this under-recovery has ongoing forward looking financial implications for the company. This is factually fundamentally different from other costs...It cannot be correct to recognise the initial estimate of funding contributions required over the course of a given charge control, but to ignore the impact of subsequent adjustments to the estimate resulting from better information coming to light following that charge control period²⁰⁴.”

²⁰³ Second consultation (see above) §A6.15

²⁰⁴ <http://stakeholders.ofcom.org.uk/binaries/consultations/823069/responses/bt-annex-3.pdf>

A3.109 BT argued that the actual level of 'standard' cost items is known with certainty at the end of a price control period (as they are the costs actually incurred within that period). It argued that the actual level of costs will be taken as the starting point for the next price control period.

A3.110 Finally, BT referred to arguments made in response to the Second Pension Review Consultation which it claims demonstrate why allowing deficit repair payments to be recovered in regulated charges would not undermine the incentive properties of an RPI-X charge control.

Ofcom view

A3.111 We continue to disagree with BT that pension costs are unique therefore we should disregard our normal treatment of costs within charge controls and make a retrospective adjustment.

A3.112 We do not agree that the level of all normal costs are known with certainty at the end of the price control. For example, as explained in the Pensions Review, the cost of capital is not a cost which is actually incurred in a specific transaction and therefore known with certainty in the price control period.

A3.113 We noted that:

“With the benefit of hindsight, if we consider BT’s regulatory cost of capital in the early 1990s, as set by Oftel, some stakeholders might argue that the rates that were set (e.g. 17.5% in the early 1990s) appear high in retrospect. We do not propose to reopen past decisions on the cost of capital with the benefit of hindsight, just as we do not propose to retrospectively adjust past pension cost recovery.”²⁰⁵

A3.114 Therefore, we do not agree that pension costs are significantly different from normal costs considered in charge controls. BT and other stakeholders understand our treatment of costs in a charge control, whereby BT accepts the risks and rewards of under or over performance.

A3.115 As we set out in the pensions review, we do not think that taking retrospective action in response to new information is conducive to efficient investment incentives over time. This means that where we may update our assumptions or methods of valuation, we do not make adjustments for potential over or under recovery during past control periods where this results from assumptions about the level of costs or revenues which turn to be incorrect.

A3.116 We remain of the opinion that pension costs are not sufficiently unique to warrant a different, inconsistent approach.

Expectations of treatment of pension costs

What we said previously

A3.117 We set out the purpose of the Pensions Review in the First Pension Review Consultation. We explained the way in which we treated pension costs in the past

²⁰⁵ Pensions Review (cited above) §5.15-5.18

when considering the costs of regulated products and services. We then stated our intention to identify whether this treatment of pension costs remained appropriate.

BT response

- A3.118 BT argues that our reasoning is based on the proposition that it understands our normal approach to risk and rewards in charge controls, therefore it must have expected the same approach would apply to pensions costs.
- A3.119 BT then claims that the reason we commenced the pensions review was because the position in relation to the treatment of pensions was unclear. BT argues that, specifically, it was not clear to BT what the formal approach to deficit repair payments was, and should be in light of the significant annual payments it had agreed with the Pensions Regulator.
- A3.120 BT also claims that the whole purpose of the pensions review was to devise an approach to the future. It argues that this issue had not been analysed in the past by Ofcom, therefore the issue of regulatory certainty cannot be relied upon.

Ofcom view

- A3.121 As discussed above, the reason that we engaged in the Pensions Review was to identify whether our current treatment of pensions costs remained appropriate.
- A3.122 In order to identify whether our current approach remained appropriate, we considered our normal approach to costs when setting regulated prices, for example.
- A3.123 BT, in its response to the Second Pension Review Consultation, explained the normal approach taken by Ofcom when assessing costs in charge controls. This approach is consistent with our treatment of pension costs therefore we consider that this approach is clear to stakeholders.
- A3.124 In summary, this approach involves a forecast of costs for the relevant period. The risks of under-recovery against this forecast sit with BT, and the rewards of any over-recovery accrue to BT.
- A3.125 We explain the reasons for placing importance on consistency across different charge controls:
- “The first aspect we consider is consistency in risks and rewards in the context of charge controls. This refers to the fact that in our charge controls, assumptions and forecasts need to be made...We believe that a consistent approach to setting charge controls furthers the interests of consumers and encourages investment and innovation. It is important to consider whether we have applied the approach set out above to pension costs, as we do in the case of other costs.”²⁰⁶
- A3.126 However, we stressed that we would not seek to maintain an approach that was incorrect just because it was consistent with either our previous approach or our approach to the treatment of other costs.

