Charge control review for LLU and WLR services

Annexes
Non-confidential version;
redactions are indicated with [✂]"

Consultation

Publication date: 31 March 2011

Closing Date for Responses: 8 July 2011

Contents

Annex 1

Responding to this consultation

How to respond

A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on Thursday 9 June 2011**.

A1.2 Ofcom strongly prefers to receive responses using the online web form at http://stakeholders.ofcom.org.uk/consultations/wlr-cc-2011howtorespond/form, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please use this address lluwlr.chargecontrol@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.

A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.

Ciaran MacCann
Floor 4
Competition Policy Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Fax: 020 7783 4109

A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.

A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Ciaran MacCann on 020 7981 3829.

Confidentiality

A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your

response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at http://www.ofcom.org.uk/about/accoun/disclaimer/

Next steps

A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in Q2 or Q3 2011.

A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.

A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.

A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

A1.16 Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email Graham.Howell@ofcom.org.uk

Annex 2

Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.

A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.

A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.

A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.

A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing ☐

Whole response ☐

Part of the response ☐

Name/contact details/job title ☐

Organisation ☐

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here. ☐

Name

Signed (if hard copy)

Annex 4

Consultation question

A4.1 Below we list all of the questions that we ask in this consultation. Respondents are advised to consider the analysis included in this consultation in answering these questions.

Question 3.1: Do you agree with Ofcom's proposal to set synchronised charge controls for LLU and WLR?

Question 3.2: Do you agree with Ofcom's proposal to set charge controls for LLU and WLR to expire on 31 March 2014?-

Question 3.3: Do you agree with Ofcom's proposal to use a CCA FAC methodology to establish the cost base for the next LLU and WLR charge controls? Please give reasons for your answer. (Note that respondents are also invited to comment on continuation of the RAV approach in Question 3.5 below.)

Question 3.4: Do respondents agree with our proposal to apply anchor product pricing as a guiding principle in setting the charge controls, whilst including economies of scope which result from the allocation of costs in our financial modelling? Please give reasons for your answer.

Question 3.5: Do you agree with our assessment that the decision on the treatment of pre-1997 duct assets set out in the 2005 Valuing BT's Copper Network remains appropriate for this set of charge controls? If not, why do you consider that the basis of valuing pre-1997 assets should change and what valuation basis should be used?

Question 3.6: We note that we would expect that the difference between the charges for MPF and PIA should be at least as great as the difference in their respective incremental costs. Thus, if we maintain the RAV adjustment in copper based access services, we would expect that any assessment that we make of duct access charges would reflect a consistent approach to asset valuation, recognising the RAV adjustment. We consider this to be consistent with economic considerations and the European Commission's NGA recommendation. Do you agree with this assessment of the need to recognise the RAV adjustment in the setting of duct access charges? If not, please give your reasoning.

Question 3.7: Do you agree that it remains appropriate to value post-1997 assets on a replacement/CCA basis? If not, please give your reasoning.

Question 3.8: Do you agree with our assessment that as BT's recent valuation of post-1997 assets is not consistent with alternative estimates of replacement values it does not form a appropriate basis for setting charges? If not, please give your reasoning.

Question 3.9: Do you agree with our proposal to include a valuation of duct in the charge controls based on indexation of post 1997 expenditure? If so, should this indexation be based on RPI; GCSI or GCSI adjusted for either productivity, scale

economies or both (the detailed examination of these indices is set out in Annex 4? Please give reasons for your answer.

Question 3.10: Do you agree with our proposal to discount the indexed valued by an estimate of a national roll out of duct? If so, do you consider BT's estimate of 14.5% to be appropriate? If you disagree with our approach please give your reasons.

Question 3.11: Our range for the duct value is defined by the degree to which BT is able to establish contracts with cost below the national average? Do you consider that it is reasonable to expect BT to achieve below national costs on average?

Question 3.12: Do respondents agree with our preferred approach to use glide paths to align charges with costs except in the circumstances discussed above where one-off adjustments may be preferable? Please give reasons for your response.

Question 3.13: Do you agree with Ofcom's proposal to impose the arrangements for charge control compliance and requirements for provision of data set out in Annex 12? Please give reasons for your answer.

Question 3.14: Do you agree with Ofcom's proposal to use the RPI as the appropriate measure of inflation for indexation? Do you agree that change in RPI for the year to 31 October preceding the start of each Relevant Year should be used? Please give reasons for your answers.

Question 3.15: Do you agree with Ofcom's proposal to retain provisions for "Carry Over" in the new controls? Please give reasons for your answer.

Question 3.16: Do you agree with Ofcom's proposal that charge changes made under the new controls prior to April 2012 should be made with a minimum 28 days notice? Please give reasons for your answer.

Question 3.17: Do you agree with Ofcoms proposal that charge ceilings for key services should be set for the 1st period of the new controls – i.e. the period between the first day of the new controls and 31 March 2012? Please give reasons for your answer.

Question 4.1: Do you agree that we should set separate line rental charge controls for (i) MPF rental and (ii) SMPF rental?

Question 4.2: Do you agree that separate baskets for MPF ancillary services, SMPF ancillary services and co-mingling ancillary services is appropriate to mitigate the opportunity for gaming while providing Openreach some flexibility to efficiently adjust prices?

Question 4.3: Do you agree that we should set basket specific controls as opposed to a single control which is applied to all baskets?

Question 4.4: Do you agree that measuring compliance of basket controls against prior year volumes (as opposed to current year volumes) is a proportionate and practical approach to charge controlling ancillary services?

Question 4.5: Do you agree that inertia clauses applied to the ancillary services baskets should be tightened from their current level of 10%? Please give views on the appropriate level of inertia clauses in the range 2% to 7.5%.

Question 4.6: Do you agree that we should not align or intervene to narrow the differential in charges for MPF and SMPF expedite?

Question 4.7: Do you agree that we should align the price jumper removals?

Question 4.8: Do you agree that we should use the weighted average of current prices to estimate the 2010 price of the service for jumper removals?

Question 4.9: Do you agree that option 1, that is ensuring the alignment of similar charges at the beginning of the charge control period but not imposing any further obligation on Openreach to keep charges aligned, is the most appropriate and proportionate way to avoid competitive distortion caused by the misalignment of prices?

Question 4.10: Do you agree that a charge control in the range RPI-9.9% - RPI-12.9% (base case RPI-11.4%) should be imposed on MPF new provide to bring the charge into line with CCA FAC by the end of the charge control period?

Question 4.11: Do you agree that charge controls control in the range RPI-7.7% - RPI-10.7% (base case RPI-9.2%) should be imposed on MPF transfer and SMPF connection to bring the charges into line with CCA FAC by the end of the charge control period?

Question 4.12: Do you agree that the charge for MPF and SMPF cease should be zero and costs recovered from rental charges?

Question 4.13: Do you agree that the 70 low volume products in the co-mingling basket should continue to be charge controlled within the co-mingling basket?

Question 4.14: Do you agree that time related charges should remain out of the scope of the charge control and subject to general remedies applied in the WLA market review?

Question 4.15: Do you agree that special fault investigations should remain out of the scope of the charge control and subject to general remedies applied in the WLA market review?

Question 4.16: Do you agree that the charges for special fault investigations should remain aligned between MPF and SMPF?

Question 4.17: Do you agree that electricity charges should remain out of the scope of the charge control but subject general remedies set in the WLA market review?

Question 4.18: Do you agree that both MPF and SMPF expedited connections should be charge controlled within the MPF and SMPF ancillary services baskets?

Question 4.19: Please indicate which of the Options 1 – 4 you think would be the most effective method of regulation of LLU enhanced care services. Please indicate whether you think Option 4 (removal of the cost orientation requirement and creation of a new requirement that the charges for LLU enhanced care should not be misaligned from those for equivalent WLR enhanced care services) would be an effective remedy.

Question 4.20: Do you agree that new services which partially or fully replace existing services should be included in the charge controls?

Question 5.1: Do you agree that the core rental should be subject to a charge control which sets the price of the WLR core rental on a glide path to ensure it recovers CCA FAC costs by the end of the charge control period?

Question 5.2: Do you agree that WLR transfer should be subject to a separate charge control? Please give reasons for your answers.

Question 5.3: Do you think that Ofcom should adopt Option 1 or 2 above as its approach to the pricing of WLR transfer during the next charge control? Please give reasons for your answer.

Question 5.4: Do you think that the cost orientation obligation should be removed from WLR transfer services? Please give reasons for your answers.

Question 5.5 : Do you agree that the price for WLR new provide should be subject to a separate control which ensures that the price is aligned with FAC by the end of the charge control period?

Question 5.6: Do you agree that a charge control would not be practical for MPF to WLR conversion given the low volume of services.

Question 5.7: Do you agree that charges for MPF to WLR conversion should not be aligned precisely to the charge for WLR to MPF?

Question 5.8: Do you agree that charges for calling and network features should not be charge controlled? Please give reasons for your answers.

Question 5.9: Do you agree with that pre-validation charges should not be charge controlled? Please give reasons for your answers.

Question 5.10: Do you agree with that ISDN to WLR conversion charge should be subject to cost orientation obligation but should not be charge controlled? Please give reasons for your answers.

Question 5.11: Do you agree with that cancellation charges should not be charge controlled? Please give reasons for your answers.

Question 5.12: Do you agree that time related charges should remain out of the scope of the charge control and subject to general remedies applied in the WAEL market review?

Question 7.1: Do you agree with our general approach to estimating costs?

Question 7.2: Do you consider the task times to be reasonable? If not, please provide your reasons and alternative view, together with supporting evidence where possible.

Question 7.3: Do you have any views on our proposed assumptions regarding Openreach's ability to reduce costs through efficiency gains.

Question 7.4: Do you have any views on our proposed assumptions regarding the impact of inflation on Openreach's costs through efficiency gains.

Question 7.5: Do you have any comments on our proposed approach to dealing with the changes in the cost of replacing the copper assets?

Question 7.6: Do you have any comments on Ofcom's approach to projecting costs relating to Openreach's assets.

Question 7.7: Do you have any comments on the proposed regulatory adjustments to be made in determining the recoverable costs

Question 7.8: What issues should we consider when deciding whether to exclude costs relating to evoTAMs from the regulated cost stacks? If you consider that the costs should be excluded, please provide your reasons. If you consider that they should be included, how should they be allocated across services?

Question 7.9**:** *With reference to Annex 12, do you have any comment on our approach to calculating Openreach's cost of capital.*

Question 7.10: *With reference to Annexes 8 and 9, do you have any comment on our approach to allocating costs*

Question 7.11: Do you agree with the proposed adjustments to the cost stacks for pricing purposes?

Question 7.12: Do you agree with our approach for deriving the glide paths?

Question 8.1: Do you agree with Ofcom's proposal to base charges on CCA FAC provided that this results in differentials between the core rental charges that are not less than the likely differences in LRIC and not significantly greater than the likely differences in LRIC?

Question 8.2: Do you agree with Ofcom's assessment of the likely differences in LRICs between MPF and WLR/WLR+SMPF?

Annex 5

Valuation of duct assets

Introduction

A5.1 In this Annex we set out our proposal for the treatment of duct in the charge controls.

A5.2 Specifically, we have addressed the following:

- We have reviewed the 2005 Valuing BT's Copper Network[1] decision ("2005 review") on the treatment of the Regulated Asset Value (RAV) and consider that this decision remains appropriate for these charge controls;
- We have reviewed the BT proposed CCA valuation for post 1st August 1997 ("post-1997") duct assets and consider that this valuation cannot be reconciled with alternative estimates based on actual post-1997 expenditure and BT's method does not provide a good cost estimate for use in the charge controls; and
- We have considered alternative approaches to estimating the value of post-1997 duct assets and have proposed a range for consultation.

2005 Cost of Copper decision

A5.3 In the 2005 Review we decided the basis that we would adopt in valuing BT's access assets. The decision was that we revert to the Historical Cost Accounting (HCA) value for duct asssets that BT had in place in 1997, while adopting Current Cost Accounting (CCA) replacement value for assets that had been built since 1997. This followed an earlier 1997 decision to change the valuation methodology for BT's entire asset base from HCA to CCA.

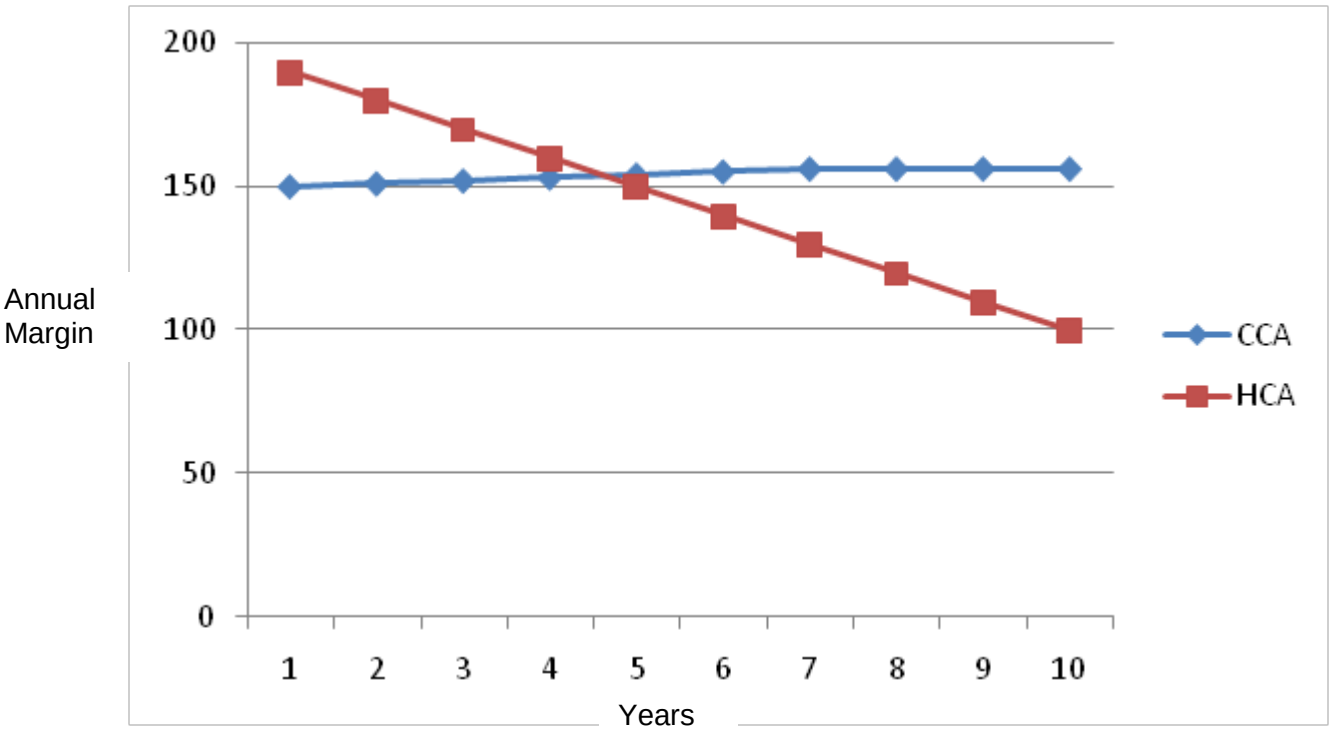
A5.4 The reason for this decision in 2005 was that as a result of the 1997 revaluation, BT's return on pre 1st August 1997 ("pre-1997") assets had increased substantially. This was a consequence of the change in accounting approach during the lifetime of the assets.

A5.5 Adopting a consistent accounting approach - which could be based on either HCA or CCA valuation - throughout an asset's life will result in full recovery of the costs of an asset.

A5.6 However, changing the methodology part way through an asset's life may lead to over or under recovery of costs, depending on the relative values of the asset under the old and new approaches to valuation. In the case of Openreach access assets, the higher CCA value of pre-1997 access network assets led to a "windfall" gain to BT. How this would occur is illustrated in the figure A5.1 (below) which shows that a change from HCA to CCA may lead to higher margin being earned over the remaining life of the asset.

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

Figure A5.1: Gross margins required for a constant cost of capital over the life time of a single asset experiencing appreciation in value



A5.7 Figure A5.1 shows the gross margins[2] required to yield an annual rate of return equal to a constant cost of capital for a simple hypothetical asset under both HCA and CCA. The asset is purchased at the outset, is subject to straight line depreciation over its useful economic life, subject to a constant increase in replacement cost and the firm is assumed to have a constant cost of capital. The chart shows the annual gross margins on an undiscounted basis for the full duration of the asset's life. Although the cost recovery paths are different, if they were discounted at the cost of capital, the total returns would be equivalent over the full period, regardless of whether the HCA or CCA approach were adopted, providing it was consistently applied over the entire period. In other words, either HCA or CCA, consistently followed, will allow investors a return just equal to the cost of capital over the life of the assets.

A5.8 Figure A5.1 shows that for this particular type of asset (where the gross replacement cost, or GRC, is increasing over time) a greater proportion of costs is recovered early in the asset's life under the HCA approach, while the recovery of costs under a CCA approach is greater later in the asset's life. Costs on a CCA basis are initially lower than HCA costs because of the holding gain arising from the increase in asset prices (which as noted above must be subtracted from the required return in each year). In later years the increased value of the assets (and hence the margin required to achieve a given rate of return) on a CCA basis begins to outweigh the annual holding gain. Hence, in later years, CCA costs are above HCA costs.

[2] The required gross margin – revenues minus operating expenditure – is equal to the sum of depreciation and the required return on capital in each year. Additionally, in the CCA case, the holding gain is subtracted.

A5.9 Accordingly, if charges are initially set on the basis of HCA costs but, during the life of the assets, a change to setting charges on the basis of full CCA costs is made, there will be an over-recovery of costs over the life of the assets as a whole.In this situation, gross margins would follow the upper envelope of the two curves shown in the diagram above. Such an over-recovery would be considered a gain arising from the change in accounting treatment in the setting of charges. However, the inverse is also true: if the gross replacement value of the asset decreases over time, as a result of a decline in the asset's current value, then under-recovery or a loss would result from changing from HCA to CCA at any point in the recovery period. But this was not the situation in 2005.

A5.10 In 1997, Oftel expected that infrastructure competition would develop to an extent sufficient to constrain BT's prices in future, limiting the available margins.However, by 2005 infrastructure competition had failed to materialise to any significant degree and Ofcom had initiated its Telecommunications Strategic Review (TSR), the focus of which was LLU based competition.

A5.11 In the 2005 Review, which contributed to the Telecoms Strategic Review[3], Ofcom took the view that the 1997 revaluation was now having an effect of stifling rather than promoting competition, as it led to LLU and WLR prices being higher than they otherwise would have been. Given that there was no immediate prospect of network based competition using alternative local access networks, promoting the efficient pricing of access services using BT's network was more pressing.

A5.12 Accordingly, Ofcom took the view that adjustment needed to be made to the method used to value duct assets. This adjustment was considered necessary to ensure that the valuation was consistent with promoting efficiency and sustainable competition in line with the broader legal framework.

A5.13 In light of this concern, we decided that future prices should no longer reflect the higher CCA valuations with respect to the older assets. Accordingly, we decided that pre-1997 assets should revert back to their HCA value as at 2005. The approach was not strictly, however, a return to an HCA accounting treatment. Instead, the pre-1997 duct asset was to be indexed to the RPI. Depreciation was also to be based on this "regulatory asset valuation" of the pre-1997 duct. As we said at that time:

> **"** In order to avoid the potential for such over-recovery, and given that it is unlikely that any operator will build a new nationwide access network in competition with BT in the near future, Ofcom decided to create a regulatory asset value, or RAV, to represent the remaining value of the pre-1997 copper access network assets rather than continuing to value those assets at their current cost."

A5.14 The approach, however, allowed for a gradual return to full CCA valuation over time as depreciation was applied to the pre-1997 assets at less than the full CCA rate. Over time the RAV value of pre-1997 assets would reduce and the post-1997 CCA valued component of the duct valuation would increase. This would strengthen incentives for future infrastructure competition by allowing BT's asset value to rise towards its full CCA value over time – and with it BT's regulated charges for local access services.

[3] http://www.ofcom.org.uk/static/telecoms_review/final_statement.htm

A5.15 In making this adjustment, Ofcom was satisfied that each of the pre-1997 and post-1997 valuation of duct, when included as part of a subsequent charge control, was capable of satisfying the legal tests in the Communications Act 2003 (the "Act") which apply when setting charge control conditions; in particular, the requirements that:

- the setting of a charge control condition should be appropriate for the purposes of promoting efficiency, promoting sustainable competition and conferring the greatest possible benefits on the end-users of public electronic communications services; and

- in setting such a condition, Ofcom must take account of the extent of the investment in the matters to which the condition relates of the person to whom it is to apply.

A5.16 We are satisfied that our proposed approach to the valuation of duct assets continues to be capable of satisfying these tests for the reasons set out below.

A5.17 In the 2005 review we proposed to maintain our revised approach to the valuation of BT's duct assets until such time as the competitiveness of the appropriate markets was re-assessed. We suggested that the conclusions should be reviewed "in light of the results of the next Telecommunications Strategic Review or in 2009/10 whichever is the earlier".[4] We propose to undertake this review in this consultation drawing on the market assessments undertaken in the reviews of Fixed Narrowband Services Wholesale Markets ("WAEL")[5] and the Wholesale Line Access Market ("WLA")[6] which considered BT market power in the provision of wholesale access services.

Valuation of duct in the Regulated Financial Statement (RFS) and in charge controls

A5.18 The revaluation of duct assets resulting from the 2005 Review is not reflected in the RFS. The value in the RFS represents BT's estimate of the cost of replacing the duct that has been constructed in the last 40 years i.e. a CCA valuation. Duct more than 40 years old is excluded from the valuation.

A5.19 The 2005 Review values duct for charge controls purposes as follows:

a) For pre 1st August 1997 assets, the value included in charge controls is the HCA value of those assets in 1997 inflated by RPI since 2005. Duct over 40 years is excluded and hence the size of this component of the valuation declines as assets age.

b) The value of assets resulting from capital expenditure since 1st August 1997 are included on a CCA replacement value basis.

A5.20 We should note that while a definition of pre- and post-1997 duct assets appears clear in principle, in practice the physical distinction is not always so clear cut. Therefore, while expenditure pre and post 1997 can be identified the delineation of the physical duct is more difficult. Actual physical duct in any given location can include elements arising from expenditure in multiple years, due to repairs and

[4] Paragraph 5.22 of the 2005 Review
[5] http://stakeholders.ofcom.org.uk/consultations/wnmr_statement_consultation/
[6] http://stakeholders.ofcom.org.uk/consultations/wla/statement

replacement. BT records of duct are based on statistical estimates and the division of duct in terms of write-offs (over 40 years), pre-1997 and post-1997, is based on arithmetic calculations linked to known expenditure. This latter point is discussed further below.

Appropriateness of the 2005 Review decision for these charge controls

A5.21 There are two elements to the 2005 decision: the treatment of the pre-1997 assets and the treatment of post-1997 assets. We consider each of these separately.

Pre-1997 adjustment

A5.22 The RAV treatment of pre-1997 assets was based on two considerations, that:

- there was no imminent prospect of infrastructure based competition;
- a CCA valuation of the pre-1997 assets would not be consistent with the promotion of efficient and sustainable competition nor confer benefits on end-users because:
  - as these assets had initially been valued on an HCA basis, it would have allowed BT to earn a return over the life of the asset which was above the level it would expect in a competitive market; and this level of return would also be higher than was necessary to maintain incentives to invest in its access network; and
  - the valuation would have led to higher than appropriate LLU and WLR charges which could have stifled the development of downstream competition, particularly from LLU operators in broadband markets, ultimately negatively impacting end-users.

A5.23 BT has argued that the RAV treatment of pre-1997 investment is no longer appropriate. BT contends that the competition that Ofcom was seeking to promote in 2005 (based on WLR, SMPF and MPF) has now been established. In addition, encouraging investment into the local access market is now a key government and regulatory objective, and a regulatory ruling which imposes charges for legacy assets significantly below replacement cost reduces the returns which can be made from such investment.

A5.24 One key consideration at the heart of these arguments arises from the changes to BT's obligations with respect to the significant market power ("SMP") finding in the WLA review. BT is now required to provide access to its duct and pole networks (the Physical Infrastructure Access ("PIA") remedy) to companies wishing to lay fibre for access services. Duct access within the PIA remedy is designed to promote investment in NGA infrastructure which will in future compete with LLU and WLR. BT argues that competition between current and next generation infrastructure could be distorted if the former is priced too low.

A5.25 As we will set out below, we do not consider that these arguments are sufficient to justify departing from the 2005 decision on pre-1997 assets.

A5.26 In this context, it is important to note that the market power determinations in the recent WLA and WAEL market reviews were not substantially different from those that informed the 2005 Review. BT retains SMP in the provision of wholesale

access services. The economic and market advantages provided by the legacy duct network for BT were found in both reviews to have remained very strong and there was no evidence of other organisations significantly investing in duct provision in the near term[7]. Therefore, we retained the SMP conditions requiring the provision of LLU and WLR, and extended the conditions on BT to include sharing of access ducts on the basis that independent provision of duct was unlikely to emerge in the forward look period of the review (3 years).

A5.27 The question is then, given BT's market power, whether economic efficiency would be promoted by changing the way pre-1997 duct is valued and whether this would promote sustainable competition and confer the greatest possible benefits on the end-users.

Valuing BT's Duct for Economic Efficiency

A5.28 We have therefore reviewed the RAV treatment of pre-1997 assets, for the purposes of setting regulated charges, from the point of view of economic efficiency. When regulators set prices, they want to ensure that these prices send the 'correct' signals to market participants - in other words, that the prices set will incentivise efficient behaviour. Efficient behaviour across all markets would result in the economy getting the greatest value from the resources at its disposal and so will benefit consumers.

A5.29 Efficiency is in part about producing goods and services as cheaply as possible. This is known as '*productive efficiency*'. It is also about ensuring that the right combinations of goods and services are produced given the tastes and preferences of consumers and citizens.

A5.30 For this to happen, the resources of the economy (its capital and labour) must be correctly allocated among the various goods and services: this type of efficiency is termed '*allocative efficiency*'. The third type of efficiency is '*dynamic efficiency'*: this essentially means that companies are encouraged to engage in investment and innovation – doing new things or doing old things better over time. We discuss how duct valuation is related to each type of efficiency below.

Allocative efficiency and forward-looking costs

A5.31 In theory, the highest level of allocative efficiency is attained when prices are equal to marginal costs. Marginal cost is the extra cost incurred to produce one additional unit of output. It is a forward-looking concept. Costs which have already been incurred are not part of marginal cost and, for allocative efficiency, should not be reflected in prices. This is essentially because past costs are not relevant for future decision making. They cannot be influenced by future consumption or production and so prices which affect decisions on consumption or production should not take them into account if resources are to be allocated efficiently.

A5.32 Perhaps the most important question is then "what is the forward-looking cost of BT's ducts?" This depends on whether BT's ducts should be regarded as "sunk assets". It is worth noting that the definition of a sunk cost is that it is not recoverable on exit from the market.

[7] Paragraph 4.12 WLA Statement

A5.33 On the basis of the above definitions, it seems likely that ducts come into the category of sunk assets, and Ofcom's 2005 cost of copper review was informed by this view.

A5.34 Further, although there may be local bottlenecks, we do not currently believe that there are widespread capacity constraints in the use of duct for current generation services. The fact that duct costs are sunk, combined with the existence of available duct capacity, implies that use of these assets is likely to have very low marginal costs (this is true for both short run and long run marginal costs given the surplus capacity). It is also relevant to our consideration that it is unlikely to be necessary for BT to replace its duct assets in full in order to remain in the market. Hence, if allocative efficiency were the only consideration, the appropriate measure of forward looking cost might be very low or in some circumstances close to zero.

A5.35 However, as we explain below, there are good reasons for not actually pricing on the basis of marginal costs. This means that allocative efficiency may be less relevant to the absolute level of prices for services which use BT's access ducts than productive and dynamic efficiency.

Productive efficiency

A5.36 *Productive* efficiency is about ensuring that there is no inefficiency or waste in production. At firm level it will occur when the firm cannot decrease the cost of producing a given level of output by changing its production methods in any way.

A5.37 Where there is (potentially) more than one firm in the market, productive efficiency requires that prices should give the correct incentives to operators so that total costs are minimised. In the case of BT, its competitors are likely to have a choice of buying a wholesale service from BT or alternatively building their own network to supply the same service to themselves. This is termed the 'build/buy' decision. Prices which send correct (efficient) build/buy signals will lead competitors to choose the option which minimises the sum of their costs and BT's costs. In other words, the competitor should be encouraged to buy BT wholesale services (rather than build their own network) if the additional costs of using BT's network are less than building their own network.

A5.38 In the case of duct assets there is an asymmetry between the costs to the competitor of building a new network and the costs of using BT's network. This is because BT's duct network has already been built and, as noted above, the assets are effectively largely sunk, whereas the costs to a competitor of building a new network have not yet been incurred i.e. all the duct would have to be purchased and laid in the ground. Therefore, assuming there is capacity in the BT duct network, the future costs incurred by one of BT's competitors in using the BT network would be much lower than building a new network and it would be more efficient to purchase BT's wholesale services. To signal this to users, efficient prices should be set close to the marginal cost of using BT's duct.

A5.39 However, if the capacity of the duct network may need to be increased and/or BT's duct assets will eventually need to be replaced, this may need to be reflected in charges if correct build/buy incentives are to be given. This is because, for efficiency, the entrant should "build" if its forward-looking costs are lower than BT's forward looking costs, and the latter may now need to include the cost of replacing BT's assets. This may not matter immediately, but the build/buy decision will become more relevant to charge setting if competitive investment is seen as possible in the longer term. We will discuss the treatment of post-1997 assets later,

but it is important in this context to note that the impact of the adjustment to the value of pre-1997 assets falls over time as the value of those assets as a proportion of the total duct valuation declines.

A5.40 Productive efficiency is also relevant where other operators have a choice of more than one BT wholesale service – for example, MPF, WLR+SMPF or PIA - as a way of providing a given downstream service. In this situation, relative charges need to be set to give operators the correct incentive to use the service which minimises total costs. Productive efficiency then requires that the difference in charges between the services should reflect the difference in their incremental costs. This is particularly relevant to the question of incentives to invest in NGA, as we discuss further below.

Dynamic efficiency and regulatory certainty

A5.41 *Dynamic* efficiency refers to the improvements in efficiency which occur over time as innovation results in the development of new goods and services, and technological advances and investment make the production of current and future goods and services more efficient (i.e. use fewer resources and so become less costly).

A5.42 We distinguish two aspects of dynamic efficiency. The first relates to investment and innovation by the regulated firm. The second relates to competitive entry and the additional competitive pressure to reduce costs over time which this can bring. Regulatory certainty - consistent and stable decision making – is important for both aspects of dynamic efficiency. This is because it allows all industry players to plan their investments and outputs with sufficient certainty about charging or regulatory decision making.

A5.43 Minimising uncertainty is particularly important where there are large sunk costs. If the costs of existing ducts are to be regarded as sunk, the key question in determining the appropriate RAV is the extent to which investors should be remunerated in terms of a return on those sunk assets. The textbook economic approach to this question would be to regard all sunk costs as irrelevant to pricing decisions, on the basis that efficient pricing reflects only forward-looking costs. However, while such an approach would be efficient in a static sense, it would ignore the very important issues of dynamic efficiency and incentives to invest.

A5.44 These issues are important because, if the investors believed that their costs, once sunk, would be regarded by the regulator as irrelevant for pricing purposes, they would be very reluctant to invest in assets that could be regarded as sunk once the investment had been made. Therefore, in considering the appropriate approach to pricing in the presence of sunk costs, the consistent treatment of investments is particularly important. This could imply remuneration on the basis of all or none of the sunk costs, or something in between.

A5.45 The 2005 treatment of pre-1997 assets was our approach to striking this balance in the treatment of sunk costs and ensuring appropriate incentives for forward investment. It is appropriate to allow BT a reasonable return on pre-1997 investment. This is achieved by the RAV adjustment. It is not necessary to allow higher returns in the form of windfall gains which arise simply as a result of a change in the accounting convention used to value BT's duct assets. It is this excess return (at least, the future part of it) which is removed by the RAV adjustment.

Incentives to Invest in NGA

A5.46 BT has argued that, in order to for the appropriate incentives in place for NGA investment, it is necessary to remunerate the existing assets on the basis of a full CCA valuation. However, we have explained above that allocative and productive efficiency are served if prices are set on the basis of forward-looking costs (strictly, marginal cost), and sunk costs play no part in this measure of cost. This argument is particularly applicable where NGA investors can use existing BT ducts (as is likely to be the case). If space exists in BT's ducts, the most efficient way of providing NGA is likely to be to use this.

A5.47 Moreover, incentives to invest in current generation services remain important. One effect of an unexpected return to full CCA valuation of all assets could be to undermine the business cases of the LLU operators. Again as we explained above, it could create a perception that further changes of this sort could occur in future and that regulation would not be consistent over time, with the risk that future competitive investment would be stifled.

A5.48 We agree that consistency between LLU and WLR charges, on the one hand, and PIA charges on the other is desirable, not least because all can be used to provide voice and broadband services and are therefore potentially substitutable at the wholesale level. This means that productive efficiency – choosing the right input to minimise total costs – is likely to be the main efficiency concern.

A5.49 However, for consistency and productive efficiency it is relative prices, not the absolute level of prices, that matter and we do not consider that the appropriate response is to raise copper access prices above an economically efficient level.

A5.50 We believe that the principles which we have applied to setting the relative prices for MPF and WLR are also relevant to setting the relative charges for MPF and PIA. In order to ensure that charges give incentives to make the most efficient choice of wholesale input, whilst maintaining incentives for upstream entry, then the difference between the charges for MPF and PIA should be at least as great as the difference in their respective incremental costs. A ceiling set on this basis would mean that the RAV was reflected in the maximum level of PIA charges.

A5.51 Whilst it is not yet clear that such a ceiling will be the binding constraint on PIA charges, we would expect that the difference between the charges for MPF and PIA should be at least as great as the difference in their respective incremental costs. Thus if we maintain the RAV adjustment in copper based access services, we would expect that any assessment that we make of PIA charges would reflect a consistent approach to asset valuation, recognising the RAV adjustment. In reaching this view, we have taken utmost account of the European Commission's recommendation on NGA which states that NRAs should regulate access prices to civil engineering infrastructure consistently with the methodology used for pricing access to the unbundled local copper loop[8]. It is also consistent with our anchor pricing approach to legacy access charges.

[8] Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32010H0572:EN:NOT

Proposal on pre-1997 duct valuation treatment

A5.52 In the period covered by the WLA market review significant investment in competing duct infrastructure appears unlikely and dynamic efficiency is consequently a higher priority than build/buy incentives. Valuing pre-1997 duct assets according to the RAV is consistent with dynamic efficiency as:

- this would allow BT shareholders a reasonable return on their assets without necessarily creating windfall gains and;
- in principle, continuation of the method adopted in 2005 is also consistent with maintaining a stable regulatory environment.

A5.53 We believe that this would in turn promote sustainable competition and confer the greatest possible benefits on the end-users.

A5.54 Therefore, we are proposing to continue valuing pre-1997 duct assets according to the RAV.

A5.55 We do not see the incentives to invest in NGA as impacting our proposed position. The main efficiency concern raised by the possibility of NGA investment using PIA is the efficiency of the relative prices of PIA and downstream services such as MPF. Efficient relative prices can be achieved by setting the charges for PIA, MPF and other access products in a consistent way, reflecting a consistent asset valuation including the RAV adjustment in all cases.

Post-1997 assets

A5.56 In 2005 we decided that post-1 August 1997 assets which had been valued consistently on a CCA FAC basis throughout their lives would continue to be valued using the CCA convention. We also noted "that over time the asset base will move toward a full CCA valuation as pre-1997 assets are retired and replaced with new ones".

A5.57 The rationale for allowing a CCA valuation of post-1997 assets was twofold:

- The post-1997 assets had been consistently valued on a CCA basis throughout, so there was no concern, at the time, about windfall gains on these assets; and
- It was felt that, in the longer term "concerns over incentives to invest in access infrastructure have merit, (and)… The approach Ofcom is taking will, in the longer term, restore the asset base to its CCA value in line with Ofcom's previously stated view on the appropriateness of CCA as a basis for encouraging infrastructure investment."[9]

A5.58 Clearly concerns about the effect of changes to valuation methodologies on investor confidence remain appropriate for this current review of duct. Unanticipated changes in the basis of valuation would create investor uncertainty which would be undesirable.

A5.59 Different considerations apply with respect to future competitive entry, and we consider these below.

[9] Paragraph 4.28 of the 2005 Review

A5.60 Again, we are concerned with the promotion of efficiency, the promotion of sustainable competition and conferring the greatest possible benefits on the end-users. In this context there are two key considerations:

- whether it is necessary to price services using the existing assets on the basis of full replacement costs in order to give the right signals for competitive entry; and
- whether such entry is likely.

A5.61 If BT were to face the threat of new local access network competition in future, it would become more important for charges to reflect the costs of network level entry as we noted above. Our approach is consistent with this since it embodies a gradual move towards the full CCA valuation which will give stronger incentives to "build" rather than "buy" over time. This is because, over time, the proportion of the total value of duct represented by pre-1997 assets valued at indexed HCA declines. Accordingly setting post-1997 assets to be valued on a CCA basis now allows the total duct valuation to move towards a full CCA valuation without the need for step changes in value or charges. Moving towards the CCA valuation over time is therefore consistent with the view that there is potential competitive entry in access markets, that is for competition in duct or duct alternative provision rather than duct sharing.

A5.62 However, if future competition were never to emerge, embedding full CCA valuations into the charge control valuations may lead to more volatility in charges than would be necessary simply to ensure a reasonable return to investors (as the value will move in line with market replacement cost which may be more volatile than a general price index like RPI).

A5.63 At this time we have not undertaken a detailed long term assessment of future competition and the prospects for entry by operators building their own local acess networks. It will be appropriate to consider this in future.

A5.64 We are also conscious, as we will discuss in more detail below, that there is a risk that we cannot accurately establish an appropriate CCA valuation for future charge controls. As we note later in this annex, we will need to review both the economic (market conditions and incentives) and practical implications (in terms of our ability to estimate the CCA value) of continuing with this approach prior to the next charge control.

Proposal on post-1997 duct valuation treatment

A5.65 In the light of the above, we therefore propose to conclude that CCA remains the appropriate approach for post-1997 valuation for this review. If we adopt this proposal we consider that this position should be reviewed in the future, most suitably in the context of the next WLA market review, to assess whether it remains justified in the context of the long term prospects for competitive entry and the practicality of determining a robust replacement valuation.

Determining a valuation of post-1997 ducts assets for the purpose of charge controls

Introduction

A5.66 We now have to derive a value for the duct assets based on the above methodology. Specifically:

- The value of the *pre-1997 assets* (i.e. the assets acquired before 1 August 1997) should be based on the HCA cost of those assets, inflated by RPI since 2005. This is a relatively straightforward arithmetical exercise, which is not affected by changes in the estimated cost of replacing the assets. The analysis set out in this annex does not affect the value of the pre-1997 assets to be used in the price controls.

- The value of the *post-1997 assets* (i.e. the assets acquired on or after 1 August 1997) should be calculated on a CCA basis. As explained below, this requires an estimate of the cost of replacing those assets as part of a national programme to replace the entire network. The analysis in this annex refers to the basis for this estimate.

A5.67 For the purpose of setting charge controls, BT has proposed a CCA valuation for the post-1997 assets of £2.9 billion, which is a proportion of the total estimated cost of replacing the entire network. The BT estimate of the replacement cost of the entire network is, in essence, based on a BT assessment of the size of the network, combined with BT estimates of the unit costs of rebuilding the network. The unit cost estimates reflect the cost saving, or "national discount", that might be achieved if the entire network was rebuilt as a single project on a planned basis, based on assumptions BT developed in conjunction with its suppliers of duct.

A5.68 This is similar, in outline, to the approach adopted in previous years. However, for the reasons set out below, we do not consider that BT's valuation results in a plausible estimate for the value of the post-1997 assets and therefore do not consider that it provides an appropriate basis for determining regulated prices.

A5.69 As explained below, we consider that a valuation derived from an estimate of replacing the network has conceptual advantages but also poses practical difficulties. Specifically, the significant change in BT's estimate between 2008/09 and 2009/10 has highlighted the degree to which this approach relies on judgment and assumption.

A5.70 Therefore, while we have set out our assessment of BT's methodology we have not sought to 'correct' it through changes to assumptions. We do not consider that we can derive a clearly demonstrable result through such an approach.

A5.71 Instead we propose that for this charge control the CCA valuation of the post-1997 assets should be based on the amount actually spent on these assets adjusted to reflect changes in construction costs. We consider that this provides a more robust starting point for estimating the cost of replacing these assets.

A5.72 It is then necessary to determine the extent to which the cost of replacing these assets would be reduced by the discount that might be achieved if they were replaced all at the same time, rather than on the piecemeal basis that actually took

place. This is the basis on which BT has now produced its own CCA estimates, and we propose to adopt a consistent approach.

A5.73 In this annex, we consider different options for estimating the CCA valuation of the post-1997 duct assets using different bases for doing so based on the historical spend . We are seeking stakeholder views on these options. In previous reviews, our own analysis has suggested that the valuation was close to that proposed by BT previously; this is no longer the case.

A5.74 Based on the analysis set out in this annex, we estimate that the CCA value of post-1997 assets is closer to £2bn, some 30% less than the value proposed by BT.

A5.75 The rest of this annex presents our analysis in more detail. Specifically, it considers:

- The link between the value of duct assets in the Regulatory Financial Statements and the value to be used in price controls;
- The basis for BT's proposed valuation of post-1997 assets;
- The reasons for which we do not consider that BT's revised valuation provides an appropriate CCA valuation for price controls; and
- An alternative basis for the CCA valuation of post-1997-assets.

The link between the RFS and price controls

A5.76 Following the 2005 Review, the basis for valuing duct assets for the purposes of price controls does not follow that in the Regulatory Financial Statements, as the RAV adjustment was used to determine the value of pre-1997 assets. However, to understand the basis for the valuation used in price controls it is first helpful to understand the basis for the valuation in the Regulatory Financial Statements.

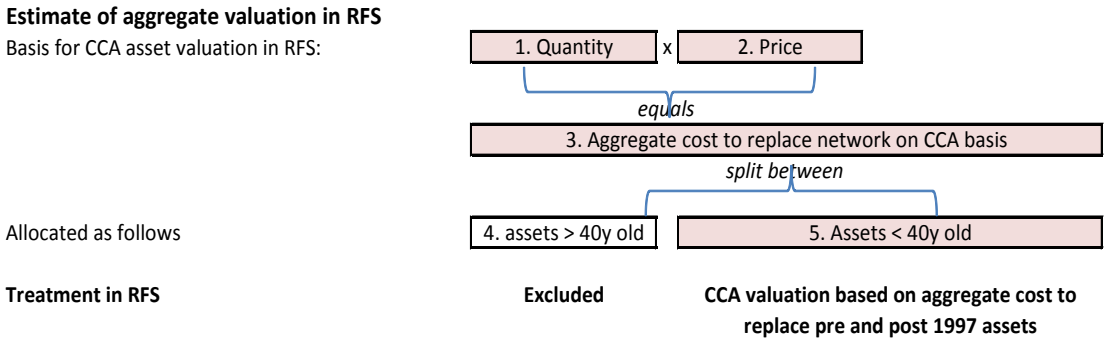
A5.77 *For the purposes of the Regulatory Financial Statements*, all duct assets under 40 years old are included on a CCA/replacement basis.

A5.78 BT derives this CCA valuation from an estimate of the cost of replacing the duct assets acquired in the last 40 years based on current contractor rates, reduced by a hypothetical scale-discount that might be achieved on these rates if the entire duct network was replaced on a planned national basis over a short period (the "national discount").

A5.79 As illustrated in the figure A5.2 below, this is, in effect, a large and complex calculation of price x quantity. BT then deducts an estimate of the proportion of this total cost that it considers relates to assets acquired more than 40 years ago to give the gross book value of the duct assets acquired in the last 40 years.

A5.80 This estimate is based on the indexation of all identified historical spend plus an assessment of historical spend for which detailed supporting evidence no longer exists (for which an aggregate CCA value assessment has been made by BT). We understand that one of the assumptions underpinning this analysis is that BT improves its productivity by 2% a year.

Figure A5.2 Estimate of aggregate valuation in RFS

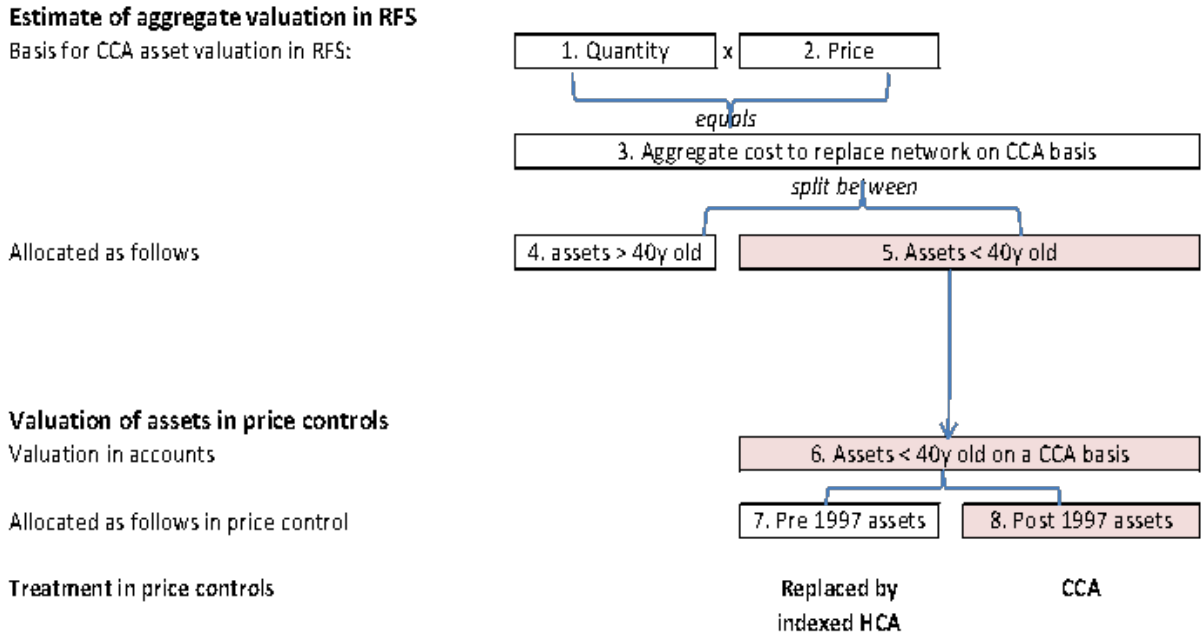


A5.81 For the purposes of setting price controls, the 2005 Review explained that:

- The value of the pre-1997 assets should be based on the HCA cost of those assets, inflated by RPI since 2005.
- The value of the post-1997 assets should be calculated on a CCA basis.

A5.82 The figure A5.3 below illustrates how these two components of the total duct valuation are linked to the CCA valuation in the Regulatory Financial Statements. Specifically, because the CCA value of the pre-1997 assets is replaced with a different figure (based on the 1997 HCA cost of those assets, inflated by RPI since 2005), only the post-1997 figure is directly linked to the new RFS value.

Figure A5.3 Aggregate valuation in RFS to Price Control



A5.83 The calculation of the indexed HCA costs of the pre-1997 assets is relatively straightforward and does not require the application of any judgment other than the choice of asset life. As the asset life judgement has not changed since the last time we set prices it is not revisited here.

A5.84 The calculation of the CCA value for post-1997 assets is more complicated. BT's valuations might be considered in two stages:

- The estimated CCA cost of replacing the entire network; and
- The proportion of this cost that is asserted to relate to post-1997 assets.

A5.85 We consider BT's approach to both stages below. In doing so, we note that the only value that will affect our proposed price controls relates to the post-1997 assets. However, we consider both stages of the valuations to ensure that they reflect consistent and coherent assumptions and calculations.

BT's proposed CCA valuation of post-1997 assets

A5.86 Below, we explain BT's approach to its valuation of post-1997 assets by reference to the two factors identified above: specifically, the cost of replacing the entire network (as reflected in the Regulatory Financial Statements) and the cost of replacing the post-1997 assets.

BT's estimated cost of replacing the entire network

A5.87 In this section, we explain how BT derived its estimate for the CCA cost of replacing the entire duct network.