²⁰⁶ §4.5-4.11 & 4.25-4.28 Pensions Review (cited above)

- A3.127 We considered whether our normal approach was appropriate for the treatment of pension costs, or whether there was a material difference in the nature of pension costs which would mean this approach was not suitable.
- A3.128 BT argues that pension costs are unique and therefore this approach is not appropriate, we disagree with this, and explain our reasons from paragraph A.113 above. We therefore consider that taking an approach which is consistent with our normal approach to assessing the costs of regulated products is appropriate.
- A3.129 We concluded that, by analysing pensions costs against our assessment framework, we arrive at an outcome which is consistent with our duties.

Consistency with the approach taken to RAV

What we said previously

- A3.130 In its response to the Second Pension Review Consultation, BT argued that our policy on Valuing Copper Access²⁰⁷ was an example of Ofcom changing the regulatory approach for specific costs.
- A3.131 It considered that this approach could justify us taking a different approach in relation to pension costs.
- A3.132 In our Pensions Review, we explained that we considered including deficit repair payments would represent an adjustment for pension payments which were made in the past (i.e. as a past under-recovery of costs).
- A3.133 We noted that we did not take retrospective action in respect of the adjustment to the regulatory asset value ('RAV').

BT response

- A3.134 In its response, BT reiterated its argument that allowing deficit repair payments would not constitute retrospective action, in the same way that the approach to the RAV adjustment was considered acceptable.
- A3.135 It claimed that we reprised Oftel's earlier approach because we considered the historic period to be relevant to the charges that should be allowed going forward.
- A3.136 BT made a distinction between ongoing service costs and deficit repair payments. It argues that it is not seeking an adjustment for deficit repair payments which were made in the past and which were not recovered. It states that this means it is not seeking retrospective action.

Ofcom view

- A3.137 We consider that requesting deficit repair payments to be included in regulated charges constitutes an adjustment for pension payments which were made in the past (i.e. as a result of a past under-recovery of costs), therefore this differs from the circumstances regarding RAV. In the case of the RAV, we did not take retrospective action. We discussed this in detail in Section 5 of the Pensions Review.

²⁰⁷<http://stakeholders.ofcom.org.uk/binaries/consultations/copper/statement/statement.pdf>

A3.138 We explained that in “Valuing Copper Access”, we concluded that it would not be appropriate to make any adjustments for potential past over-recovery of costs (which may, for example, have occurred between 2001 and 2005). In particular, we said that:

“Ofcom remains of the view that it would be inappropriate to propose to “clawback” any over-recovery that may have crystallised in the period up to the implementation of the results of this review. Ofcom believes that any attempt to do so would be retrospective, in contravention of Ofcom’s regulatory principles, and could be perceived as opportunistic. Further, such retrospective action would set a precedent leading to investment uncertainty signalling the potential for ex-post expropriation of returns legitimately earned under the agreed regulatory framework.”²⁰⁸

A3.139 Equally, in this case, we do not think that it would be appropriate to make adjustments for potential under-recovery of pension costs in the past. We maintain our position that, in line with our normal approach to charge controls, we do not think it is appropriate to take retrospective action in relation to past costs.

A3.140 We disagree with BT’s argument that deficit repair payments are not related to past ongoing service costs for these purposes. We consider allowing deficit repair payments to be included in regulated charges would constitute a retrospective adjustment to the ongoing service cost forecast at the time of setting regulated charges. We continue to believe that this would be inconsistent with our normal approach.

Conclusion

A3.141 In conclusion, we do not consider that there is compelling evidence to support us taking a different approach to the treatment of deficit repair payments in the WBA charge control.

A3.142 We set out our normal approach in the Pension Guidelines and do not consider that the arguments raised by BT in response to our January Consultation demonstrate that there has been a material change in either the circumstance or background considered as part of our review.

A3.143 In addition, we have not observed any evidence to suggest a material change has occurred since the conclusion of our Pensions Review. We note that BT’s response in relation to deficit repair payments constitutes a restatement of previous arguments. We consider that we have addressed the general issues raised by BT in detail throughout our Pensions Review. As a result of this, and in light of the recent results published by BT, we consider that our current treatment remains appropriate.

A3.144 We will therefore continue to apply our Pensions Guidelines in the context of the WBA charge control

²⁰⁸ Pensions Review – see §5.21-22