A5.88 As our focus is to determine the post-1997 duct value, BT's estimate of this replacement cost is only one element of the evidence needed to inform our decision. However, it provides important context for our assessment of the valuation attributed by BT to the post-1997 assets. Specifically, BT's post-1997 valuation should be prepared on a consistent and coherent basis, using similar assumptions regarding the national discount and indexation.

A5.89 Estimating the cost of replacing a national duct network is a complex task, requiring an assessment of the quantity of different types of duct to be replaced and the price that would be paid to replace each.

A5.90 BT estimates the quantity of duct to be replaced using an electronic geographic database that is used for operational purposes. This database includes a sample of exchange areas. BT then extrapolates the data to represent national coverage. The database does not provide information on the age of the assets.

A5.91 BT then estimates the price to replace the duct using current contractor rates.

A5.92 Actual rates are reduced by an estimate of the hypothetical "national discount". It is difficult to estimate the level of discount that might be achieved in such circumstances. In recent years, BT has applied a discount of 45% to its ongoing contractor rates based on a BT internal assessment informed by consultation with its then set of contractors.

A5.93 In 2009/10, following the negotiation of a new civil engineering contract for the maintenance and provision of ducts, BT updated the cost and national discount elements of its valuation for the duct assets. Specifically:

- the ongoing actual contractor rates for the provision of duct were reduced by, on average, 8% under the terms of the new contract. BT has explained that this was due largely to the move to a single national supplier from multiple regional suppliers; however,

- BT's has also reduced its estimate of the potential national discount from 45% to 14.5%. BT has explained that it has revised it estimate downwards in light of estimates obtained from its single supplier, which BT suggests has far greater visibility of the savings that might be achieved if full network rebuild was undertaken on the planned national basis.

A5.94 In light of the new information provided by the new contracts and discussions with its suppliers, BT increased its estimate of the cost of replacing the duct network to £6.5 billion, compared with its previous estimate of £4.8billion in 2008/09, as summarised in the table A5.4 below.

Figure A5.4 Comparison of 08/09 and 09/10 Duct valuations

BT's valuations	**2008/09**	**2009/10**	**Change**
	£bn	**£bn**	**%**
Gross Replacement Cost of all duct assets	[✂]	[✂]	+37%
Less assets more than 40 years old	[✂]	[✂]	+35%
Gross Replacement Cost of duct assets less than 40 years old	**11.1**	**15.1**	**+36%**
Less depreciation	(6.3)	(8.6)	+36%
Net Replacement Cost of assets less than 40 years old	**4.8**	**6.5**	**+35%**

A5.95 The large increase in the replacement cost of the assets is due primarily to the less optimistic assumption regarding the national discount, which more than offsets the reduction in contractor rates negotiated in the year.

A5.96 This calculation provides the basis for the valuation included in the 2009/10 Regulatory Financial Statements.

BT's estimated cost of replacing the post-1997 assets

A5.97 In this section, we explain how BT has estimated the proportion of the total CCA cost that relates to post-1997 assets.

A5.98 For the purposes of price controls, we asked BT to estimate the proportion of the replacement cost that relates to the post-1997 assets.

A5.99 As the database used by BT to identify its physical duct assets does not provide information on the age of the assets, BT has to estimate the proportion of the assets represented by post-1997 assets on a different basis. It does this by applying an uplift to post-1997 capital expenditure intended to reflect the changes in the price since the capital expenditure was undertaken

A5.100 BT derives this view of changes in price by estimating the extent to which, in each accounting year, the CCA valuation has moved as a consequence of the change in the price which underpins its aggregate gross replacement calculations (net of the national discount). For example, the change in net price embedded in BT's 2010 valuation was 47%; BT's method for valuing the post-97 assets effectively assumes that this 2010 "price change" of 47% should be interpreted as an increase of that amount in the replacement cost of capital expenditure undertaken in each and every previous year, uniformly applied.

A5.101 The resultant value for post-1997 expenditure is then adjusted for depreciation.

A5.102 Based on this approach, BT has split the aggregate va*luation betwe*en pre and post-1997 assets as set out in the table A5.5 below.

Table A5.5 Comparison of 08/09 and 09/10 duct valuations split by pre- and post- 1997 components under 40 years old

BT's valuations	2008/09 £bn	2009/10 £bn
Pre-1997 assets (less than 40 years old)		
Gross Replacement Cost	8.8	11.4
Less depreciation	(5.9)	(7.9)
Net Replacement Cost	2.9	3.6
Post-1997 assets		
Gross Replacement Cost	2.3	3.7
Less depreciation	(0.4)	(0.7)
Net Replacement Cost	1.9	2.9
Total assets (less than 40 years old)		
Gross Replacement Cost	11.1	15.1
Less depreciation	(6.3)	(8.6)
Net Replacement Cost	4.8	6.5

A5.103 On this basis, BT has proposed a CCA value based on the Net Replacement Cost of the post-1997 duct assets of £2.9billion, an increase of around 50% from its 2008/09 estimate.

Assessment of whether BT's valuation of post-1997 assets is justified by the evidence

A5.104 In this section we consider whether BT's valuation of post-1997 assets is reasonable.

A5.105 In respect of the BT's *aggregate* valuation, we have reviewed BT's revised aggregate valuation and concluded that it is difficult to reach our own view on whether BT's aggregate valuation is reasonable. We note that this value was reflected in the Regulated Financial Statements, which were audited.

A5.106 In respect of BT's *post-1997* valuation, we have been unable to reconcile BT's valuation of post-1997 assets with other evidence of replacement values derived from their expenditure and external cost indices. Specifically, BT's valuation of post-1997 assets appears to be overstated when compared to other evidence.

A5.107 However, we consider that this difference is likely to be a consequence of potential internal inconsistencies in the way BT has established a valuation of post-1997 assets. Specifically;

- In its aggregate valuation, BT used price estimates that are not reconciled to the indices used to calculate write-offs and distribute the aggregate asset value between assets of different ages;

- The price index used by BT and applied to post-97 expenditure is derived in a way that gives rise to a potential error as it does not necessarily reflect price changes as they occur over time. Specifically, the change in valuation observed in BT's 2009/10 Regulatory Financial Statements appears more likely to be a consequence of potential underestimates of prices in prior years, that the evidence suggests have prevailed for some time. It is not a fair reflection of the way in which prices of duct behaved in the years in question.

A5.108 In its aggregate valuation, BT has used price estimates that are not reconciled to the indices used to calculate write-offs and distribute the aggregate asset value between assets of different ages. We set out below:

- our assessment of the aggregate valuation;
- the basis of our concerns around the post-1997 valuation proposed by BT;
- BT's response to our questions on the differential; and
- our assessment of the BT's evidence and the potential reasons for the difference between BT's estimate and alternative estimates.

BT's aggregate valuation

A5.109 In this section we provide our assessment of BT's aggregate valuation of its duct assets.

A5.110 As explained above, BT's aggregate valuation draws on estimates of the quantity of duct to be replaced and the price that would be paid to replace it.

A5.111 The quantity is based on information taken from an electronic geographic database that BT uses for operational purposes. We have no reason to believe that this does not provide a reasonable basis for identifying the assets in use.

A5.112 BT's estimate of the *price* to replace the duct is based on current contractor rates, reduced by an estimate of the hypothetical "national discount".

A5.113 Given that the current contractor rates are a matter of fact based on recently negotiated contracts, we have no reason to believe that these do not provide a sensible starting point for the price calculation.

A5.114 However, it is more difficult to form a view on the reasonableness of the national discount that BT considers might be achieved. BT has been able to refer to a supplier estimate that supports its figure; we have no basis for disputing this figure but would be cautious about attaching too much weight to a supplier estimate of the discount it would, hypothetically, give if was awarded a contract that will never be placed.

A5.115 We commissioned BDO LLP to carry out an independent assessment of BT's valuation methodology, to identify the component processes and related analysis, research and assumptions that underlie that methodology. The review focussed on the approach and BDO were not asked to undertake an independent valuation of BT's duct or to validate the current valuation.

A5.116 The BDO report shows that BT's valuation process is complex involving the extraction and processing of large quantities of physical and financial data.

Throughout the process it is necessary for BT to make judgements and estimates in the detailed methods used at each stage in the process.

A5.117 In particular, the report highlights how the valuation, is dependent on a small number of key input assumptions, notably the discount factor, which has implications for the predictability of future valuations. A non-confidential version of the BDO report will be published shortly after publication of this consultation.

A5.118 BT's RFS valuation is also dependent on the level of write-offs which is linked to a separate apportionment calculation. We have reviewed this calculation and note that it includes assumptions on trends in duct construction costs which appear inconsistent with the revised aggregate valuation.

A5.119 In this respect, we asked PwC, the auditors of the Regulatory Financial Statements, to provide some clarification of the extent to which the audit of the Regulatory Financial Statements considered the valuation of duct

A5.120 PwC's response, which must be be read in the context of its letter to Ofcom of 14 March 2011 (published with this consultation at Annex 16) explained that: *"Duct is a significant asset contributing towards the total mean capital employed and costs in a number of the markets in the Access Markets Group. Our audit plan includes procedures in respect of the elements of BT's current cost valuation of duct assets, including a focus on changes to data used to establish the current cost valuation, in order that we may gather sufficient audit evidence to draw conclusions on the RFS as a whole".*

A5.121 PwC also noted, however, that, *"An audit is designed to enable the auditor to express an opinion on the financial statements as a whole and not, for example on individual account balances or disclosures"*.

A5.122 We note that BT's aggregate value is subject a large number of internal assumptions. We note also that there appear to be inconsistencies in the assumptions used to allocate costs, including the those between the price used by BT in establishing its Gross Replacement Cost (before national discount) of the network and the price index used by BT in splitting the assets between those assets between those that are more than 40 years old and those that are less than 40 years old.

BT's post-1997 valuation

A5.123 In this section we set out why we believe BT's valuation for post-1997 assets is overstated.

A5.124 To inform our assessment of BT's valuation of the post-1997 assets, we compared BT's valuation against the capital expenditure on duct assets actually incurred over the 13 year period from 1997.

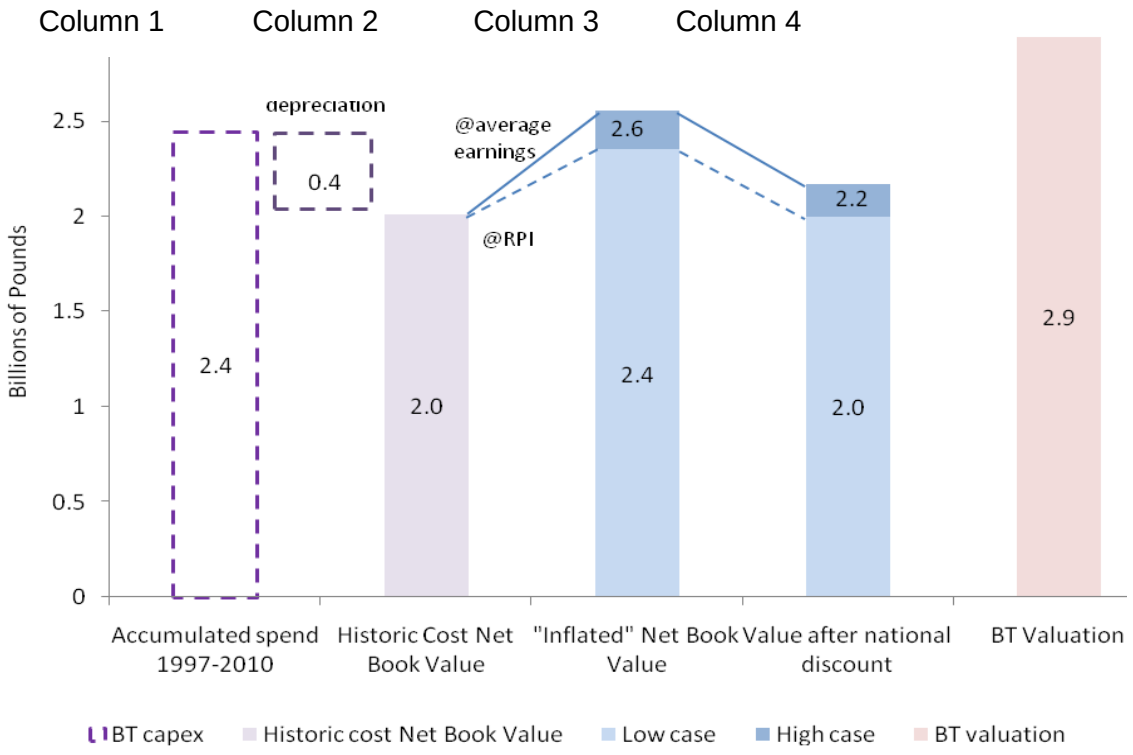
A5.125 Absent significant changes to the means of laying duct, we would have initially expected that the cost of replacing the duct laid over the last 13 years should be broadly similar to the historical cost of laying it, subject to the effects of inflation offset by the effects of (potentially) more efficient working practices.

A5.126 After taking account of the national discount that BT considers would be achieved if the duct network was all rebuilt over a short period, we would expect that BT's

estimated net replacement cost would be *less* than the historical expenditure (as inflated but allowing for accumulated depreciation).

A5.127 However, as illustrated in the figure A5.6 below, BT's estimate of the Net Replacement Cost of the post-1997 duct assets appears to be significantly more than would be expected based on historical spend, even before adjusting the historical spend to reflect the national discount.

Figure A5.6 Project of replacement cost for post-1997 duct



A5.128 The graph sets out information on the amount actually spent on the duct assets since 1997, as follows:

- In column 1, the total spend on duct assets since 1997 of £2.4 Billion less the accumulated depreciation on those assets, of £0.4 Billion;
- In column 2, the net book value of those assets, on an HCA basis, of £2.0bn.

A5.129 The graph then projects how these values might be expected to have changed since they were actually incurred, as follows:

- In column 3, we estimate how costs might have been affected by inflation on two simple bases. If duct build costs had increased in line with general inflation, we would expect the net replacement cost to be around 17% higher than the net book value (at £2.4 Billion). If costs had moved in line with average wages, we would expect the net replacement cost to be around 27% higher (at £2.6 Billion).
- In column 4, we reduce these values by 14.5% to reflect the effect of BT's estimated national discount, thus making our simple estimate consistent with the

basis on which BT's own CCA Net Replacement Costs are produced and ensuring comparability.

A5.130 Using this approach, we would have expected that, absent any significant changes to the cost of building duct that was not reflected in the inflation assumptions described above, BT's net replacement cost of the post-1997 duct would be around £2 Billion.

A5.131 On this basis, BT's estimated net replacement cost of £2.9 Billion was significantly higher than we might have expected. We therefore asked BT to explain why this might be the case. Specifically, we asked BT to provide:

- An explanation for why these these two approaches delivered different results;
- Additional indexation analysis to support BT's valuation results, by reference to the costs incurred; and
- Evidence on why duct costs may have increased in real terms over the valuation period.

BT's response

A5.132 BT has offered a range of reasons why duct costs may have increased in real terms and why its assessment is reasonable. We consider these below.

A5.133 BT quoted data from the Office of National Statistics, which BT argued was consistent with its position that "the type of activity involved in the construction of duct has been less amenable to efficiency improvements than in most other market sectors. For this reason, in the long run we would expect there to be a trend where duct becomes more expensive to build relative to other prices – i.e. that one would see prices increase by 'RPI plus', with the plus reflecting differences in productivity gains."

A5.134 BT also stated that duct construction activity is likely to incur relatively higher costs for implementing and ensuring compliance with health and safety legislation. In addition, BT commented that changes in legislation over time have tended to add to costs. BT quoted the New Roads and Streetworks Act 1991 and the Traffic Management Act 2004 as examples of legislation that imposes additional costs including administration costs.

A5.135 This may explain some of the increase; for example, the General Building Cost Index (GBCI) published by the Royal Institute of Chartered Surveyors ("RICS") equates to approximately RPI plus 1.35% for the post-1997 period suggesting that the costs of constructing ducts over this period could have increased at a rate in excess of inflation as measured by RPI.

A5.136 However, we estimate that duct costs would need to have increased by an average annual rate of approximately 3.4% above RPI for the cost of replacing the duct acquired during the post-1997 period to be so much higher than the original cost of acquiring it.

A5.137 We therefore doubt that the cost of replacing the post-1997 duct assets can have increased by as much as BT's valuation suggests. Indeed, there are reasons to believe that it has not increased in this way, as follows:

- The underlying reason provided by BT to support a significantly higher valuation for 2009/10 is an increase in the estimated cost of replacing duct. This estimation error would have been present since 1997. However sense checks and audit scrutiny of the valuation results from 1997 to 2009 did not indicate a fundamental calculation inaccuracy.

- The run rate of recent capital expenditure (approximately £206m pa over the last 5 years) compares to a CCA depreciation charge of £311m in 2009/10. The size and direction of this difference - for a relatively stable and long lived asset base - suggests that the revised CCA valuation may not be robust. There are a number of possible explanations for such a difference such as a) the condition of the duct network is not in a steady state or that b) repair and renewal investment is cyclical. We have found no evidence to suggest these conditions exist.

- As noted above BDO's independent assessment of BT's valuation process identified inherent potential instability in the valuation from year to year, which is not related to underlying changes in value.

A5.138 We also asked PwC to provide some clarification of the extent to which the audit of the Regulatory Financial Statements considered the basis of BT's valuation of post-1997 assets. As set out in PwC's response of 14 March 2011, PwC explained that, *"...audit procedures in connection with one valuation method and performed for one purpose are not designed to, and cannot be assumed to provide any comfort or assurance over another valuation method for another purpose, e.g. the valuation of post 1997 duct assets on a stand-alone basis for the purpose of the RAV model".*

A5.139 In light of this, we do not consider that PwC's audit of the RFS means that we should accept BT's valuation for the purpose of setting the charge controls.

Ofcom's interpretation of higher asset values

A5.140 In this section, we explain why we do not think that BT's explanations provide sufficient evidence to demonstrate that its proposed value is reasonable.

A5.141 As explained below, we have identified several factors which may have contributed to BT's overstatement of the value of its post-1997 duct assets. Specifically;

- The price index used by BT and applied to post-97 expenditure is derived in a way that gives rise to a potential error as it does not necessarily reflect price changes as they occur over time. The change in valuation observed in BT's 2009/10 Regulatory Financial Statements appears to be largely attributable to a change in the valuation methods employed, rather than to any underlying cost trend.

    - In our view, an index used for the purposes of estimating the current cost valuation of assets should be based on a methodology applied consistently over time. BT's approach does not meet this requirement.

    - This does not necessarily call into question BT's aggregate valuation; the sharp increase in the 2009/10 valuation may be a consequence of underestimation in previous years. In our view, however, it does represent a flaw in its valuation of post-1997 assets;

- BT has not applied a national discount factor to its estimate of the value of post 1997 assets. This appears to be inconsistent with its aggregate valuation; and

- BT makes no allowance for productivity improvement in its post-97 valuation, even though we understand that the methods used to apportion the aggregate valuation between assets over and under 40 years old (which is audited) include a productivity improvement assumption of 2%.

A5.142 Ofcom's simple estimate, as illustrated in the graph above, considers the extent to which the cost of replacing the post-1997 assets might have changed since the assets were acquired. This estimated change in the cost of replacing the post-1997 assets is effectively added directly to the cost of acquiring those assets. We believe that any CCA absolute valuation should be comparable to, and reconcilable with, analysis of this type.

A5.143 BT's approach does not give a CCA valuation that is comparable to this analysis. We have therefore considered why this might be the case.

A5.144 We have noted that we are unable to validate the aggregate total duct replacement valuation estimated by BT. However, we did note that we observed that there were inconsistencies between the valuation of the allocation basis BT has used to allocate their total value between written off assets, pre-1997 and post-1997 duct.

A5.145 It is clear that a significant contributor to BT's high post-1997 estimate is attributable to the methodology and assumption used by BT's to allocation value from the total aggregate value to post-1997 assets. We set out our argument for this assessment below.

Methodology.

A5.146 As discussed earlier, BT's estimation approach for estimating post-1997 asset replacement value is the application of an uplift to post-1997 capital expenditure intended to reflect the changes in price the capital expenditure was undertaken. It derives this view of changes in price by estimating the extent to which, in each accounting year, the CCA valuation has moved as a consequence of the change in the price which underpins its aggregate gross replacement calculations (net of the national discount).

A5.147 In the example provided above, we explained that the change in net price embedded in BT's 2010 valuation was 47% and noted that BT's method for valuing the post-97 assets effectively assumes that the replacement cost of capital expenditure undertaken in each and every previous year should all be inflated by this amount.

A5.148 The effect of this approach is that, for assets bought relatively recently, the gross replacement cost is estimated to be significantly higher than the amount actually spent on those assets.

A5.149 As noted above, BT's approach appears to be flawed, as it involves inflating actual expenditure by a factor which reflects a change in BT's valuation methodology, rather than underlying cost trends.

A5.150 In addition, BT then omits to apply the discount factor used in its aggregate valuation – or indeed any discount at all - to the resulting estimate of grossed up

post 1997 expenditure. This also seems to be a further inconsistency in its approach.

Assumptions.

A5.151 In addition, as we have observed earlier there is an inconsistency between the price estimates used to derive the aggregate asset value and the indices uses to attribute the same asset value between write-offs, pre- and post-1997 assets. In essence the indices used to attribute value assume a lower level of duct cost inflation over the years than would be implied by the new total aggregate value. The effect of using this lower cost inflation assumption is to attribute more value to newer assets.

A5.152 To illustrate the impact of both these factors more clearly, we have considered the impact of BT's approach on the duct assets acquired in the two most recent years (2008/09 and 2009/10).

A5.153 In the absence of any major changes to the cost of building duct in the last year or so, we would expect that the cost of replacing the duct bought in the last two years to be very similar to the cost of building that duct in the first place (as there would be no reason for it to have changed much in such a short period). After applying the national discount, we would therefore expect the replacement cost of the duct acquired in the last two years to be less than the actual cost.

A5.154 Actual capital expenditure in this period was around £360million. Adjusting this figure for price changes and BT's estimate of the national discount suggests a projected net replacement cost today of around £290million.

A5.155 By comparison, BT's estimated net replacement cost for these assets is around £480million, around 30% more than was actually spent when the assets were acquired, on average, 1 year ago.

A5.156 BT has offered no plausible explanation why assets built in recent years should have increased in value so substantially and our initial view is that BT's valuation model fails to weight the impact of inflation and other adjustments correctly over the period during which the total asset base was constructed.

A5.157 The error appears to be due mainly to BT's derivation and application of the "price variance" index, in what we believe to be a incorrect way.

A5.158 This error is then compounded by the failure to recognise that, in order to remain consistent with the values shown in the Regulatory Financial Statements, BT should apply the national discount to its own indexed value.

Alternative approaches to CCA valuations

A5.159 As we do not accept BT's basis for valuing post-1997, and there is no clear approach to 'correcting' BT's methodology it is necessary to consider alternative approaches, where the value can be derived independently.

A5.160 The use of an "absolute" valuation, by reference to an estimate of the cost of building a new network is not the only method that can be used to derive a CCA valuation. Indeed, we consider that the practical difficulties in deriving a robust valuation on this basis would indicate that it may not be the most appropriate method.

A5.161 In the knowledge that we were undertaking this charge control review and aware of the RFS change to duct valuation stakeholders provided contributions to the question of the valuation of BT's ducts. In a report on Cost Accounting and Price Controls commissioned by UKCTA (the UK Competitive Telecommunications Association, which represents BT's main competitors), Towerhouse Consulting provide an analysis of duct valuation. This point is also addressed in a Frontier Economics report on Openreach's next price controls, commissioned by Sky and the Talk Talk Group.

A5.162 The Towerhouse Consulting paper examined the relationships between price controls, cost accounting methodologies and regulatory policy objectives. The aim of the paper was to assess whether the current approach to charge controls could be improved and an ideal price level identified, with a focus on wholesale local access and wholesale fixed analogue exchange line services in particular. The reports notes:

> 'The current charge control regime, characterised by its reliance on current cost estimates supplied by BT, has in many ways worked well over the past decade. However, the recent change in BT‟s valuation of its local access duct network has drawn attention to a number of weaknesses in the regime. In particular:
>
> - current cost accounting inevitably involves a high degree of judgement, and in some circumstances requires entirely arbitrary assumptions;
> - as a result, BT has the opportunity and incentive to choose these assumptions in a self-interested manner; and
> - the extent to which charge controls allow BT to recover more than their actual costs is not clear.
>
> Overall, these issues create a high degree of uncertainty over the future path of prices subject to charge control.
>
> We do not believe that there is a quick fix to address these problems. In the short term, the goal should be to protect stakeholders from unnecessary price volatility.'

A5.163 The Frontier Economics report addressed the same objectives in relation with cost recovery and "predictability and transparency", which it says may be met via the use of a "crystallised" Regulatory Asset Value both for post-1997 and pre-1997 duct assets..

A5.164 Both studies emphasised the need for a valuation of duct assets that allows for efficient and informed investment decisions and generates adequate economic incentives, while avoiding excessive cost-recovery for BT. These principles, and the preference for index-based valuation methods which the studies show, are compatible with our own approach.

A5.165 To inform our approach, we commissioned Analysys Mason to review alternative approaches (their report is published as part of this consultation). Analysys Mason undertook a review of how such assets are valued elsewhere and the pros and cons of alternative approaches.

A5.166 Their assessment was that if a CCA approach remained appropriate an absolute valuation was desirable. However, they note that in the absence of a robust absolute valuation, indexation is an acceptable "second best" method of valuation, ideally using an index derived from industry costs. They do note that continued use of indexation to estimate CCA values is likely over time to lead to a variation from a 'true' replacement value.

A5.167 We consider that establishing an alternative robust approach for determining an absolute valuation for post-1997 duct assets, would require us to undertake a fundamental review of BT's duct infrastructure that goes beyond the scope of, or time available for this charge control review. It is also not clear at this time that we can develop an alternative absolute valuation approach. Therefore, given the concerns expressed above over BT's proposed valuation of post-1997 assets, we have considered alternatives derived from indexation of actual expenditure since 1997. However, we consider that any approach should as far as possible remain consistent with the principles of valuation used in the past, so that we will not solely draw on indexation but also consideration of how a true 'replacement' network would be provided.

A5.168 As noted by Analysys Mason, we recognise that, over time, the use of indexation could lead to a valuation that diverges from reality. However, we consider that, provided an appropriate indexation basis is chosen, the scope for significant variation over the last 13 years is relatively small. However, as noted earlier, prior to the next charge control we will need to consider whether the valuation methodology for duct remains sound both in terms of the economic incentives discussed earlier and the robustness of the CCA valuation for post-1997 assets, potentially in the context of the next WLA market review.

A5.169 In deciding which appropriate indices might provide the most appropriate bases for estimating CCA values based on actual spend we have considered the extent to which the underlying basis for each index is relevant to the cost of duct and have considered the extent to which BT's duct costs have moved in line with various indices in the past.

A5.170 Analysys Mason reviewed available indices They noted that there are a number of industry-specific price indices that potentially could be used for duct assets. In particular they cited two indices published by the Royal Institute of Chartered Surveyors ("RICS"), the General Building Cost Index ("GBCI") and the All-in Tender Price Index ("TPI"). The GBCI is a national index that measures the cost of construction works, including materials and labour[10]. The TPI measures actual tender prices charged for construction work. This has historically been more volatile than the GBCI, with significant changes due to changing economic conditions. This reflects the fact that it includes margins earned by construction contractors, and not simply input costs, as are measured by the GBCI.

A5.171 They also noted other regulatory authorities, both in the UK and elsewhere, have used indexing in the roll-forward of asset valuations. As discussed above, Ofwat specifies the use of the RPI for indexation. Likewise, the UK"s air traffic control regulator uses a general index for its price regulation calculations.

[10] The General Building Cost Index is published by the Building Cost Information Service (BCIS), a service of the Royal Institute of Chartered Surveyors. Information on the GBCI and the GBCI data, including 5-year forecasts, are available from BCIS at http://www.bcis.co.uk/.

A5.172 We have reviewed the appropriate index for use in our estimate. Clearly, given its use in other elements of our charge control we considered whether Retail Prices Index ("RPI") was appropriate. It is a widely used and well understood price index. However, as illustrated in the Analysys Mason report industry price indices have tended to run significantly above RPI. We therefore do not consider that RPI provides an appropriate basis in this case.

A5.173 We considered the alternative options set out by Analysys Mason as best fitting the duct construction market, GBCI and TPI. The TPI based on actual tender prices charged for construction work is clearly attractive as it gives a 'spot' price of values in the market. However, as noted by Analysys Mason,TPIs has historically been more volatile than the GBCI, with significant changes due to changing economic conditions. This reflects the fact that it includes margins earned by construction contractors, and not simply input costs, as are measured by the GBCI. This suggests that this is not as robust a basis for a forward valuation of duct.

A5.174 The GBCI is based on a cost model of an average building and reflect changes in the costs of labour, materials and plant costs. We therefore consider that it provides a more starting point for an assessment of changes in the cost of building duct.

A5.175 However, as noted above we are seeking to be consistent with the general approach taken by BT. Accordingly, we consider that we should continue to apply the "national discount" that BT considers would be achieved if the network was to rebuilt on a planned basis over a short period. This is, of course, not reflected in the GBCI. To capture the effect of this discount, it would be necessary to reduce the indexed value by an amount to reflect the potential discount.

A5.176 BT estimates that a national roll-out discount of 14.5% could be achieved. Other stakeholders have suggested that this may underestimate the discounts that could be achieved through effective management of multiple contractors. However, in the absence of a clearly defined alternative we propose to continue to use 14.5%.

A5.177 As illustrated in the Analysys Mason report, we also observe that BT appears be achieving better value for money in its costs than the UK industry average. In its report, Analysys Mason suggests that this could be by as much as 2% each year.

A5.178 We are not certain that there is evidence that BT is achieving a productivity premium of 2% over the industry average in duct. BT is reliant on contractors for its duct provision the cost of which would be expected to align towards industry averages. However, given BT's buying power and evidence of recent contract negotiations we consider that there is evidence that BT may be achieving an above average productivity delivery in duct in the order of 1%.

Proposed range of valuation for post-1997 assets

A5.179 Based on the analysis set out, we consider that the range of plausible CCA values (before depreciation) is defined by the extent to which BT's cost are below the industry average[11]:

- at the high end, actual expenditure indexed by GBCI each year, less 14.5%.

[11] Historic duct expenditure is available as part of the RAV model which will be available published in the near future

- at the low end, actual expenditure, indexed by GBCI – 1% each year, less 14.5%

A5.180 The impact of these approaches is summarised in Figure A5.7 below:

Figure A5.7 Ofcom estimate of CCA for post-1997 assets

	Low case £bn	High case £bn
Gross Replacement Cost	2.5	2.7
Less depreciation	(0.5)	(0.5)
Net Replacement Cost	**2.0**	**2.2**

A5.181 We have used a valuation of £2.1billion in our modelling for this consultation.

A5.182 To consider the reasonableness of our assessment, we asked BT to calculate the annual unit cost trend that was consistent with its proposed 2010 asset valuation and assumptions.

A5.183 BT explained that an annual unit cost trend of RPI+1.35% would be consistent with its aggregate valuation of £[✂]billion. The effects of a long term trend of RPI+1.35% is broadly similar to that of GBCI.

A5.184 We therefore asked BT to re-run its apportionment of the aggregate asset value between pre-1997 and post-1997 assets using indexation of RPI +1.35%.

A5.185 On this basis, BT's estimate of the net replacement cost of the post-1997 assets aligned closely with the top of our valuation range.

Annex 6

Volume forecasts

Introduction

A6.1 This Annex explains our approach to volume forecasts for the services within the scope of this review.

A6.2 Future demand projections have an impact on aggregate and unit costs for the following reasons:

- the existence of fixed costs means that unit costs will increase if volumes fall, because the fixed costs must be recovered over fewer lines;
- shifts in demand (e.g. from WLR to MPF) will result in changes to the profile of cost recovery;

A6.3 For the purpose of our cost modelling, it is necessary to forecast future demand for a wide range of in-scope and out of scope services. The demand for several of these services is interlinked with demand for other services. It is therefore difficult to forecast demand for all of these services with certainty, particularly on a year-by-year basis for several years.

A6.4 To forecast volumes for the charge control modelling, we have used the following sources:

- We asked Openreach to provide forecast volumes for the period to 2013/14;
- we obtained volume forecasts from other CPs who purchase LLU and WLR[12];
- we analysed existing historical data to check the 2010/11 volumes;
- we analysed existing trends in WLR, MPF and SMPF volumes to see how they compare with the trends shown by the Openreach forecasts;
- we reviewed independent forecasts from other sources.[13]

A6.5 Taking account of all these sources, we believe the forecasts shown below represent a plausible outcome, although we are conscious of the fact that other scenarios may occur and forecasts will change over time. As such, we would welcome stakeholders' views on the future level of demand and the likely changes in the mix of demand for the different wholesale access services.

A6.6 The main trends in our forecasts are as follows:

- a reduction in the aggregate demand for fixed lines, from 23.8 million in 2009/10 to 22.7 million in 2013/14;
- a substantial shift in demand from WLR to MPF; and

[12] For this exercise we obtained volume forecasts from C&W, O2, Sky, Talk Talk, and Virgin Media.
[13] We have reviewed forecasts from Analysys Mason and IDATE (FTTx Watch Service 2010).

- a reduction in demand for SMPF, from 11.8 million lines in 2009/10 to 9.2 million in 2013/14.

Volumes

A6.7 The table below sets out the key volume forecasts used in our cost modelling.

Figure 6.1: Ofcom volume forecasts

Product Description	Family	2009/10	2010/11	2011/12	2012/13	2013/14
MPF Rentals	MPF	2,253	3,814	5,230	6,040	6,660
MPF New Provide	MPF	66	465	540	560	550
MPF Single Migrations	MPF	939	1,233	1,340	1,200	1,140
MPF Mass Migrations	MPF	610	479	200	90	50
SMPF Rentals	SMPF	11,760	10,662	10,140	9,640	9,160
SMPF New Provides	SMPF	2,923	2,577	2,480	2,410	2,330
SMPF Single Migrations	SMPF	318	300	280	240	200
SMPF Bulk Migrations	SMPF	103	586	130	80	20
PSTN Premium (Inc Street & Man)	WLR	5,728	5,072	4,820	4,710	4,600
PSTN - Basic - Rental	WLR	15,851	14,767	13,380	12,410	11,470
PSTN - Premium - New Connections	WLR	514	576	550	520	500
PSTN - Basic - New Connections	WLR	1,045	895	790	750	700
PSTN - Premium - Transfers/Takeovers	WLR	511	424	410	410	410
PSTN - Basic - Transfers/Takeovers	WLR	3,906	2,840	2,520	2,520	2,520
MPF Cease	LLU Other	442	452	950	900	810
SMPF Ceases	LLU Other	1,988	2,024	1,340	1,240	1,120
MPF Jumper Removal	LLU Other	56	77	100	110	120
SMPF Jumper Removal	LLU Other	609	415	400	390	370
Comingling Rentals (inc 21CN)	LLU Other	10	13	10	10	10
New POP	ISDN30	1	2	2	1	1
Intial Tie Cable Installs (inc 21CN)	ISDN30	26	45	30	10	10
ISDN 30	ISDN30	2,146	2,033	1,810	1,530	1,280
ISDN30 - Connections (Incl. Growth)	ISDN30	186	168	180	140	120
ISDN30 - Transfers	ISDN30	296	271	170	170	170

The forecasts indicate that there will be 1.1 million less lines overall by 2013/14

A6.8 Openreach's total number of lines in 2009/10 was 23.8 million. For the purpose of our cost modelling, we have forecast further reductions to 22.7 million lines by 2013/14.

A6.9 In the absence of other factors, we might expect to see an increase in take-up of MPF corresponding with a decrease in take-up of WLR and, therefore, we would not expect to see much movement in the total number of lines overall.

A6.10 However, fixed line telephony has been declining year-on-year since 2002. Ofcom research indicates that in 2009 it fell by 3.4% (1.1 million lines), the largest annual

decline since 2002. This fall was primarily driven by a growing number of households and businesses going mobile-only.[14]

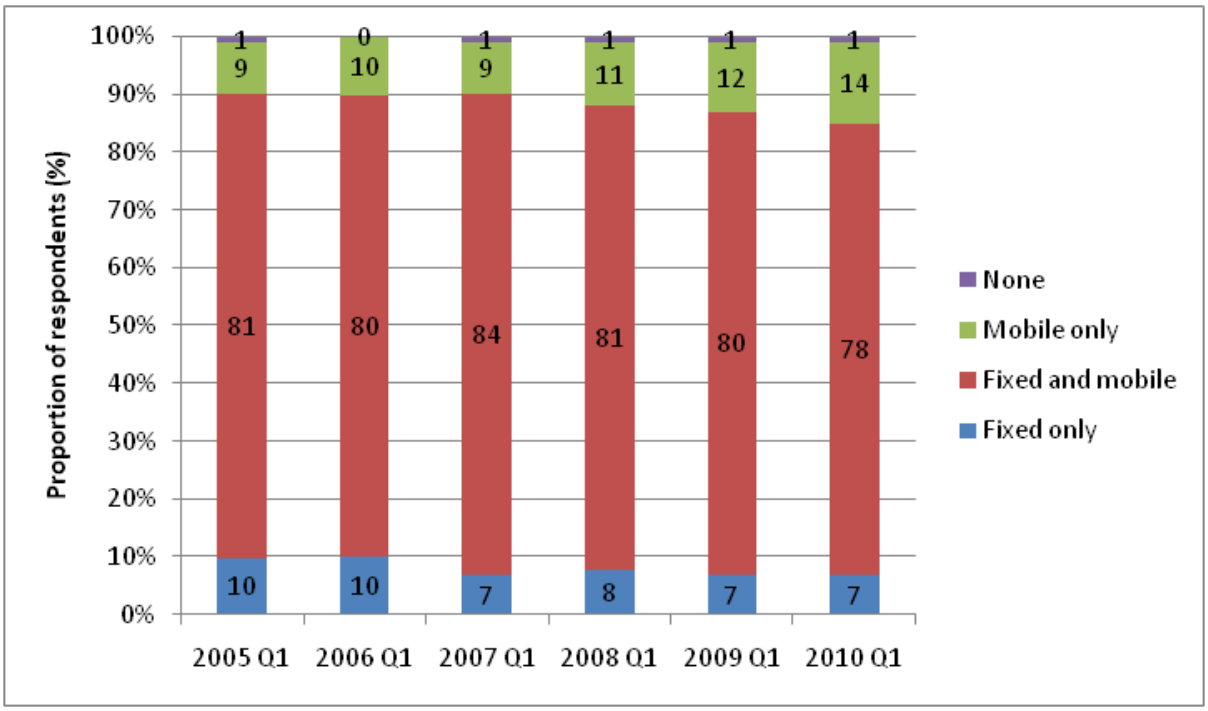
A6.11 We have, therefore, identified several reasons as to why a decline might occur:

- an increase in the number of mobile-only households;
- a reduction in the number of business lines;
- a decline in new household development.

The historical data shows an increase in the number of mobile-only households over the past five years

A6.12 In recent years there has been an increase in the number of households that do not have a fixed analogue telephone line, but instead use mobile handsets as their sole form of voice telephony. Ofcom research indicates that in the three years to Q1 2010, the proportion of mobile-only households increased by five percentage points to 14%.[15]

Figure 6.2 Household penetration of fixed and mobile telephony



Source: Ofcom

A6.13 The number of households using a mobile broadband connection as their only form of broadband is also increasing. In Q1 of 2010 6% of all households had a mobile broadband connection and no fixed-line connection, an increase of around 50% since Q1 2009. Take-up of mobile broadband more generally, however, appears to have begun to level-off, reaching a peak of 15% in Q3 2009. This can be explained

[14] Communications Market Report 2010, p. 281, http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf
[15] Communications Market Report 2010, p. 337, http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf

by the slower speeds offered by mobile broadband compared to a fixed-line connection as well as a perceived lack of reliability.[16]

A6.14 It is, therefore, difficult to accurately predict whether the upwards trend in mobile-only households will continue or if the number will begin to level-off. There is certainly evidence of a recent slowdown in fixed-mobile substitution.

There has also been a reduction in the number of analogue lines used by businesses

A6.15 In 2009, the number of business lines fell by 5.6%, the largest annual decline since 2002.[17] This was primarily driven by three factors: the economic downturn, an increase in business calls using mobile, and an increased take-up of IP based alternatives.

A6.16 Mobile call volumes increased by 8.2% in 2009 and over two-thirds of all business calls were mobile-originated compared to just one-third in 2004. This is being largely driven by mobile-to-mobile call volumes, as an increasing number of mobile business plans offer free on-net calls, which means that employees can call each other at no incremental cost to the business. Fixed-originated call volumes, on the other hand, continued to decrease in 2009, falling by 7.7%.18

A6.17 The decline in the number of business lines can also be explained by businesses increasingly taking-up IP based systems, such as VoIP, which offer cheaper alternatives to fixed lines.

A6.18 It is perhaps likely that we will see this reduction in business lines continuing, even as the economy recovers, as businesses continue to move away from analogue lines toward cheaper mobile and IP based alternatives.

New household development is difficult to predict

A6.19 The economic downturn has caused a decline in new household development, which will have contributed to the decline in fixed lines. However, as the economy recovers we would expect to see this decline level-off and perhaps reverse.

A6.20 It is difficult to predict with any certainty, therefore, how this may impact the number of lines in the future.

The forecasts show a continued migration from WLR to MPF

A6.21 The volume forecasts include a substantial shift in demand from WLR to MPF. MPF volumes are forecast to rise from slightly less than 4 million in 2010/11 to slightly more than 6.5 million in 2013/14. We have compared this to the forecasts provided to us by CPs, which show a similar increase in MPF resulting in slightly less than 6.5 million lines in 2013/14.

[16] Conmunications Market Report 2010, pp. 291-294, http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf
[17] Communications Market Report 2010, p. 331, http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf
[18] Communications Market Report 2010, p. 330, http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf

A6.22 The forecast includes 3.8 million MPF lines in 2010/11. The historical data shows that this estimate is reasonably close to the outturn as the actual number of MPF lines at the end of 2010 stood at slightly more than 4 million.

A6.23 We have also analysed historical MPF data in order to identify trends. Historically the number of MPF lines has increased year-on-year with particularly big increases in 2008/09 and 2009/10. One of the major reasons for this was the decision of some CPs, notably Sky, to begin to offer LLU based services as part of their bundled packages, which has led to them migrating their customers from WLR+SMPF to MPF. We would expect to see this trend continue in the future.

A6.24 As we would expect, the rise in demand for MPF corresponds with a decrease in demand for WLR. For the purpose of our cost modelling, we have assumed that the number of WLR lines will fall by just over 3.5 million by 2013/14, which fits the existing trend of a migration from WLR to MPF.

A decrease in SMPF volumes is forecast

A6.25 If the migration from WLR to MPF continues as predicted, we would also expect to see a decrease in SMPF volumes. Our model assumes a reduction in the number of SMPF lines from 11.8 million in 2009/10 to 9.2 million in 2013/14.

A6.26 Forecasts from Openreach and other CPs also show this trend. In addition, we have considered historical trend data which is consistent - SMPF volumes have been declining since 2009, which coincides with Sky's decision to begin migrating its customers over to MPF.

Other service volumes

A6.27 For our financial modelling, it has also been necessary to take a view of volumes for other Openreach services which are not covered by the proposed charge controls (for example, ISDN30, ethernet services, partial private circuits). This is to ensure that common costs are allocated robustly across all Openreach services so that LLU and WLR services do not over or under recover costs as a result of a disproportionate allocation of common costs.

A6.28 In the case of NGA services, it has been particularly difficult to create forecasts. In its fibre roll-out plans, BT has announced that it plans coverage of two thirds of UK homes by 2015.[19] We have taken account of this together with fibre forecasts in reports from Analysys Mason and IDATE to develop the NGA service forecasts in our model. The non-confidential version of the model shows forecast of NGA services in aggregate to enable stakeholders to understand and comment on the contribution of common costs to these services in our modelling.

Conclusion

A6.29 Attempting to forecast volumes so far into the future is difficult. The analysis and checks that we have carried out on data provided by Openreach and other CPs lead us to believe that our forecast set out above represent one plausible view of how demand for Openreach's services might develop over the next three years.

[19] For example, see http://www.btplc.com/sharesandperformance/Annualreportandreview/Shareholdermagazine/Issues/February2011/broadbandfeb2011/index.htm?Terms=

A6.30 Stakeholders are invited to offer their own views to inform our final volume assumptions as part of this consultation.

Annex 7

Scope for efficiency gains

Introduction

A7.1 In this Annex, we consider the extent to which we think Openreach should be able to deliver cost savings through efficiency gains, and set out how we propose to reflect this in our cost modelling.

Definition of efficiency gains

A7.2 As explained below, the rate we are trying to establish in this annex is a single rate that:

- is applied to all cash payments, (with a few specific exceptions identified below).
- captures the effect of all means of delivering efficiency savings including the savings that might be achieved by doing things less often (e.g. through reduced fault rates), more quickly (e.g. through reduced task times) and for less money (e.g. by more efficient task planning).
- is stated gross (i.e. it delivers a reduction in cash costs).

Proposal

A7.3 Based on the analysis described below, we consider that Openreach should be capable of reducing its cash payments, excluding costs of implementation, at a net rate of between 3.5% and 5.5% each year. This range includes the effect of possible reductions in fault rates.

A7.4 For the purpose of our modelling, the effect of this reduction will be achieved by applying a single rate to all cash costs including capital expenditure and modelling a constant level of fault rates.

A7.5 For the purpose of our base case cost estimates, we have used a net efficiency assumption of 4.5% per annum.

Scope for efficiency gains

A7.6 As explained below, we have considered a range of indicators to estimate the efficiency improvement that may reasonably incentivise Openreach to bring its costs in line with those of an efficient operator. Specifically, we have considered historical levels of efficiency gains delivered by Openreach, benchmarking exercises conducted on our behalf and for Openreach, and Openreach's own expectations as reflected in its planning documents.

Benchmarking

Statistical analysis

A7.7 For the purposes of the 2009 review, we commissioned econometric analysis (the NERA study) to inform its assessment of the scope for Openreach to deliver

efficiency gains. This was published in [December 2008] and was based on Stochastic Frontier Analysis of BT's costs against the Local exchange companies (LECs), the regional telephone network incumbents operating in the USA.

A7.8 The mid point of the wide range of possible results from the analysis would have put BT around the top decile of US LECs ranked by efficiency. The report therefore indicated that BT was already operating at an efficient level, which would suggest that future cost reductions would come mainly from technical progress rather than by eliminating existing inefficiencies.

A7.9 During the 2009 review, BT commissioned Deloitte to respond to the NERA study. Deloitte obtained broadly similar results using a slightly different methodology.

A7.10 BT has commissioned Deloitte to produce an updated version of the efficiency report ("Deloitte 2010 study"), which made use of the additional data for 2007. The results indicated that BT was still in the top decile.

A7.11 If these conclusions could be applied to Openreach, they would suggest that Openreach would be able to make only general improvements in efficiency, in line with general improvements in productivity. This might suggest annual savings of around 2%.

A7.12 However, as we explained during the 2009 Review, while this type of statistical analysis has worked reasonably well in the past, direct benchmarking of Openreach (rather than of BT as a whole) against the LECs was problematic.

A7.13 Given the limitations, we have not updated this analysis, which is still relatively recent, for the purposes of this review. We consider that the analysis is still relevant, in that it might suggest caution before suggesting that Openreach is particularly inefficient, but do not consider that it would be appropriate on the basis of this evidence alone to conclude that Openreach was already operating at a reasonably efficient level and did not need to save costs to catch-up with industry best practice.

Cost review

A7.14 For the purposes of our 2009 Review, we engaged KPMG to estimate the efficiency gains that could be achieved by Openreach until 2012/13 through benchmarking operating cost components. It concluded that Openreach would need to make efficiency gains of between 3.2% and 3.5% per annum from 2008 to 2013 on its operating cost base to bring it in line with that of an organisation operating in a competitive environment.

A7.15 For the purposes of this current review, we commissioned KPMG to update this analysis. The updated report is available on our website.

A7.16 As explained in the KPMG Report, KPMG has conducted the following activities:

- Updating the benchmark analysis to take account of changes to operating costs. Benchmarks were derived from KPMG proprietary databases as well as publicly available sources.

- Extrapolating these results to forecast potential efficiency gains for those operating cost categories that were not previously benchmarked.

- Comparing actual results against the forecast savings identified in KPMG's earlier work.

A7.17 On the basis of the analysis described in its report, KPMG estimates that, absent any changes in fault rates and task times, Openreach will need to reduce its operating cost base by around 8.7% by 2014 to bring it in line with that of an organisation operating in a competitive environment.

A7.18 On this basis, KPMG conclude that Openreach would need to deliver average efficiency gains of 2.3-2.6% per annum between 2010 and 2014 on its operating cost.

A7.19 This estimate of required efficiency gains is lower than that calculated in 2008. KPMG attributes this to a number of factors: a revised operating cost base, reductions in operating costs made by Openreach since 2008 and a small adjustment to the productivity rate used in our calculations.

A7.20 As explained in its report, KPMG has looked specifically at benchmarking operating cost categories. It did not examine the efficiencies that may be gained through improvements in, for example, task times and other activities performed by Openreach. These percentages therefore represent the potential reduction in costs before any changes in fault rates and task times.

A7.21 As explained below, we do not attempt to separately model the effect on costs of changing fault rates. Instead, we apply a single efficiency saving to all costs that does not distinguish between different sources of efficiency gains. Therefore, while we recognise that reductions in fault rates may contribute to the delivery of overall efficiency targets, it has not been necessary to estimate the proportion of the cost savings that might be delivered by such reductions.

A7.22 However, in 2009, we estimated that a 2% annual reduction in fault rates would have the same effect as a general efficiency saving of around 0.5% on all costs.

A7.23 Historically, reductions in fault rates have contributed to the overall efficiency savings. Openreach has argued that the scope for further reductions in fault rates is now more limited than previously. On this basis, it might be argued that the future scope for efficiency gains is less than it has been in the past, because Openreach can no longer rely on the contribution to those savings that might be made by reducing faults.

Industry benchmarking

A7.24 In our 2009 review, Openreach provided, on a confidential basis, external research on comparative efficiency levels across a range of international fixed line operators.

A7.25 For the purpose of this review, we used our information gathering powers under section 135 of the Act to obtain a similar study conducted in 2010.

A7.26 As before, we recognise that there are limitations to the inferences that can be drawn from this report for the purposes of determining the scope for future efficiency gains. For example, we note that the study compares BT Group costs, broken down by category, against various other companies and does not explicitly consider Openreach's costs. Nevertheless, we understand that it is taken into account by Openreach as part of its planning process when determining its efficiency targets. As such, we consider it is appropriate to take it into account in

our assessment of the efficiency improvement that may reasonably be achieved by Openreach.

A7.27 Based on our understanding of the findings in the benchmarking study, and the extent to which they might be applied to Openreach, we estimate that, if Openreach was to move into line with the peer average over the next three years, it would need to achieve annual efficiency savings of around 5%. To move into line with the most efficient operators over three years, we estimate that the required annual savings would need to be around 5.5%.

Historical trend analysis

A7.28 Historical levels of efficiency gains are a useful benchmark if past efficiency savings are considered to be indicative of the savings that might be made in the future.

A7.29 We estimate that Openreach delivered efficiency savings of around 4% in 2009/10 and 9% in 2010/11 (after adjustments for inflation and changes in volumes).

A7.30 Openreach has argued that these savings are not indicative of the recurring efficiency gains that might be achieved in the future. Specifically, Openreach has argued that some of the savings were one-off in nature and will not be repeated in the future.

A7.31 For example, the one-off changes include the impact of the new ratings list for Cumulo rates. This came into effect on 1 April 2010 and resulted in a £77m reduction in rates between 2009/10 (£178m) and 2010/11 (£101m). The new ratings list applies for a 5 year period and has informed the forecast for the charge control period. There is therefore no scope for a repeat of the reduction seen in 2010.

A7.32 The total reduction in Group Transfer charges from 2009/10 to 2010/11 is £141m. Along with the Cumulo saving explained above, Openreach has stated that there are £23m of one-offs items including [✂].

A7.33 In addition, Openreach has identified other cash cost savings of £81m between 2009/10 and 2010/11 which it considers to represent one-off effects of efficiency programmes that could not be replicated in the future.

A7.34 As set out in the calculation below, if past efficiency savings are considered to be indicative of the savings that might be made in the future, then:

- If the savings made in 2009/12 and 2010/11 could be repeated or replicated in future years, average annual savings of around 6% might be expected;
- If it was accepted that the “one-off” items identified by Openreach could not be repeated (or equivalent savings found) in future years, annual savings of around 4% might be expected.

BT planning documents

A7.35 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.

A7.36 Openreach has explained that the overall MTP approach is to set aggressive efficiency and financial targets for each Line of Business and Group Support unit.

We understand that the first stage of the MTP process is for BT Group to issue guidance on the appropriate efficiency targets for each Line of Business. The final targets are then negotiated and agreed between each Line of Business and the Group. We understand that the final group MTP will be reviewed by the BT Board in March 2011.

A7.37 Using our information gathering powers under the Act, we obtained Openreach's latest draft financial forecasts from the latest draft of the MTP.

A7.38 These show that Openreach is expected to commit to cash savings of around £[✂] over the next three years (to 2013/14). We estimate that this translates into an annual target of around 4% over the next three years.

2010 Appeal decision

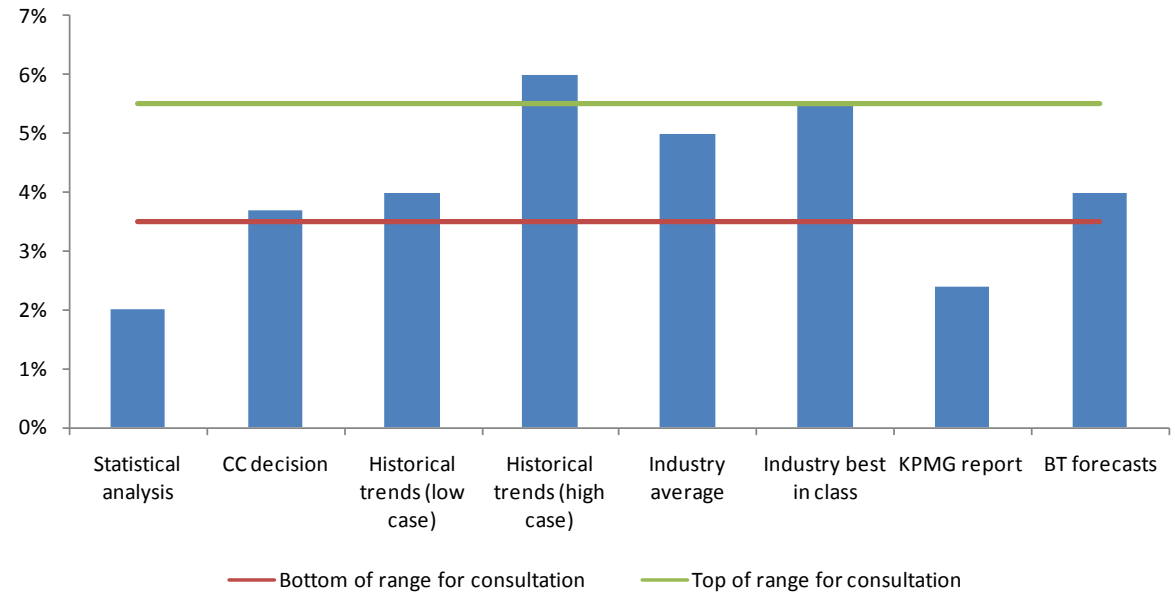
A7.39 In the 2010 Appeal of the 2009 Review, the Competition Commission concluded that a net rate equivalent to 3.7% (applied to all costs) would deliver an appropriate level of annual efficiency savings for the four-year forecast period (2009/10 to 2012/13).

Summary

A7.40 The graph below summarises the various sources of evidence we will take into account to inform our decision on the potential for efficiency gains. Percentages represent the annual net efficiency gains across all costs and from all sources necessary to deliver the appropriate level of cost savings.

A7.41 Based on this evidence we consider that a net efficiency target between 3.5% and 5.5% per annum (on all costs) would be reasonable. In reaching this proposed range, we have not relied on any one particular piece of evidence but have instead applied our judgement to the range of evidence available.

Figure 7.1: range of evidence to inform efficiency



Application of efficiency gains in our cost modelling

A7.42 As well as establishing a reasonable efficiency target, it is necessary to determine how to reflect this assumption in our cost modelling.

A7.43 Traditionally, Ofcom has tended to forecast costs using a simple average efficiency rate which, if applied to all costs, would give an appropriate average reduction across all costs. Under this approach, it is not necessary to distinguish between the effects of, say, doing things more quickly and doing things less often, nor is it necessary to consider the extent to which some costs offer greater scope for efficiency savings than others. Nevertheless, this approach can deliver a reasonable estimate of the possible average efficiency savings.

A7.44 For the purpose of setting new prices in 2009, we modelled the effect of efficiency gains and reductions in fault rates separately. In respect of the effect of efficiency gains, we also took account of the fact that some costs offer more scope for efficiency gains than others. With this in mind, we divided Openreach's costs between those where it felt there was reasonable scope for efficiency gains (which it described as "compressible" costs) and those where we thought there was little or no scope (which it described as "non-compressible" costs).

A7.45 On this basis, the effective efficiency rate reflected a combination of the efficiency gains (applied to the proportion of costs that were deemed to be compressible) plus the effect of the forecast reduction in fault rates.

A7.46 We consider that the approach in 2009 offered some advantages. Specifically, it provides a sound basis for forecasting costs for individual cost categories.

A7.47 However, following our 2009 decision, we now understand that some stakeholders regarded the separate modelling of efficiency gains for compressible and non-compressible costs, and the split between fault rates and general efficiency gains, to be confusing and risked complicating the consultation process.

A7.48 Therefore, for reasons of simplicity and transparency, we have modelled the costs using a single efficiency assumption that is applied to all costs, which combines the effect of all of the various factors that might contribute the delivery of these savings.

A7.49 As explained above, we recognise that, in practice, reductions in the fault rate may contribute towards the delivery of the average efficiency gains that we propose in this Annex. However, because the single efficiency assumption takes this into account, we have left fault rates constant in our cost modelling.

Annex 8

Cost allocation

Introduction

A8.1 The purpose of this annex is to:

- explain how we have allocated costs to Openreach products, including our general approach and methodologies used; and
- show how aggregate costs are allocated to product on cost stacks.

Overview of cost modelling

A8.2 In Section 7, we explained that cost modelling is performed in two stages:

- First, costs are forecast at an Openreach level (in the "Cost Forecast" activity based costing model). These are calculated using data based on historically observed activity levels and inputs together with estimates of future level of demand. Asset values and depreciation were forecast separately. As part of this process, costs from BT Group are allocated to Openreach.
- Then, these costs are allocated to individual products to derive unit cost estimates (in the "Cost Allocation" model).

A8.3 In this annex we explain firstly the allocation of costs from BT Group to Openreach. These are referred to as 'Transfer Charges'.

A8.4 We then explain the allocation of Openreach costs to products. We have used a two stage process to do this. Firstly, costs are allocated to activities (referred to as 'Base 1' allocation). These activities attempt to replicate BT's cost component categories used in the RFS. Secondly these costs are then allocated to products (referred to as 'Base 2' allocation).

Allocation of Transfer Charges from BT Group to Openreach

Summary

A8.5 BT Group (which in this instance refers to the parent function of British Telecommunications plc) levies charges to Openreach in respect of Openreach usage of Group or other line of business (LOB) resources. These are referred to 'Transfer Charges.'

A8.6 BT has provided a schedule, requested by Ofcom under its formal powers, setting out transfer charges incurred by Openreach in 2009/10 and BT's expectations of these charges in the period to 2013/14. The schedule shows transfer charges of £1,216m in 2009/10, falling to £1,094m in 2013/14. These costs relate to a wide range of costs including IT, labour and property costs incurred by BT Group.

A8.7 The Figure 8.1 below shows the principal categories of these costs as forecast by BT Group.

Figure 8.1: Openreach transfer charges (2009/10 to 2013/14)

£m	2009/10	2010/11	2011/12	2012/13	2013/14
Accomodation	✂	✂	✂	✂	✂
Cumulo Rates	✂	✂	✂	✂	✂
Supply Chain	✂	✂	✂	✂	✂
Mobile Comms	✂	✂	✂	✂	✂
Supply Chain & Mobile Capitalisation	✂	✂	✂	✂	✂
Fleet	✂	✂	✂	✂	✂
India Service Centre (SMC)	✂	✂	✂	✂	✂
Corporate Overheads	✂	✂	✂	✂	✂
Insurance Charges	✂	✂	✂	✂	✂
Low User Social Telephony	✂	✂	✂	✂	✂
Phonebook Cost Recovery	✂	✂	✂	✂	✂
Other Charges	✂	✂	✂	✂	✂
Managed Services Net	✂	✂	✂	✂	✂
SLG Charges	✂	✂	✂	✂	✂
IT Spend	✂	✂	✂	✂	✂
Total	✂	✂	✂	✂	✂

Source: BT Group

A8.8 BT has also provided a schedule setting out the proportion of total costs incurred at a Group level that are transferred to each LOB. The table below shows that in 2009/10 37% of BT Group transfer charges are allocated to Openreach.

Figure 8.2: Allocation of transfer charges to LOB (2009/10)

	Design	Operate	Openreach	Retail	Wholesale	GS
Accomodation	✂	✂	**25%**	✂	✂	✂
Cumulo Rates	✂	✂	**83%**	✂	✂	✂
Supply Chain	✂	✂	**34%**	✂	✂	✂
Mobile Comms	✂	✂	**44%**	✂	✂	✂
Supply Chain + Mobile Capitalisation	✂	✂	**100%**	✂	✂	✂
Fleet	✂	✂	**66%**	✂	✂	✂
India Service Centre (SMC)	✂	✂	**0%**	✂	✂	✂
Corporate Overheads	✂	✂	**43%**	✂	✂	✂
Insurance Charges	✂	✂	**27%**	✂	✂	✂
Low User Social Telephony	✂	✂	**100%**	✂	✂	✂
Phonebook Cost Recovery	✂	✂	**100%**	✂	✂	✂
Other Charges	✂	✂	**3%**	✂	✂	✂
Managed Services Net	✂	✂	**100%**	✂	✂	✂
SLG Charges	✂	✂	**100%**	✂	✂	✂
IT Spend	✂	✂	**24%**	✂	✂	✂
Total	✂	✂	**37%**	✂	✂	✂

Source: BT Group

A8.9 The table shows that, for example, Openreach receives 25% of accommodation costs, 83% of cumulo rates, 43% of corporate overheads and 24% of IT spend.

A8.10 To put these figures into some context, in 2009/10 Openreach generated around 20% of BT Group revenue, employed around 30% of BT Group staff, and accounted for around 40% of BT Group's capital base.

Ofcom Modelling of Transfer Charges

A8.11 For 2009/10 we have used BT's data in our modelling. For the reasons provided in Section 7 we believe this is a sound starting point for our analysis. For 2010/11 to 2013/14, however, we consider that some of the assumptions used by BT to forecast transfer charges may overstate future cost levels. We have therefore revised BT's estimates of all transfer charges (except Corporate Overheads) by:

- Using a net efficiency target of 4.5% per annum, in place of BT's target; and
- Using an inflation rate of 2.5% per annum (except for Cumulo and Accommodation), in place of BT's assumption.

A8.12 For Group HQ we have used BT's estimates for all years.

A8.13 On this basis we have derived the following restated estimate of transfer charges to be included in the cost calculation. Under our assumptions transfer charges fall to £973m in 2013/14.

Figure 8.3: Openreach transfer charges (2009/10 to 2013/14) – Ofcom numbers

£m	2009/10	2010/11	2011/12	2012/13	2013/14
Accomodation	182	137	134	131	127
Cumulo Rates	178	101	100	97	95
Supply Chain	✂	✂	✂	✂	✂
Mobile Comms	✂	✂	✂	✂	✂
Supply Chain & Mobile Capitalisation	✂	✂	✂	✂	✂
Fleet	✂	✂	✂	✂	✂
Corporate Overheads	141	123	113	108	107
Insurance Charges	✂	✂	✂	✂	✂
Low User Social Telephony	63	58	55	52	49
Phonebook Cost Recovery	39	39	38	38	38
Other Charges	✂	✂	✂	✂	✂
Managed Services Net	64	52	51	49	48
SLG Charges	15	8	8	8	7
IT Spend	401	403	391	380	370
Total	**1,216**	**1,075**	**1,037**	**1,003**	**970**

Note: IT Spend is shown net of capitalisation. For reference IT capitalisation totals £73m in 2009/10 and £79m in 2013/14.

A8.14 In the appeal of the previous LLU controls, the Competition Commission (CC) found that the overall approach to allocating Group transfer charges was reasonable given the complexities involved and the materiality of further adjustments. The CC recognised that it was not always necessary to make all possible adjustments if the adjustment was not material.

A8.15 Our overall approach to modelling transfer charges is similar to our approach used to set the previous LLU controls. For this reason we consider that the current allocation of Group transfer charges as described and supplied by Openreach to Ofcom is appropriate for the purpose of setting a charge control. We do, however, briefly revisit certain issues investigated by the CC later in this section.

Further Review

A8.16 For the purposes of this review, we have chosen five categories of transfer charges which together represent approximately 80% of the BT Group charges levied to Openreach, as follows:

- Accommodation;
- Cumulo rates;
- Corporate overheads;
- BT fleet; and
- IT Spend

A8.17 We consider these in turn below.

Accommodation

A8.18 Accommodation Costs are predominantly the costs incurred by BT to occupy, run and maintain its property portfolio of offices, exchanges, radio stations, data centres, and warehouses. Openreach's occupation is concentrated on areas of exchanges where MDF's are located and some office space (see BT allocation to Openreach below).

A8.19 Accommodation costs include property rentals, electricity, water and facilities management. These are dominated by rents paid to Telereal (60%), BT's outsourced property manager, and facilities management charges paid to Monterey (30%), BT's outsourced facilities management service provider.

BT Group Calculation

A8.20 For future years BT use an inflation rate of 3% per annum to estimate costs. This is based on the terms of the 30 year contract between BT and Telereal.

A8.21 In terms of efficiency assumptions BT has previously argued that accommodation costs should not be subject to an efficiency assumption. BT believes that Openreach has limited opportunity to rationalise its use of accommodation. This is because Openreach predominantly occupies space in exchange buildings. BT has formal regulatory obligations such as universal service and the provision of co-mingling space in exchanges, the latter which is used for MPF service. Furthermore, closing exchanges and reducing infrastructure footprint is time consuming and complicated due to the need to rearrange and reconfigure the network. Rearrangement costs are significant and in general higher than the proceeds from any property sale. It can also be a lengthy process. BT has cited that it took nearly 4 years to leave the Moorgate exchange.

A8.22 BT has explained that it is also important to note that vacating exchange buildings also creates significant costs and service disruption for those CPs which are served from the closing exchange and, as a result, exchanges are only vacated if there is a clear operational need to do so.

A8.23 Notwithstanding these points, BT has assumed a 1% efficiency target for future years.

Allocation to Openreach

A8.24 There are two methodologies that we have used to allocate these charges to Openreach:

- Direct costs are allocated on the basis of usage by Openreach; and
- Occupation of exchange equipment space calculated as a percentage of space utilised

Ofcom Calculation

A8.25 For future accommodation costs we have used the contractual 3% per annum inflation rate. We have also applied the 4.5% net labour efficiency against these costs. As we set out in Annex 6, our approach to modelling efficiency has been to calculate a single efficiency number that is applied to all cash costs. Not subjecting Accommodation costs to efficiency would be inconsistent with this approach.

Ofcom Result

A8.26 £182m of BT Group accommodation costs are allocated to Openreach in 2009/10. These fall to £127m in 2013/14. The figure 8.4 below set out the charges over the period.

Figure 8.4: Ofcom forecasts for charges for accommodation

£ m	09/10	10/11	11/12	12/13	13/14
Accommodation	182	137	134	131	127

Cumulo Rates

A8.27 Cumulo rates cover the non-domestic rates that BT Group pays on its rateable assets for its UK network. These are primarily duct, fibre, copper and exchange buildings, but they also include other street assets such as payphones, cabinets, and manholes. It should be noted that BT's non-network properties, offices, data centres and engineering centres are not included in Cumulo rates. There are separate rating assessments for these.

A8.28 BT's Cumulo costs cover many different rateable assets and together these form one rating assessment under UK law.

A8.29 Rates bills are calculated by applying a rate in the pound (or rate poundage), to a rateable value (RV). In England, Scotland and Wales RVs are revalued every 5 years. The most recent revaluation had effect from 1/4/2010, and the next will apply from 1/4/2015. In Northern Ireland the revaluation planned to have effect from 1/4/2010 was recently postponed until 1/4/2015. The current Northern Ireland rating list has applied since 1/4/2003.

A8.30 The government's valuers value BT's Cumulo assessment using a methodology called the "receipts and expenditure method". This is effectively a set of forecast cash flows for the whole BT network of rateable assets. This means that the RV is

not constructed as a rate per local loop, per duct bore kilometre, per fibre kilometre or per payphone kiosk.

A8.31 The bulk of the charge goes to Openreach who operate the access network. The remainder goes to BT Operate.

BT Group Calculation

A8.32 BT has advised that there is much uncertainty over the forecasts of BT Group's Cumulo rates liabilities. The 2010 list rateable values in England, Wales and Scotland are still subject to review and discussions have yet to take place over how its rateable value might change in response to various "material changes in circumstance". However the following are the key assumptions that have been made:

A8.33 Rate Poundages: The 2010/11 actual rate poundages have been forecast for England, Wales, and Scotland by applying estimates of the September RPI in each preceding year (for example September 2010 for 2011/12). Supplementary rate poundages, to fund small business rate relief schemes in England and Scotland, have been maintained at their 2010/11 levels.

- Liabilities have been separately assessed in England, Scotland, Wales and Northern Ireland. English liabilities are affected by the impact of transition.

- Rateable Values (RVs): The current 2010 list RVs have been increased marginally to reflect additional assets in place at 1/4/2010 that were not in place when the 2010 list was compiled. RVs are revised every year on the assumptions that there will be material changes in circumstances (MCCs) that will trigger reassessments. Three MCC effects have been estimated of which the largest relate to growth in MPF and NGA volumes.

- It has been assumed that increasing MPF volumes will act to decrease the Cumulo RV, in a way broadly consistent with that observed at the end of the 2005 list.

- Higher NGA volumes are assumed to increase the Cumulo RV. The increases have been calculated using assumptions contained within Section 873 of the Valuation Office's rating manual.

- The size of the MPF and NGA MCCs effects has been driven using MPF and NGA volume forecasts provided by Openreach.

- Further minor adjustments are also made to reflect growth in non-NGA "landlord" type assets, e.g. non NGA related fibre, power plant and duct.

BT Allocation to Openreach

A8.34 BT cumulo liabilities have been allocated to Openreach as follows:

- MPF related MCC effects have been allocated on the profit weighted NRCs of all rateable assets within BT's core network.

- NGA related MCC effects have been allocated to Openreach on the basis that Openreach owns all the relevant rateable assets.

- All other liabilities have been allocated according to the profit weighted Net Replacement Costs (NRC) of all rateable assets.

BT Result

A8.35 As set out in the table below, Openreach's transfer charges for Cumulo rates are initially forecast to reduce in 2011/12 and 2012/13 but then increase at the end of the period. These forecasts reflect several offsetting impacts.

Figure 8.5: Openreach forecast of transfer charges for cumulo rates

£ m	09/10	10/11	11/12	12/13	13/14
Cumulo Rates	178	101	99	97	105

A8.36 In 2011/12 and 2012/13 inflationary increases in rate poundages and modest increases due to NGA deployment are offset by decreases from MPF based MCCs and the unwinding of transition impacts in England. In the final year NGA and inflation impacts dominate which is why the forecast starts to rise.

Ofcom Calculation

A8.37 We have taken the following approach to Cumulo rates in the Ofcom models

- We have used Openreach's actual/flexed cost for 2009/10 and 2010/11
- We have forecast Cumulo rates from 2011/12 to 2013/14 using the 2010/11 flexed cost;
  a) Inflated by the Openreach non-pay inflation assumption
  b) Subject to the Openreach efficiency assumption as a proxy for product volume and mix effect (see below).
- We have not incorporated any future rebates from MCCs because whilst in the past BT may have benefited from rebates part way through the charge control period we do not believe these can be robustly forecast.

Ofcom Result

A8.38 This produces the following results;

Figure 8.6: Ofcom forecasts of transfer charges for cumulo rates

£ m	09/10	10/11	11/12	12/13	13/14
Cumulo Rates	178	101	100	97	95

A8.39 Ofcom's approach assumes Openreach picks up a constant share of Cumulo. This is reasonable given that any movements in product volumes and mix due to NGA will not move costs significantly between the BT profit centres.

Corporate Overheads

A8.40 This charge is levied in respect of the consumption by Openreach of BT Group overheads. These overheads include Group functions' own consumption of accommodation and BT Design charges, as well as general parent functions such as tax, treasury, legal and accounting.

A8.41 Corporate overheads can be separated into four categories. These categories are used to allocate the BT Group costs to LOB. Below we show the categories and the allocation bases:

- Group HQ functions: this includes tax, treasury, legal and reporting costs. This is allocated on an Full Time Employee (FTE) basis.
- Group Chief Technology Office (CTO): this sets the overall IT strategy for the business. This is allocated on an FTE basis.
- Design Costs: These are allocated according to the proportion of development spend.
- Vacant Property: This is allocated according to the proportion of estate occupied/unoccupied.

A8.42 The overall allocation of corporate overheads therefore uses a blended methodology based on FTE and spend. We consider that this is not an unreasonable basis for allocating costs.

A8.43 In 2009/10 £141m of BT Group corporate overheads are allocated to Openreach in 2009/10. These charges fall to £107m in 2013/14.

A8.44 BT has provided the split between the four categories in 2009/10. We have used the proportions in 2009/10 and applied these in future years to show how the split may be over the period to 2013/14. This is shown in the table below:

Figure 8.7: Ofcom allocation of BT Group corporate overheads to Openreach

£ m	Allocation	09/10	10/11	11/12	12/13	13/14
Group HQ	FTE	[✂]	[✂]	[✂]	[✂]	[✂]
Group CTO	FTE	[✂]	[✂]	[✂]	[✂]	[✂]
Design Costs	Spend	[✂]	[✂]	[✂]	[✂]	[✂]
Vacant Property	Spend	[✂]	[✂]	[✂]	[✂]	[✂]
Total		141	123	113	108	107

BT Fleet

A8.45 BT Fleet charges are levied in respect of the use of vehicles by Openreach Field Service and Service Management Centre staff. There are several components to Fleet costs:

- Acquisition and retirement costs and insurance. These are allocated to Openreach on a direct basis.

- Fuel costs: These are charged to Openreach based on an analysis of fuel usage associated with individual vehicles.

- Maintenance, spare parts and other overheads: These are charged to Openreach on a proportionate basis.

A8.46 We consider that these allocation methodologies are not unreasonable.

A8.47 In 2009/10 £[✂][approximately £100m] of BT Group Fleet charges are allocated to Openreach. We have estimated that these charges will be reduced by £[✂] [approximately 30%] by 2013/14. The table below sets out our estimate of the charges over the period.

Figure 8.8: Ofcom estimate of fleet allocated to Openreach

£ m	09/10	10/11	11/12	12/13	13/14
Fleet	[✂]	[✂]	[✂]	[✂]	[✂]

IT Spend

A8.48 IT spend relates to costs from BT Innovate and Design (BTI&D), and BT Operate.

- BTI&D provides research, development and consulting services for BT.

- BT Operate is responsible for the maintenance and support of all of BT's computer systems.

A8.49 Costs are split into the three following components:

- Net Development (BAU): new system build and enhancements to existing systems, performed by BTI&D.

- Application Systems and Maintenance: support and maintenance for specific applications, performed by BT Operate.

- Computing: ongoing operation of physical systems, helpdesks and data centres, performed by BT Operate.

A8.50 We understand that these components are allocated to LOB as follows:

- Net Development (BAU) costs are allocated on the basis of the specific spend of IT projects

- Application Systems and Maintenance and Computing costs are allocated on the basis of FTEs

A8.51 We consider that these allocation methodologies are not unreasonable.

A8.52 In 2009/10 £401m is allocated to Openreach in relation to IT Spend. By 2013/14 we estimate that IT spend should fall to around £370m. The table below sets out our estimate of the charges over the period split by the three components.

Figure 8.9: Ofcom estimates of IT spend allocated to Openreach

£ m	Allocation	09/10	10/11	11/12	12/13	13/14
Net Development (BAU)	Spend	[✂]	[✂]	[✂]	[✂]	[✂]
Application Sys. & Main.	FTE	[✂]	[✂]	[✂]	[✂]	[✂]
Computing	FTE	[✂]	[✂]	[✂]	[✂]	[✂]
Total		**401**	**403**	**391**	**380**	**370**

A8.53 Our estimate of IT spend is lower than that forecast by BT. However, we will obtain further information before concluding whether our estimate is appropriate. Specifically, we have requested further information from BT to support its IT cost estimates, including further detail on specific IT projects.

Other issues relating to transfer charges

A8.54 In the following section we briefly revisit the following issues which were investigated by the CC during the appeal of the previous LLU controls. These relate to energy costs and costs which could arguably be transferred out of Openreach to other operating divisions or overseas subsidiaries.

Energy Costs

A8.55 Energy costs are a component of accommodation costs. We have investigated how energy costs are projected in the future, with particular reference to forward looking contracts.

A8.56 BT has explained that it has not disaggregated inflation assumptions to isolate any particular cost trends for the energy proportion of accommodation costs. Therefore, we have projected them with general inflation and efficiency assumptions.

Allocations to other operating divisions

A8.57 Openreach incurs costs which could arguably be allocated to other operating divisions. This includes a small proportion of product management costs which are incurred in support of Northern Ireland Core Rental Services.

A8.58 BT has explained that Northern Ireland revenues represent only 5% of the total Core Rental Services for Openreach, and product management costs represent a very small proportion of the overall costs for Core Rental Services. BT therefore believes that it is not appropriate to allocate any of Openreach's costs back to other operating divisions.

A8.59 We accept that the impact on costs is small. However, in the LLU appeal[20] , we consider it appropriate to reflect an allocation of these costs to Northern Ireland. We have therefore allocated £1m of costs away from Openreach.

Allocations to overseas subsidiaries

A8.60 Openreach incurs costs which could arguably be reallocated to overseas subsidiaries. We have asked BT to explain why it believes it is not appropriate to allocate Group costs to overseas subsidiaries.

A8.61 BT has explain ed that BT's in-country operations (overseas businesses) have their own HR and Finance staff with skills specific to dealing with local issues such as tax, pay settlements etc. In the UK, these issues are handled at a corporate level and BT therefore believes it to be correct that these costs should not be allocated to overseas activities.

A8.62 On the basis that BT's overseas businesses do not appear to be using shared Group services, we think it is reasonable that none of these costs should be allocated to overseas subsidiaries.

Allocation of Openreach costs to products

A8.63 As explained above, costs are allocated to products in two stages. First, costs are allocated to activities (referred to as 'Base 1' allocation). These costs are then allocated to products (referred to as 'Base 2' allocation).

A8.64 We consider that the basis of allocation of costs to products as described below is appropriate for the setting of a charge control.

A8.65 We explain our approach to the two stages in more detail, below.

Base 1 Allocations

A8.66 In this section we provide a breakdown of the unit cost stacks by cost category, and an explanation of how these costs have been allocated to activities.

Breakdown of unit costs by cost category

A8.67 Cost data taken from the Cost Forecast model is allocated to activities using Base 1 allocation methodologies.

A8.68 We show in the table below the unit cost stacks by principal cost categories for the rental of WLR, MPF, and SMPF in 2009/10 and 2013/14.

Figure 8.10: Unit cost stacks by principal cost categories (2009/10 and 2013/14)

	WLR	MPF	SMPF	WLR	MPF	SMPF
		2009/10			2013/14	
	£	£	£	£	£	£

[20] See paragraph 2.614

Line Cards - PSTN	10.13	-	-	11.08	-	-
Accommodation	4.36	6.61	2.29	3.13	4.67	1.59
Accommodation Cumulo Rates	5.35	5.45	0.07	3.03	3.08	0.04
Net Development	3.40	3.38	0.75	3.35	3.20	0.67
Computing	3.05	3.03	0.67	2.91	2.78	0.59
Group HQ	3.21	3.31	0.35	2.10	2.14	0.31
Current Pay: Direct	5.98	6.78	1.48	5.06	5.71	1.35
OOI Repayments Works	(1.77)	(1.85)	(0.15)	(0.34)	(0.35)	(0.04)
Current Pay: Direct (Non Vol)	6.87	7.15	0.57	5.19	5.37	0.56
Depn + HG : Dropwire	2.91	2.91	-	6.17	6.17	-
Depn + HG: D Side	5.91	5.95	-	10.97	11.04	-
Depn + HG: Duct	4.48	4.51	-	2.48	2.50	-
Dpen + HG: E Side Copper	1.28	1.29	-	2.38	2.39	-
Depn : Line Testing Equipment	0.16	6.04	0.16	0.30	2.97	0.30
Others	16.60	16.87	3.23	14.55	12.57	3.31
Total Opex	**71.91**	**71.43**	**9.42**	**72.35**	**64.24**	**8.68**
ROCE@10.1% /8.6%	29.96	32.91	0.32	25.90	26.65	0.46
Total cost	**101.87**	**104.34**	**9.73**	**98.25**	**90.89**	**9.13**

A8.69 To illustrate how the Base 1 allocation process works we have selected the top activities by size as they appear in the activity cost stacks for products. This gives a sample size between 75% and 95% for WLR and MPF, and 50% for SMPF.

A8.70 For the cost categories selected we provide a description of the cost category and explain how it has been allocated to activities. Part of our review has also included considering whether the allocation methodology is consistent with the allocation basis used in the RFS as set out in the DAM.

Basis of allocation of costs to activities

A8.71 Our sampling has identified methodologies which are broadly based on one of the four following categories: labour driven, specific, blended, and depreciation.

i)Labour

A8.72 The allocation of labour costs is based on forecast hours spent on work related activities. Forecast hours are generated from the Cost Forecast model using actual Openreach base data. The forecasts take account of product volumes and task times. These methodologies are dynamic over time and are either volume or non-volume related.

A8.73 We use the following methodologies:

- Operations Volume Pay: This allocates pay to activities on the basis of forecast hours spent by Openreach staff on engineering activities, excluding the building of assets.

- Dynamic Operations Base: This allocates pay to activities on the basis of forecast hours spent by Openreach staff on engineering activities, including the building of assets.

- Dynamic Direct Pay: This allocates pay to activities on the basis of forecast hours spent by Openreach staff on engineering activities (including the building of assets) and forecast hours spent by support staff at the Service Management Centre.

ii) Specific

A8.74 Certain costs are allocated to activities using a basis which is directly relevant to the cost category.

A8.75 For example the allocation of accommodation cost allocation is based on the percentage of floor space each activity occupies. The allocation of Cumulo rates is based on a Net Replacement Cost (NRC) basis, weighted by profit.

iii) Blended

A8.76 Some costs are allocated on a blended basis which mixes labour allocation methodologies with other specific methodologies.

A8.77 Net Development costs, for example, use the Net Development Base methodology. This methodology includes some cost, allocated to it on the basis of forecast hours spent on work related activities and other costs allocated to it directly on the basis of identified spend.

iv) Depreciation

A8.78 Depreciation costs are allocated to the assets to which they relate. For example dropwire depreciation is fully allocated to "Use of Dropwire."

Allocation Matrix

A8.79 The following table shows the percentages of costs allocated to activities for the cost categories we have identified in our sampling, using the various allocation methodologies. Activities are shown along the top and allocation methodologies are shown along the left hand side.

A8.80 It shows, for example, that if the Accommodation methodology is used to allocate costs, 46.0% of costs are allocated to Use of MDF, whilst the remainder are allocated to other activities. This allocation percentage is static over the period.

A8.81 It also shows that if the Operations Volume Pay methodology is used, 21.9% of costs are allocated to MDF Hardware Jumpering in 2009/10. This methodology is dynamic over the period. In 2013/14 therefore 17.9% of costs are allocated to the same activity.

Figure 8.11: Allocation Matrix: Activities and Methodologies

Allocation Methodology	Rental of BTW Line Cards	Use of E-side Copper and Duct	Repair of E-side Copper	Use of D-side Copper and Duct	Repair of D-side Copper	MDF Hardware Jumpering	Use of Dropwire and NTE	TAMS	Use of MDF	Line Test Equipment
Labour (Dynamic)										
Dynamic Opeartions Volume Base KMH 2009/10			7.6%		19.6%	22.1%				
Dynamic Opeartions Volume Base KMH 2010/11			6.7%		17.3%	23.6%				
Dynamic Opeartions Volume Base KMH 2011/12			6.5%		16.8%	22.7%				
Dynamic Opeartions Volume Base KMH 2012/13			6.5%		16.8%	20.5%				
Dynamic Opeartions Volume Base KMH 2013/14			6.8%		17.7%	20.0%				
Dynamic Operations Base KMH 2009/10		0.0%	3.7%	24.4%	9.7%	10.9%	16.5%		0.0%	0.4%
Dynamic Operations Base KMH 2010/11		0.1%	3.4%	20.1%	8.9%	12.1%	17.3%		0.1%	0.5%
Dynamic Operations Base KMH 2011/12		0.1%	3.3%	19.6%	8.6%	11.7%	16.3%		0.0%	0.4%
Dynamic Operations Base KMH 2012/13		0.1%	3.2%	17.0%	8.3%	10.1%	15.3%		0.0%	0.2%
Dynamic Operations Base KMH 2013/14		0.1%	3.3%	17.3%	8.6%	9.7%	15.5%		0.0%	0.2%
Dynamic Direct Pay 2009/10			3.4%	22.3%	8.9%	10.0%	15.1%		0.0%	0.3%
Dynamic Direct Pay 2010/11		0.1%	3.1%	18.3%	8.1%	11.0%	15.8%		0.0%	0.4%
Dynamic Direct Pay 2011/12		0.1%	3.0%	17.8%	7.9%	10.6%	14.9%		0.0%	0.3%
Dynamic Direct Pay 2012/13		0.1%	2.9%	15.5%	7.5%	9.2%	13.9%		0.0%	0.2%
Dynamic Direct Pay 2013/14		0.1%	3.0%	15.6%	7.8%	8.8%	14.0%		0.0%	0.2%
Specific (Static)										
CE Accomodation		10.1%	1.7%	5.9%	4.8%	4.4%	6.2%	0.0%	46.0%	0.0%
Cumulo Rates		2.2%	0.0%	65.7%	0.1%	0.1%	6.1%	0.0%	1.5%	0.0%
Line Cards (A006)	100.0%									
Blended (Static)										
Net Development Base	0.0%	2.8%	2.5%	10.9%	6.5%	7.4%	10.8%	0.0%	0.0%	0.0%
Depreciation (Static)										
Dropwire							100.0%			
Copper Distribution-side				100.0%						

Copper Exchange-side		88.3%								
Line Testing Equipment								71.9%		28.1%

A8.82 Note: The percentages highlighted in blue are cited in our commentary.

A8.83 We consider the approach to allocating (i) costs charged to Openreach by BT Group and (ii) costs incurred by Openreach in turn, below.

Costs recharged by Group

A8.84 This section relates to costs which have been recharged by BT Group to Openreach. Here we show how these costs are allocated to activities. Please note that a more detailed description of each of the cost categories is provided in the previous section on Transfer Charges.

Accommodation

A8.85 Accommodation costs are the costs levied predominantly for use of exchange buildings and office space. These costs include rental costs, facilities management and other costs such as energy costs. Charges for empty exchange space are also included.

A8.86 Costs are allocated to activities using a blended basis of the Accommodation methodology and the Dynamic Direct Pay methodology. The Accommodation methodology allocates costs based on the floor space each activity occupies.

A8.87 46% of accommodation costs are allocated to 'Use of MDF' in 09/10. The basis is static over the period as there is no planned growth or reduction in frames over the period.

Cumulo Rates

A8.88 As explained above, cumulo rates are the non-domestic rates paid by BT Group on its UK network rateable assets. These are primarily duct, fibre, copper and exchange buildings but also include other street assets such as payphones, cabinets and manholes.

A8.89 The allocation methodology is based on the Net Replacement Cost (NRC) value of assets used by the activities weighted by the level of profit generation of the assets. The profit weighting is calculated by analysing the RFS to work out which markets the asset is allocated to, and then an average ROCE from those markets is calculated.

A8.90 66% of cumulo rate costs are allocated to 'Use of Distribution-side Copper' in 09/10.

A8.91 The allocation percentage is static over the period, which appears inconsistent with the BT's methodology for calculating the aggregate Cumulo cost, particularly the £9m increase between 2012/13 and 2013/14 as a result of the volume mix and inflation movements. We would expect the NGA activities share of Cumulo to increase at the expense of copper activities.

A8.92 Openreach's view is that the impact of the change would be immaterial for copper products. We will review this issue further during the consultation period. For the time being, we note that in our cost modelling cumulo rates are already subject to our average efficiency assumption and this may provide a reasonable basis for capturing the impact of volume effects on copper products for the Base 1 allocation.

Group HQ

A8.93 Group HQ costs predominantly relate to the costs of staff who work at BT Group HQ. It also covers other costs such as the rental of BT Group office space, utility costs and a charge for empty office space. These costs are a subset of Corporate Overheads, detailed in the Transfer Charges section above.

A8.94 Openreach costs are allocated to activities using the "Dynamic Direct Pay" pay methodology. This methodology is dynamically linked to product volumes.

A8.95 In 09/10 22% is allocated to Use of Distribution-side Copper, 15% to Use of Dropwire, 10% to MDF Hardware Jumpering, and 9% to Repair of Distribution-side Copper. By 2013/14 these fall to 16% for Use of Distribution-side Copper, 14% for Use of Dropwire, 9% for MDF Hardware Jumpering, and 8% for Repair of Distribution-side Copper.

Costs incurred by Openreach

A8.96 This section relates to costs incurred by Openreach. These cost categories broadly relate to labour, IT, depreciation and other costs.

Current Pay: Direct

A8.97 This represents the productive time costs of Openreach operational staff. These costs are driven by volumes.

A8.98 Direct pay costs are allocated to activities using the methodology Operations Volume Pay. This methodology is dynamic over the period.

A8.99 In 09/10 22% is allocated to MDF Hardware Jumpering, 19% to Repair of D-side, and 7% to Repair of Exchange-side. By 2013/14 these fall to 18% for MDF Hardware Jumpering, 18% to Repair of D-side, and 7% to Repair of E-side.

Current Pay: Direct (non-Volume)

A8.100 This represents costs of Openreach staff for time spent away from engineering activities. This includes time spent on training and planning.

A8.101 Costs are allocated to activities using the Dynamic Operations Base methodology. This methodology is dynamic over the period.

A8.102 In 09/10 24% is allocated to Use of D-side, 11% to Use of Dropwire, 12% to MDF Hardware Jumpering and 10% to Repair of D-side. By 2013/14 these fall to 17% for Use of D-side, 16% for Use of Dropwire, 10% for MDF Hardware Jumpering and 9% for Repair of D-side.

Net Development

A8.103 These costs represent the costs spent on internal IT development.

A8.104 Allocation to activities is based on the 'Net Development Base' methodology. This basis categorises costs into four types of IT projects and then uses a specific methodology for each category. These specific methodologies take account of pay, capitalised pay, NGA and SMC cost drivers in the base year. The four categories and specific allocation methodologies are:

- Business as usual operational systems (Operations Total Pay allocation methodology),
- NEJ Piper (Operations Capitalised Pay allocation methodology),
- Equivalent Management Platform (SMC Pay Base allocation methodology); and
- NGA (directly allocated to NGA).

A8.105 The outputs of these four methodologies are then blended to produce percentages allocated to activities.

A8.106 This is a static allocation methodology. Throughout the period 11% is allocated to Use of Distribution-side Copper, 11% to Use of Dropwire, 7% to Repair of Distribution-side Copper, and 7% to MDF Hardware Jumpering.

Computing

A8.107 These costs relate to the accommodation and power of computer hardware and laptops, the depreciation costs related to this hardware, and the costs of running PC support help desks,

A8.108 This cost category is also allocated using the Net Development Base methodology (see Net Development above).

Depreciation: Dropwire

A8.109 This represents the depreciation charge related to Dropwire assets. It is fully allocated to the Use of Dropwire and NTE activity.

Depreciation: Distribution-side Copper Cable

A8.110 This represents the depreciation charge solely related to Distribution-side Copper cable asset. It is fully allocated to the Use of Distribution Copper and Duct activity.

Depreciation: Exchange-side Copper Cable

A8.111 This represents the depreciation charge predominantly related to Exchange-side Copper cable asset.

A8.112 In 09/10 88% is allocated to Use of Exchange-side Copper, and 12% to LLU Tie Cables. The allocation is static throughout the period.

Depreciation: Line Testing Equipment

A8.113 This represents the depreciation charge related to Line Testing Equipment.

A8.114 In 09/10 72% is allocated to TAMS (MPF only). 28% is allocated to Line Testing Equipment (WLR and SMPF).

A8.115 This allocation is static throughout the period.

COS Line Cards

A8.116 Line cards are the electronic equipment that telephone lines connect to in the local exchange. They represent an important input for WLR but are not required for the provision of MPF.

A8.117 This cost is solely allocated to Rental of BTW Line Cards Activity.

Other Operating Income (OOI) Repayment Works

A8.118 OOI Repayment works is income that BT receives for rechargeable work. For example when BT provides copper or fibre lines into new housing developments then BT may be able to recharge a proportion of the cost to the housing developer. This income represents a credit to labour costs.

A8.119 This income is allocated to activities using the “Dynamic Operations Base” methodology.

A8.120 In 09/10 24% is allocated to Use of D-side, 11% to Use of Dropwire, 12% to MDF Hardware Jumpering and 10% to Repair of D-side. By 2013/14 these fall to 17% for Use of D-side, 16% for Use of Dropwire, 10% for MDF Hardware Jumpering and 9% for Repair of D-side.

Base 2 Allocations

A8.121 In this section we provide a breakdown of the unit cost stacks by activity, and an explanation of how these costs have been allocated to products

Breakdown of Cost Stacks by Activity

A8.122 Costs are allocated from activities to products by using a combination of usage factors and volumes.

A8.123 A usage factor is the relative weighting of the amount of an activity used by a product. For example the usage factor for ‘Rental of BTW Line Cards” is 1.0 for WLR and 0 for MPF. This reflects the fact that a line card is used for the provision of a WLR line but not for an MPF line.

A8.124 We show in the table below unit cost stacks by principal activities for the rental of WLR, MPF and SMPF in 2009/10 and 2013/14.

Figure 8.12: Unit cost stacks by principal activities (2009/10 and 2013/14)

	WLR	MPF	SMPF	WLR	MPF	SMPF
		2009/10			2013/14	
	£	£	£	£	£	£
Rental of BTW Line Cards (PSTN)	10.13			11.08		
Use of Exchange-side Copper and Duct	2.98	3.00	0.43	3.76	3.78	0.36
Repair of Exchange-side Copper	2.88	2.99		2.43	2.53	
Use of Distribution Copper and Duct	24.53	24.69		23.20	23.35	
Repair of Distribution-side Copper	7.53	7.83	1.13	6.36	6.61	0.95
Repair of Dropwire & NTE	3.87	3.76	0.08	3.11	3.01	0.06
Use of Dropwire and NTE (PSTN)	11.84	11.84		14.19	14.19	
Test Access Management System		6.14			3.00	
Use of Main Distribution Frame	2.91	5.82	2.91	1.60	3.20	1.60
Repairs on Main Distribution Frame	1.65	3.52	1.17	1.36	2.89	0.96
Others	3.59	1.82	3.70	5.28	1.69	4.73
Total Opex	**71.91**	**71.43**	**9.42**	**72.35**	**64.24**	**8.68**
ROCE@**10.1** / 8.6 % (£)	29.96	32.91	0.32	25.90	26.65	0.46
Total Cost	**101.87**	**104.34**	**9.73**	**98.25**	**90.89**	**9.13**

A8.125 To show how the Base 2 allocation process works we have selected the top activities by size as they appear in the activity cost stacks for products. This gives a sample size between 70% and 97% across the 3 products.

A8.126 For the activities selected, we explain the activity and show the usage factors used to allocate activities to products. We also show how the usage factor is calculated.

A8.127 Part of our review has also included considering whether the allocation methodology is consistent with the allocation basis used in the RFS as set out in BT's DAM.

Basis of allocation of Activity costs to products

Rental of BTW Line Cards (WLR)

A8.128 BT currently uses TDM technology. This means WLR line cards can only recognise voice traffic. The costs are therefore directly attributable to WLR services and only WLR picks up any costs relating to line cards.

A8.129 The table below shows the usage factors applied for allocation to products. It shows that line card costs are only allocated to WLR.

Figure 8.13: Usage factors applied for allocation to products

	Usage Factor
WLR	1.00
MPF	-
SMPF	-

Use of Distribution-side Copper and Duct

A8.130 Distribution-side copper and duct covers the cost of using a copper line between the cabinet and the distribution point. This part of the network is known as the Distribution Side or D-side. The costs of this activity include the depreciation for D-Side copper cable and duct assets together with any overheads directly associated with these assets (primarily cumulo rates) and other overheads associated.

A8.131 In our model, volumes are first converted into the number of copper pairs used by the product and then weighted by an average cost per pair for that circuit type. The number of pairs used is calculated for each product by examining the number of ends. The use of DACs allow 'pair gain' on some WLR analogue lines. 'Pair gain' is where a WLR voice only line between the Dropwire and the exchange can be shared by two end users. This reduces the average amount of copper and duct per WLR customer compared to an MPF customer and slightly lowers the usage factor.

A8.132 The table below shows the base data that has been used to generate these usage factors.

Figure 8.14: base data to generate usage factors.

	No. of ends per circuit	Relative cost of lines	No. of pairs per circuit	% on copper	Channels per circuit	Usage Factor
WLR	1.0	720.42	0.994	100%	1.0	715.78
MPF	1.0	720.42	1.00	100%	1.0	720.42
SMPF	-	-	-	-	-	-
ISDN 30	1.0	902.39	1.686	34%	0.06	31.79

A8.133 Further detail behind the calculations in the table is provided below:

- No of ends per circuit: This represents the number of copper pair ends. For all products except SMPF there is one end. SMPF does not have an end.

- Relative Costs of Line: This represents the average cost per line. It is calculated by dividing the total average cost per circuit by total volumes. Volume data has been sourced by BT's Openreach business intelligent system. Average cost data has been extracted from Piper.

- Number of pairs per circuit: The numbers of pairs per circuits vary between the relevant products. The WLR pair usage contains the use of pair gain equipment (DACS) where more than one circuit is carried over a copper pair. Although the use of DACS is diminishing (<1%) it is a factor that is considered when reviewing the overall pair usage of WLR (0.99).

- ISDN30 circuits use copper pairs (CWSS) which has 3 types of line testing equipment (LTE) which carry either 1, 2 or 3 circuits. The pair usage factor (1.68) is calculated by the ratio of circuit volumes to total pair volumes.

- Percentage of circuits on copper: All Circuits are delivered 100% over copper pairs except ISDN30 where these are increasingly delivered over fibre.

- According to Openreach, their records show that 34% of ISDN 30 circuits are delivered over copper bearers, the rest is over fibre.

- Channels per circuit: WLR and MPF have a factor of 1 because they use the whole circuit on a 1:1 basis.

- ISDN30, although capable of carrying 30 circuits its actual fill is 16.5 based on the channels available on the total ISDN30 systems. To obtain the channel per circuit for ISDN30 the calculation is 1/16.5 = 0.06.

A8.134 At the time of the previous Openreach charge control a "line length adjustment" was applied to the methodology used to allocate this activity to products. Consequently the usage factor applied to MPF was slightly lower than for WLR.

A8.135 When we originally set the MPF Charge we excluded 16% of D side copper costs on the basis of data provided by Openreach which showed the average length of a copper loop used to provide a 2Mbit/s broadband service was approximately 19% shorter than the average copper loop. This supported the "technical point" that DSL did not work over long line lengths. We noted that technical advances might mean higher bandwidth services became available over longer lines'.

A8.136 When we set new charges in 2009, we noted that Openreach had made the case that average MPF line length has increased with the rollout of Broadband and now form a significant part of the overall total and had explained that the cost of a copper pair is a function of thickness and age as well as length. On this basis they calculated an 'average copper pair cost' usage factor to apportion D and E side copper costs to products in their model based on survey data. As a result, the average cost of an MPF line was estimated to be 6% less than an average WLR Residential line, while a WLR Business Line cost around 8% less than a WLR

residential line (and therefore less than an MPF line). We reflected this in the allocation of copper costs by applying a "line length adjustment".

A8.137 The data that BT has now provided indicates that there is no meaningful difference between the average amount of copper in a WLR line (which now includes the lines previously designated as business and residential WLR) and that in a MPF line. On this basis, the allocation of copper costs between MPF and WLR do not reflect any line length adjustment.

A8.138 There does however remain a small difference in the allocation of D and E side copper costs to WLR and MPF due to 'Pair gain'. In the past BT has deployed digital Access Carrier Systems (or 'DACs) in the Access Network to allow two analogue lines to be carried over one copper pair. As the DACs system does not support Broadband it can only be used on WLR lines only, and the number of lines it is falling on is decreasing. It does still however reduce the WLR usage factor of copper lines marginally below 1.

Repair of Distribution-side Copper and Duct

A8.139 This category represents the cost of repairs to the copper line between the cabinet and the distribution point. The costs of this activity include the engineering pay costs incurred in repairing the Distribution-side and the associated overheads.

A8.140 In our model repair costs are driven and allocated by the frequency of actual faults and labour operations time spent repairing those faults. In the 2009 review costs were generated and allocated on the basis of reported faults which roughly equated to an MPF line generating the same number of faults as a WLR plus SMPF line.

A8.141 Actual fault information was provided by Openreach for monthly faults for the period May 2009 to January 2011. This was the first time we had received information that split the incidence of faults for WLR between lines Voice only lines and WLR plus SMPF lines.

A8.142 For WLR the relative fault rates as well as channels per circuit are factored as 1 based on information on actual repairs made and on the basis that WLR only uses 1 copper pair.

A8.143 From the information provided by Openreach we calculated the following usage factors:

Figure 8.15: Usage factors calculations

	Actual fault rate	% on copper	Channels per circuit	Usage Factor
WLR	1.00	100%	1.0	**1.00**
MPF	1.04	100%	1.0	**1.04**
SMPF	0.15	100%	1.0	**0.15**
ISDN 30	n/a	n/a	n/a	**0.01**

A8.144 Further detail behind the calculations in the table is provided below:

i) Relative Fault Rate: At the time of the previous 2008 Openreach Charge Control the usage factor for WLR was 1.0, MPF was 1.30, and SMPF was 0.3. This was based on the number of reported and expected faults in the network.

Following comments from stakeholders in 2008 we have asked BT to provide data on the level of actual faults across the network. Information on fault rates by product was supplied by Openreach to Ofcom for the period October 2009 to January 2011. This data supports a usage factor of 1.0 for WLR, 1.04 for MPF, and 0.15 for SMPF. It is not clear to us the reason for the difference between the level of faults for actual and reported faults. We do, however, believe that actual faults are a more appropriate basis to base the usage factors on and we have therefore used these numbers in our modelling.

ii) Percentage of circuits on copper: All circuits are delivered 100% over copper pairs except ISDN30 where these can be delivered over a mix of copper and fibre.

iii) Channels per circuit: WLR and MPF have a factor of 1 because they use the whole circuit on a 1:1 basis.

ISDN30, although capable of carrying 30 circuits its actual fill is 16.5 based on the channels available on the total ISDN30 systems. To obtain the channel per circuit for ISDN30 the calculation is 1/16.5 = 0.06.

Use of Exchange Side copper and duct

A8.145 This represents the cost of using a copper line between the BT exchange and the cabinet. This part of the network is known as the Exchange Side or E-side. The costs of this activity include the depreciation of assets for exchange side copper cable (and associated duct) together with any overheads.

A8.146 Volumes are weighted by an average cost per pair for that circuit type which represents line length. These are sourced from the BT Local Line Costing Study. In addition the number of copper pairs used by each product is calculated by examining the number of ends, % provided over copper, number of copper pairs and number of channels.

A8.147 The table below shows the usage factors applied for allocation to products.

Figure 8.17: Usage factors applied for allocation to products

	Usage Factor
WLR	715.78
MPF	720.42
SMPF	-
ISDN 30	31.79

A8.148 The calculation used to generate these usage factors is the consistent with the calculation used for 'Use of Distribution side copper and duct'.

Repair of Exchange side copper and duct

A8.149 This represents the cost of repairs to the copper line between the cabinet and the distribution point. The costs of this activity include engineering pay costs and stores costs that are incurred in repairing the exchange side. The overheads associated with these labour and stores costs are also included e.g. cost of using vans, HR costs and downtime (training, end of day travel, annual leave etc). The main CoWs are UEL and UELP, being re-active and pre-emptive repair of Underground Exchange Side Copper Cable.

A8.150 We have applied the same methodology as Repair of D-side to calculate the usage factors, shown below:

Figure 8.18: Usage factor calculations

	Usage Factor
WLR	**1.00**
MPF	**1.04**
SMPF	**0.15**
ISDN 30	**0.01**

Use of Dropwire and NTE (PSTN)

A8.151 The use of dropwire and NTE covers the cost of using a copper line from the distribution point to and including the PSTN Network Terminating Equipment (NTE) located at the end user premise. The costs of this activity include the depreciation of the asset with any overheads.

A8.152 Costs are allocated by volume, with no weighting applied. The table below shows the usage factors applied for products.

Figure 8.19: Usage factor calculations

	Usage Factor
WLR	**1.00**
MPF	**1.00**
SMPF	**-**

A8.153 WLR and MPF use a single NTE and dropwire for dedicated connectivity, and the usage factors are therefore 1.

Test Access Management System (TAMS)

A8.154 Test Access Management Systems are used to provide remote access facilities on unbundled broadband circuits for line testing towards the customer and into the network. They are installed between the Main Distribution Frame (MDF) and the Digital Subscriber Line Access Multiplexer (DSLAM). Costs are comprised mainly of equipment depreciation.

A8.155 Costs are allocated by volume, with no weighting applied. The table below shows the usage factors applied allocation to products.

Figure 8.20: Usage factor calculations

	Usage Factor
WLR	**-**
MPF	**1.00**
SMPF	**-**

A8.156 TAMS can only be used to test MPF lines

A8.157 For the purpose of pricing whilst this treatment is consistent with the principle of cost causality, there are other considerations that mean we are minded to make a pricing adjustment (see Section 7) to ensure efficient recovery of costs for all line testing equipment.

Use of Main Distribution Frame (MDF)

A8.158 This activity covers the cost of provision, extension, upgrade, replacement, re-arrangement and recovery of MDFs. MDFs are those distribution frames providing direct interface with external circuit terminations (customer or other exchanges). The main types of cost are depreciation and, overheads associated with the capitalised pay and with space occupied by the frames (e.g. accommodation and power and lighting).

A8.159 Costs are allocated based on volumes weighted by the number of jumpers on the frame required to support each circuit.

A8.160 For the purpose of this allocation, we have assumed that MPF uses two jumpers, while SMPF and WLR use one. This is consistent with the current method of providing these services, as illustrated in the following diagrams.

Figure 8.21: Wiring arrangement for WLR

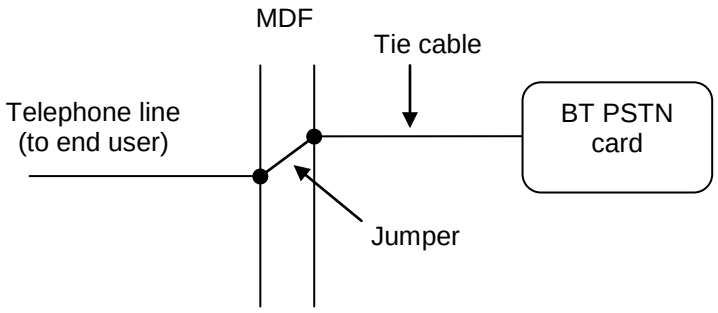


Figure 8.22: Wiring arrangement for WLR+SMPF

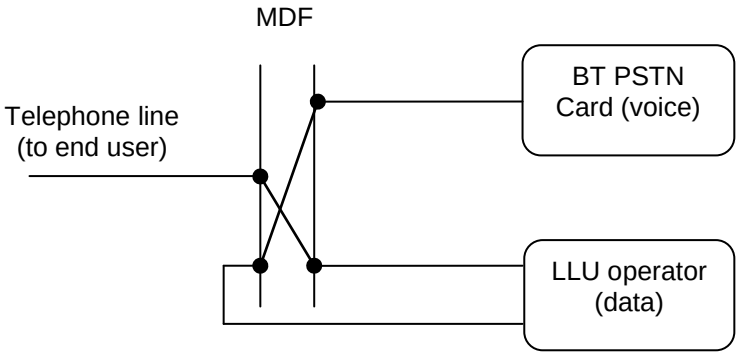
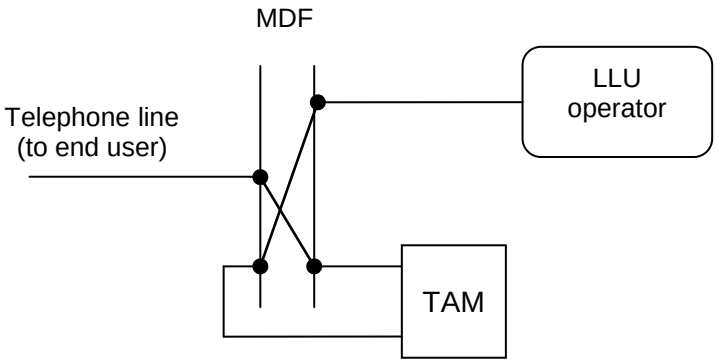


Figure 8.23: Current wiring arrangement for MPF



A8.161 The table below shows the usage factors applied for allocation to products. These differ from those used in 2009, when a usage factor of 1 was used for MPF. This now appears inconsistent with the wiring arrangements, as described above.

Figure 8.24: Usage factor calculations

	Usage Factor
WLR	1.00
MPF	2.00
SMPF	1.00

Repairs on Main Distribution Frame

A8.162 The main type of cost is the engineering pay costs and associated overheads with this activity.

A8.163 Volumes weighted by the number of jumpers on the frame required to support each circuit. The usage factors are based on actual exchange faults provided by BT for the period October 2009 to January 2011.

A8.164 The table below shows the usage factors applied for allocation to products.

Figure 8.25: usage factor calculations

	Usage Factor
WLR	1.00
MPF	2.13
SMPF	0.71

Annex 9

Review of unit costs

Introduction

A9.1 As explained in more detail in section 7, in our cost modelling, costs are forecast within various categories (such as pay costs, accommodation costs and various categories of depreciation). They are then allocated to "activities", representing the building blocks required to deliver the various services. These "activities" are similar to the "Cost Components" used in BT's Regulatory Financial Statements. Activity costs therefore include both operating costs and depreciation. The costs of these activities are then allocated to the individual services.

A9.2 This Annex sets out and reviews the unit cost estimates for the Rental Services, broken down by activity type.

A9.3 It also explains how sensitive the unit cost estimates are to changes in the key assumptions.

Ofcom's base case

A9.4 Forecasting costs is not an exact science. As explained in Section 7, we consider that for most of the parameters that drive our cost forecasts, such as efficiency and inflation, there is no single assumption that can be said to be "correct" with all others being incorrect. Instead, there is a range of plausible assumptions from which it would be reasonable to draw the final assumption to use in our cost modelling.

A9.5 For the purpose of illustrating our proposals, we consider that it is useful to present our proposals around a single base case that reflects a coherent set of parameters such as inflation and efficiency. The base case represents our position on each of the assumptions, where it is either a best estimate of where we think the assumption will be when we publish our Final Statement or it is the mid-point in our plausible range.

A9.6 The unit cost analysis in this annex is based on assumptions in the table below;

A9.7 To inform stakeholders' responses to this consultation we have, at the end of this annex, estimated the effect of changes in our cost assumptions to our base case cost estimates to illustrate the sensitivity of our cost estimates to our key assumptions.

Figure 9.1: Assumptions for unit cost analysis

Parameter	Assumption	Basis
Volumes and mix	Demand for fixed lines falls by 0.7m lines over three years, demand for MPF to increase by 1.4m lines, with 1m decline in demand for SMPF	Annex 6
Efficiency, including fault rates	5% gross annual saving across all cash payments, equivalent to 4.5% net.	7
Inflation (non-	2.5% annual increase in all cash payments	Para A, Section

pay)		7
Inflation (pay)	3% annual increase in pay costs	Para B, Section 7
Pension costs	Annual charges to meet future liabilities are included in our assessment of recoverable costs, but regulated charges should not include any contribution to the funding of the pension deficit	Para C, section 7
Light user scheme (LUS)	None of the cost of the LUS has been included in regulated products	Para D, section 7
Cost allocation	Various	Annex 8
Asset prices	We have re-based post 1997 copper asset values in line with current market prices as at January 2011. Duct indexed at RPI	Para E, Section 7
Cost of Capital	Pre-tax nominal rate of 8.6% (applicable to Openreach's copper business)	Annex 12
Holding gains	Forecast RPI	Annex 10
Fault Rates	Based on the incidence of actual faults rather than reported or estimated faults	Para F, Section 7

A9.8 When calculating our glide path, we propose that we should also take account of a number of 'non cost' adjustments (termed pricing adjustments). These are considered in Section 7.

A9.9 Finally, the range itself has been constructed to allow for movement on some assumptions subject for considerable uncertainties, in particular the revaluation of Duct in 2009/10.

Rental Services

A9.10 For the purposes of this consultation, the base case cost stacks, including depreciation and ROCE, for the rental services are as follows:

Figure 9.2: base case cost stacks for rental services

	2009/10 £	2010/11 £	2011/12 £	2012/13 £	2013/14 £
MPF	104.34	90.63	91.99	90.17	90.89
WLR	101.87	92.85	96.11	96.30	98.25
SMPF	9.73	9.15	9.35	9.08	9.14

A9.11 The unit cost estimates for MPF can be broken down by activity, as follows:

Figure 9.3: MPF cost stack by activity

MPF Cost stack by Activity	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
Use of Exchange-side Copper and Duct	3.00	3.34	3.52	3.66	3.78
Repair of Exchange-side Copper	2.99	2.65	2.59	2.50	2.53
Use of Distribution Copper and Duct	24.69	21.58	22.29	22.40	23.35
Repair of Distribution-side Copper	7.83	6.92	6.77	6.55	6.61
Repair of Dropwire & NTE - Business Line	3.76	3.05	3.01	2.95	3.01
Use of Dropwire and NTE (PSTN)	11.84	11.72	13.09	13.45	14.19
Test Access Management System (TAMS)	6.14	4.37	4.00	3.42	3.00
Use of Main Distribution Frame	5.82	4.42	4.35	3.49	3.20
Repairs on Main Distribution Frame	3.52	3.18	3.01	2.88	2.89
Service Centres - LLU	0.68	0.67	0.64	0.63	0.66
Computing - LLU	0.65	0.66	0.71	0.72	0.70
Sales & product Management	0.50	0.38	0.35	0.34	0.33
Operating Cost (£)	**71.42**	**62.94**	**64.32**	**62.98**	**64.24**
ROCE@10.1**/ 8.6 % (£)**	**32.91**	**27.69**	**27.68**	**27.19**	**26.65**
Total cost	**104.34**	**90.63**	**91.99**	**90.17**	**90.89**

A9.12 The unit cost estimates for WLR can be broken down by activity, as follows:

Figure 9.4: WLR rental cost stack by activity

WLR Basic cost stack by Activity	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
Line Cards	10.13	10.32	10.82	11.03	11.08
Use of Exchange-side Copper and Duct	2.98	3.31	3.50	3.64	3.76
Repair of Exchange-side Copper	2.88	2.55	2.49	2.41	2.43
Use of Distribution Copper and Duct	24.53	21.44	22.15	22.25	23.20
Repair of Distribution-side Copper	7.53	6.66	6.51	6.30	6.36
Repair of Dropwire & NTE - Business Line	3.87	3.14	3.10	3.04	3.11
Use of Pair Gain Systems (DACS)	0.00	0.00	0.00	0.00	0.00
Use of Dropwire and NTE (PSTN)	11.84	11.72	13.09	13.45	14.19
Use of Main Distribution Frame	2.91	2.21	2.17	1.74	1.60
Repairs on Main Distribution Frame	1.65	1.49	1.41	1.35	1.36
Line Test Equipment	0.23	0.31	0.36	0.34	0.36
Service Centres - WLR PSTN/ISDN	1.17	1.22	1.24	1.29	1.37
Directory Entries	1.80	1.96	2.12	2.24	2.36
Sales and Product management	0.27	0.26	0.27	0.27	0.27
Use of Evo TAMs	0.10	0.28	0.52	0.78	0.91
Operating Cost (£)	**71.91**	**66.88**	**69.77**	**70.12**	**72.35**
ROCE@ 10.1 / 8.6 % (£)	**29.96**	**25.98**	**26.34**	**26.18**	**25.90**
Total cost	**101.87**	**92.85**	**96.11**	**96.30**	**98.25**

A9.13 The unit cost estimates for SMPF can be broken down by activity, as follows:

Figure 9.5: SMPF rental cost stack by activity

SMPF cost stack by Activity	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
Repair of Exchange-side Copper	0.43	0.38	0.37	0.36	0.36
Repair of Distribution-side Copper	1.13	1.00	0.98	0.94	0.95
Repair of Dropwire & NTE - Business Line	0.08	0.06	0.06	0.06	0.06
Use of Main Distribution Frame	2.91	2.21	2.16	1.75	1.60
Repairs on Main Distribution Frame	1.17	1.06	1.00	0.96	0.96
Line Test Equipment	0.23	0.31	0.36	0.34	0.36
DSL Maintenance	1.11	1.26	1.22	1.18	1.20
Service Centres - LLU	1.31	1.30	1.23	1.23	1.28
Computing - LLU	0.65	0.66	0.71	0.72	0.70
Sales and Product Management	0.29	0.28	0.28	0.29	0.29
Use of Evo TAMs	0.10	0.28	0.52	0.78	0.91
Operating Cost (£)	**9.42**	**8.80**	**8.90**	**8.61**	**8.68**
ROCE@ 10.1 / 8.6 % (£)	**0.32**	**0.35**	**0.44**	**0.48**	**0.46**
Total cost	**9.73**	**9.15**	**9.34**	**9.08**	**9.14**

A9.14 We consider these costs in more detail below.

Review of Activity costs

Line cards

A9.15 Of the rental services, only WLR requires a line card. The forecast line card costs per WLR line are set out in the table below.

Figure 9.6: line card costs per WLR line

Line cards	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	-	-	-	-	-
WLR	10.13	10.32	10.82	11.03	11.08
SMPF	-	-	-	-	-

A9.16 In 2009 we considered what the costs would be of maintaining the existing TDM technology. When BT announced the suspension of the roll out of combi cards for its 21CN network, we considered that potentially there could be cost savings by not installing combi cards. However, as PSTN line cards were reaching the end of their life and must be replaced or refurbished, an assessment of what the steady state costs would be had to be made. Delaying replacement of PSTN line cards past their useful life or refurbishing them will result in higher maintenance costs which could increase overall costs.

A9.17 In 2009 we proposed using figures based on a weighted average of PSTN line card costs and a per service allocation of 21CN combi cards (when BT's plans involved

21CN gradually replacing PSTN over the period). If combi cards could be regarded as the most economical way of continuing to run the TDM network, their costs can be used as estimates of the costs of maintaining the existing TDM technology. This approach yielded a per line cost which was within the range of steady state PSTN line card costs in the RFS and was broadly constant in real terms over time.

A9.18 For reasons of consumer protection and efficiency, we considered that it would be appropriate to cap the costs recovered from voice only customers at the level that would be implied by hypothetical continued use of the existing TDM technology.

A9.19 For similar reasons, we propose to continue with this approach for this control.

A9.20 In 2013/14, the resulting CCA FAC of a voice line card was £11.08 per line per year. On a LRIC basis, we might expect this figure to be slightly lower than this.

A9.21 In 2004/05 in BT's Current Cost Financial Statements the line card cost was £14.89 (though this was based on assuming a rate of return of 13.5%). In 2005/06, it was £12.32. In 2006/07, it was £11.41. In 2007/08 the combined PSTN and service-allocated combi card cost was £11.71.

A9.22 On this basis we think that Openreach's FAC estimate is reasonable and we do not apply any additional efficiency or inflation adjustments.

Use of Exchange-side Copper and Duct

A9.23 Exchange-side copper and duct relates to the cost of using a copper line between the exchange and the cabinet. It relates mainly to CCA depreciation of the underlying assets. WLR picks ups a slightly lower cost than MPF because of the use of "Pair Gain" equipment, described in more detail in Annex 8

Figure 9.7: use of exchange side copper and duct

Use of Exchange-side Copper and Duct	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	3.00	3.34	3.52	3.66	3.78
WLR	2.98	3.31	3.50	3.64	3.76
SMPF	-	-	-	-	-

A9.24 The increase in costs over the period results from two factors. The first is changing asset values; in particular recent historic rises (including 2010/11 of 12 %) in Copper prices exceed forecast rises (at RPI) from 2011/12. The result is increased supplementary depreciation caused by past holding gains exceeds forecast in-year holding gains. The second factor is the RAV unwind (explained in detail in Annex 10). The RAV adjustment is applied in our model as a credit against depreciation. As pre 1997 RAV assets are replaced by post 1997 CCA assets, the difference between the RAV and CCA valuations diminishes, the RAV adjustment falls, increasing the unit cost.

Repair of Exchange-side Copper and Duct

A9.25 Exchange-side copper and duct relates to the cost of repairing the copper line between the BT exchange and the cabinet. MPF picks up more cost than WLR but

less cost that WLR plus SMPF due average frequency of Network faults actually repaired.

Figure 9.8 Repair of Exchange-side Copper

Repair of Exchange-side Copper	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	2.99	2.65	2.59	2.50	2.53
WLR	2.88	2.55	2.49	2.41	2.43
SMPF	0.43	0.38	0.37	0.36	0.36

A9.26 Costs fall between 2009/10 based on Openreach's actual and flexed budget. Costs then rise in 2011/12 as we forecast and allocate costs using actual fault rate information provided by Openreach. This generates more faults than using previous methodology based on reported faults Section 7. Faults costs then fall in 2012/13 as increased NGA activity draws in labour costs.

Use of Distribution-side Copper and Duct

A9.27 Distribution-side copper and duct covers the cost of using a copper line between the cabinet and the distribution point. It relates mainly to CCA depreciation of the underlying assets and is allocated in the same way as Exchange side Copper.

Figure 9.9: use of distribution copper and duct

Use of Distribution side Copper and Duct	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	24.69	21.58	22.29	22.40	23.35
WLR	24.53	21.44	22.15	22.25	23.20
SMPF	-	-	-	-	-

A9.28 As with Exchange side Copper, the unit cost is being driven up by increased Supplementary Depreciation and the RAV adjustment unwinding.

Repair of Distribution-side Copper

A9.29 Distribution-side copper and duct relates to the cost of repairing the copper line between the cabinet and the distribution point. As with Exchange side repairs, MPF picks up more cost than WLR but less cost that WLR plus SMPF due average frequency of Network faults actually repaired.

Figure 9.10: repair of distribution-side copper

Repair of Distribution-side Copper	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	7.83	6.92	6.77	6.55	6.61
WLR	7.53	6.66	6.51	6.30	6.36
SMPF	1.13	1.00	0.98	0.94	0.95

A9.30 These costs move in a similar way as those for exchange-side copper, as discussed above.

Repair of Dropwire & NTE

A9.31 The cost is for the repair of the Copper pair between the Distribution Point and the phone socket located within end users premises.

Figure 9.11: repair of Dropwire & NTE – Business line

Repair of Dropwire & NTE - Business Line	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	3.76	3.05	3.01	2.95	3.01
WLR	3.87	3.14	3.10	3.04	3.11
SMPF	0.08	0.06	0.06	0.06	0.06

A9.32 As with D and E side Copper repairs, costs fall between 2009/10 based on Openreach's actual and flexed budget. Costs then rise in 2011/12 as we forecast and allocate costs using actual End user fault rate information provided by Openreach. This generates more faults than using previous methodology based on reported faults (see Section 7). Faults costs then fall slightly in 2012/13 as increased NGA activity draws labour costs away from CRS.

Use of Dropwire and NTE (PSTN)

A9.33 The cost relates principally to the depreciation of the dropwire asset (the Copper pair between the Distribution Point and the phone socket located within end users premises).

Figure 9.12: use of Dropwire and NTE (PSTN)

Use of Dropwire and NTE (PSTN)	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	11.84	11.72	13.09	13.45	14.19
WLR	11.84	11.72	13.09	13.45	14.19
SMPF	-	-	-	-	-

A9.34 The cost for the use of Dropwire is rising for two reasons.

- Firstly, like D and E Side Copper, the underlying asset costs are subject to holding gains. The result is supplementary depreciation caused by past holding gains exceeds forecast in-year holding gains.

- Secondly, there is the unwind of the Dropwire Adjustment. The Dropwire adjustment ensures Openreach does not double recover costs on dropwires that had been paid for under the Retail price control in 2006. As explained in section 7, as these dropwires are written off, the value of the adjustment, which reduces the cost stack, falls.

Test Access Management System

A9.35 Test Access Management Systems (TAMs) are used to provide remote access test facilities on broadband circuits both towards the end user and into the network. They are installed between the Main Distribution Frame (MDF) and the Digital Subscriber Line Access Multiplexer (DSLAM). Costs are comprised principally of asset depreciation with associated overhead. TAMs can only be used on MPF lines.

Figure 9.13: TAMs

Test Access Management System (TAMS)	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	6.14	4.37	4.00	3.42	3.00
WLR	-	-	-	-	-
SMPF	-	-	-	-	-

A9.36 Because the TAM investment programme preceded the mass take up of MPF, unit costs are much higher in 2009/10 due to low volumes. This has previously been acknowledged by Ofcom in connection with TAMs where for policy reasons (we considered these as start up systems costs) and allocated them over a larger pool of product volumes. We propose a similar approach for the purpose of setting prices, as set out in Section 7.

Use of Main Distribution Frame

A9.37 This activity covers the cost of the Main Distribution Frames (MDFs). MDFs are the frames providing a direct interface with external circuits' terminations (customer or other exchanges). The main cost is asset depreciation and overheads relating to the space occupied by the frames.

Figure 9.14: use of MDF

Use of Main Distribution Frame	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	5.82	4.42	4.32	3.50	3.20
WLR	2.91	2.21	2.16	1.75	1.60
SMPF	2.91	2.21	2.16	1.75	1.60

A9.38 The projected reduction in MDF costs is due to the fall in depreciation as the heavily depreciated assets are not being replaced. A secondary effect is the fall in Accommodation and Cumulo costs, particularly between 2009/10 and 2010/11.

Repairs on Main Distribution Frame

A9.39 The main type of repair cost is the engineering pay costs and associated overheads with this activity.

Figure 9.15: repairs on MDF

Repairs on Main Distribution Frame	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	3.52	3.18	3.01	2.88	2.89
WLR	1.65	1.49	1.41	1.35	1.36
SMPF	1.17	1.06	1.00	0.96	0.96

A9.40 As with D and E side Copper repairs, costs fall between 2009/10 based on Openreach's actual and flexed budget. Costs then rise in 2011/12 as we forecast

and allocate costs using actual Exchange fault rate information provided by Openreach. This generates more faults than using previous methodology based on reported faults (see Section 7). Faults costs then fall slightly in 2012/13 as increased NGA activity draws labour costs away from CRS

Line test equipment and evoTAMs

A9.41 Line test equipment costs are the depreciation of equipment that supports line testing of PSTN lines and ISDN circuits. These costs are allocated between WLR Basic, WLR Premium, SMPF, ISDN2 and ISDN30. EvoTAMs are the new generation of line test equipment. Unlike legacy equipment they can be used to test broadband frequencies on a line.

Figure 9.16:Line test equipment

Line test equipment	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	-	-	-	-	-
WLR	0.34	0.59	0.88	1.12	1.27
SMPF	0.34	0.59	0.88	1.12	1.27

A9.42 Unit costs increase markedly over the period as new evoTAMs replace depreciated legacy equipment. As discussed further in section 7, there is a concern that the equal allocation to WLR and SMPF may not be appropriate given the location of evoTAMs at only 21CN enabled Exchanges and Openreach's charging policy for them.

A9.43 As explained in section 7, we are seeking stakeholder views on whether it is appropriate to include evoTAM costs in the cost stacks used to inform prices.

Service Centres - Assurance for LLU

A9.44 The costs from the service centre teams are allocated to product groups based on analysis of KMH. The KMH allocated to this activity are for the ongoing service of LLU products (e.g. fault handling). Provisioning costs are separately identified.

Figure 9.17: Service centres -LLU

Service Centres - LLU	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	0.68	0.67	0.64	0.63	0.66
WLR	-	-	-	-	-
SMPF	1.31	1.30	1.23	1.23	1.28

A9.45 The service centre costs recorded as LLU are not split between SMPF and MPF. The figures above allocated on usage consistent with those published in the RFS.

Service Centres - Assurance for WLR PSTN/ISDN

A9.46 The costs are the recorded and identified in the same way as LLU Assurance.

Figure 9.18: Service centres - assurance for WLR PSTN/ISDN

Service Centres - Assurance for WLR PSTN/ISDN	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	-	-	-	-	-
WLR	1.17	1.22	1.24	1.29	1.37
SMPF	-	-	-	-	-

A9.47 Like LLU, service centres hours are allocated to one code for ISDN and WLR. In terms of how this these costs are allocated, ISDN2 picks up a higher share than WLR.

Computing LLU

A9.48 Computing costs for LLU are depreciation costs for IS assets, allocated between WLR and LLU on an estimated basis of how the assets were built up.

A9.49 The LLU costs are spread over a fairly wide product base; all LLU rentals plus connections plus co-mingling. WLR Rentals do not pick up an equivalent amount as these costs are allocated to connections and takeovers only, although WLR rentals are reallocated these costs through the pricing adjustment (see section 7)

Figure 9.19: computing LLU

Computing LLU	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	0.65	0.66	0.71	0.72	0.70
WLR	-	-	-	-	-
SMPF	0.65	0.66	0.71	0.72	0.70

Directory entries

A9.50 The costs of providing a Phonebook entry for WLR end users consist entirely of the Openreach payment to BT Retail for phonebook cost recovery.

A9.51 Although BT delivers phonebooks to all households and businesses regardless of how the service is provided to the end user (including those who take no Openreach service), only WLR includes a contractual commitment for Openreach to provide a phonebook to each end user. Therefore, we have allocated the full cost of producing and delivering telephone directories to the WLR service.

Figure 9.20: Directory entries

Directory entries	2009/10	2010/11	2011/12	2012/13	2013/14
	£	£	£	£	£
MPF	-	-	-	-	-
WLR	1.80	1.96	2.12	2.24	2.36
SMPF	-	-	-	-	-

A9.52 The increase in unit costs is a consequence of the forecast reduction in the number of WLR lines

Sensitivity of cost estimates to key assumptions

A9.53 To inform stakeholders' responses to this consultation by illustrating the sensitivity of our cost estimates to our key assumptions, the table below illustrates the approximate effect of changing the key assumptions on our estimated cost stacks for the core rental services.

Figure 9.21: Sensitivity of cost estimates to key assumptions

Assumption	Sensitivity	MPF	WLR	SMPF
		£	£	£
Base case		**90.89**	**98.25**	**9.14**
Volumes	100,000 change in aggregate volumes in 2011/12 (inc 43k fall in SMPF)	0.40	0.40	<0.10
Mix	100,000 shift from WLR+SMPF to MPF	<(0.10)	0.10	<0.010
Efficiency, including fault rates	0.5% change in net efficiency gains per year from 11/12	(0.70)	(0.60)	(0.10)
Inflation (non-pay)	0.5% (increase) change in general inflation assumption	0.20	0.20	<0.10
Inflation (pay)	0.5% (increase) change in pay inflation	0.20	0.20	<0.10
Light user scheme	Inclusion of light user scheme costs	2.20	2.20	-
Rejection of RAV	All assets restated at CCA	2.30	2.30	-
Duct valuation	Accept BT's valuation	3.50	3.50	-
Copper valuation	5% reduction in opening value of copper assets	(1.40)	(1.40)	-
Cost of Capital	0.5% (decrease) change in cost of capital	(1.70)	(1.60)	<(0.10)
Holding gains	0.5% (increase) change in holding gains form 10/11 (inc Cu and duct)	0.50	0.50	<0.10

Annex 10

Review of Assets

A10.1 The key assumptions on assets are as follows;

Figure 10.1: Key assumptions on assets

Parameter	Assumption
Capital Expenditure	Volume driven Capex based on Ofcom Forecasts. Programme driven Capex provided by Openreach
Depreciation	Based on RFS
Holding Gains	Average RPI, except for 2010/11 Copper gain
RAV Adjustment	RAV model used
Duct Valuation	Approach to 2009/10 Asset valuation as set out in Annex 5 input into RAV model
Copper Valuation	5.2% holding gain input into RAV model for 2010/11

Projecting Capital Expenditure

A10.2 For the purposes of forecasting Openreach's costs we have projected Openreach's future capital expenditure in the Cost Forecast model as follows;

A10.3 We obtained from Openreach the following data;

- The amount of actual and forecast labour time spent on non-volume driven operational capital programmes (termed Complex KMH), for example on Fault Rate Reduction;
- As set out in Section 7, Openreach provided Ofcom with the product volume to Operational activity usage factors and the 2009/10 capitalisation ratios for each Operational activity (including Complex KMH). We assumed these ratios to be fixed going forward to 2013/14.
- The mapping of Capitalised Operational activity (including Complex KMH) to Capex Programmes

A10.4 Applying this information to our KMH forecasts, built up from our volume assumption and Openreach forecast Complex KMH, we forecast Operational Capex KMH, then converted these KMHs into costs using FTE assumptions and then allocated the costs to Capex programmes using the mapping provided by Openreach.

A10.5 The next stage was to convert labour Capex into Capex programme costs. To do this we compared the labour element of the 2009/10 and 2010/11 Capex programmes with the total Capex programme costs provided by Openreach which were consistent with the RFS. In all cases, as expected, Openreach incur additional costs to labour. Dividing total costs by labour costs produced a 'gross up' factor.

The 'gross up' factors for 2009/10 and 2010/11 were compared and discussed with Openreach. For our modelling we concluded that the 2010/11 'gross up' factors were appropriate to apply to our forecast labour Capex Programme costs through to 2013/14. The resultant Total Capex driven by Operations is set out in table x below

A10.6 In addition Openreach provided its forecast Programme Capex not driven by Operations, set out in Figure 10.2 below for the forecast years.

Figure 10.2:Total capex driven/not driven by ops – Ofcom forecasts

Total Capex driven by ops – Ofcom Forecast	**2011/12 £'m**	**2012/13 £'m**	**2013/14 £'m**
Final Drop	129.25	122.84	114.80
Other volume driven copper	118.86	62.16	59.01
Network Health and resilience	136.49	136.04	131.47
LLU	61.18	20.58	20.14
Other	23.52	23.52	23.52
Fibre	[✂]	[✂]	[✂]
	[✂]	**[✂]**	**[✂]**
IT Capex	[✂]	[✂]	[✂]
Evo TAMs	[✂]	[✂]	[✂]
Total Capex not driven by ops – Openreach Forecast	**175.05**	**117.69**	**99.44**
Total Programme Capex	**[✂]**	**[✂]**	**[✂]**

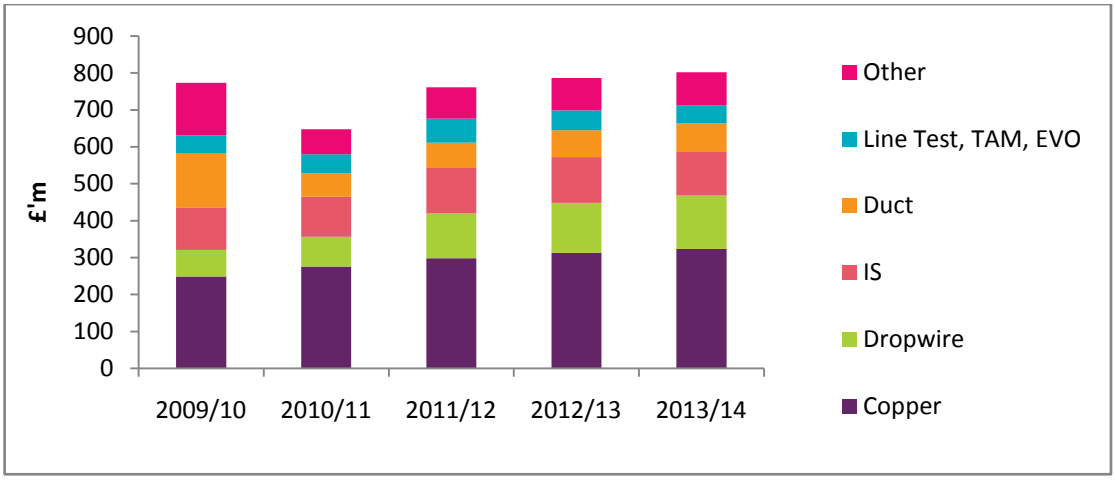
A10.7 The next step in the modelling was to convert the Programme Capex costs into Fixed Asset categories in order to forecast asset and depreciation costs. To do this BT supplied the allocation mapping used in the 2009/10 RFS to allocate Programme Capex to Classes of Work (COW- such as LDC - D side Copper) and the subsequent mapping of these COWs to Fixed Asset categories. The resultant Fixed Asset figures are used in the Cost Allocation model. In respect of Copper and duct, the information is also used in the RAV model.

A10.8 Finally for the Cost Forecast model, Openreach supplied RFS data on the asset life of each COW and the forecast depreciation charge and retirement schedule for legacy assets. Incremental depreciation on Capex calculated in the model was combined with the legacy depreciation and the aggregated depreciation charge output to the CA model (this information is not required for the RAV model).

Projecting Depreciation

A10.9 During the period, overall depreciation (HCA plus CCA inc holding gain) increases from £709m to £802m. This net £93m increase can be broken down as follows;

Figure 10.3: Net depreciation breakdown



Asset Class	∆m	Reason
Copper	+140	The increased valuation in Copper prices up to 2010/11 (20% in 09/10 and 5% in 10/11) results in higher depreciation because the higher asset value is written off over the remaining asset life. These exceed future holding gains which average 3.0% from 2011/12 onwards
Dropwire	+73	Dropwire is depreciation increases for the same reason as Copper. In addition, the change of Accounting policy in 2001 for Dropwire, which meant writing the asset off over ten years results in depreciation in the period to 2011/12 increasing by 10th per annum until the asset base reaches a steady state.
Line Test (inc TAM and EVO Tam) and Frames	+1	Openreach are in the process of rolling out new evoTAM line testing equipment. Depreciation rises by £26m as evoTAM investment is front loaded in our modelling. Offsetting this is a £25m fall in Frame depreciation as the asset base is virtually written off by 2013/14 due to little additional capex
Duct	-71	Duct depreciation is distorted by absence of any in year holding gain in 2009/10 due to the Duct revaluation that would normally have reduced depreciation in that year
Other	-50	The 2009/10 figure is distorted by a £50m holding loss in relation to fibre assets.
	93	

Projected changes to asset values (Holding Gains)

A10.10 Under a CCA approach to setting prices, assets are valued by reference to the cost of replacing the asset at today's prices – their current cost - rather than their original, or historic, cost. If prices go up, the asset value is higher than it otherwise would have been. As a result, the annual depreciation charge would increase as it is based on a higher asset value. However, over the lifetime of the asset, this increase in the annual depreciation charge – which would cause costs to increase - is offset exactly by the holding gain (the gain made by holding the asset while it increases in value).

A10.11 Asset inflation also affects the calculation of the mean capital employed and increasing asset prices causes the assessment of the reasonable return on those assets to increase.

A10.12 It is therefore necessary to predict how asset values might change during the control period.

A10.13 We have used forecast RPI to apply to all assets subject to CCA adjustments in the Cost Allocation model and in the RAV model (with the exception of 2010/11 Copper). For RAV assets this applies to all elements (Labour and non Labour) For the purpose of this calculation we have assumed an average annual rate of 3% with the exception of 2010/11 where we have forecast 4.4%.

Calculating the RAV adjustment

A10.14 As discussed in more detail in Annex 11, in respect of Copper and Duct, we used the RAV model to calculate these asset costs.

A10.15 The RAV model is used to calculate the asset values and depreciation charges (including holding gains) which are input into the Cost Allocation model. The RAV model calculates these for both pre and post 1997 assets. The RAV model outputs (that apply to Openreach) replace the CCA values calculated within the Cost Allocation model.

A10.16 The RAV model has a record of assets and when they were acquired as well as the historic (actual) holding gains and asset lives. It forecasts both the pre and post 1997 CCA and RAV asset valuations using input Capex from the Cost Forecast model and the RPI assumptions above (except 2010/11 Copper) to calculate holding gains.

A10.17 In respect of the 2009/10 value of Duct and the 2010/11 Copper holding gains, further adjustment in the RAV model was required.

Revaluing Duct in 2009/10

A10.18 As discussed in more detail in Annex 5, we have considered the basis for BT's valuation of its Duct assets in 2009/10. As explained in Annex 5, for the purposes of this charge control, we have not accepted their valuation and have proposed alternative valuation methodologies using price indices.

A10.19 For the purpose of illustrating the effect of determining the CCA value of post-1997 duct assets by reference to a price index, we have used RPI. We consider that this provides a sensible base case for our cost modelling and delivers an answer that is broadly similar to the effect of indexation linked to GBCI-2%, offset by the holding loss on the capex in the final year if the national discount was applied.

Copper Holding Gain in 2010/11

A10.20 The valuation principle for Copper is described in Section 7. For the modelling, we estimated a 12% increase in copper prices based on traded copper price data we obtained between April 2010 and January 2011. Copper cabling represents around a third of the asset cost, labour and other construction costs making up the balance. BT provided Ofcom with supplementary data to the 2009/10 RFS which showed the breakdown of copper assets into its component parts.

A10.21 We used the supplementary information to apply a 12% increase to the copper cabling element (adjusted to account for the fact that copper cabling would not exactly track traded copper prices) and RPI to the remainder to determine a

blended 5.2% holding gain. This was input as the price holding gain in the RAV model for 2010/11 rather than RPI.

Resultant CRS Asset base

A10.22 Our base case forecast of the CRS asset base is as follows:

Figure 10.4: Base case forecast of CRS asset base

	2009/10	2010/11	2011/12	2012/13	2013/14
	£m	£m	£m	£m	£m
Computing	177	162	145	119	106
Dropwire	709	722	705	666	620
D Side Copper	1,895	2,167	2,193	2,146	2,055
Duct	2,190	2,067	2,136	2,166	2,181
E Side Copper	393	469	475	465	445
Line Testing Equipment and Frames	130	160	194	194	173
Fixed Asset Other	13	17	17	15	16
	5,507	**5,764**	**5,865**	**5,771**	**5,596**

A10.23 The main movements are as follows:

- D and E side copper. Rises in 2010/11 as a result of the holding gain from increased copper prices. From 2012/13 asset falls due to resultant supplementary depreciation.
- Dropwire. Falls over the period as the Dropwire adjustment unwinds and asset gets older
- Line Testing Equipment and Frames. On the one hand for EvoTAMs high levels of investment in these new assets up to 2012/13 per Openreach's investment programme leads to a build up of the asset base. Partly offsetting this rise are Frames costs. The asset value approaches zero as they become fully depreciated with little new Capex.

Annex 11

The Regulatory Asset Value (RAV)

Introduction

A11.1 We explain in Annex 5 the reasons for our proposal to continue with the RAV approach and our proposed approach to the valuation of duct.

A11.2 The purpose of this annex is to explain how we have modelled the effects of the RAV approach for asset valuations

Review of RAV calculations

A11.3 For this price control, we have used a model built by BT to generate the indexed value of the pre-1997 assets and the CCA valuation of the post 1997 assets. The RAV model, on a total BT basis, sets out, on a historic basis the value of assets, additions, disposals, depreciation. It also has a record of the actual current cost adjustments made, namely the holding gains. The model calculates the asset and depreciation cost on a forward looking basis. The outputs of the model are historical and forecast CCA and RAV values for the copper and duct asset base, as well as depreciation charge and holding gains. These outputs are multiplied by the relevant percentage appropriate to the Access network to produce inputs into the Cost Allocation model.

A11.4 We have reviewed the key inputs and calculations and, subject to the comments below regarding the duct valuation, have found no material error. On this basis, our view is that the model provides a reasonable basis for determining the RAV adjustments, subject to the appropriate choice of assumptions. As explained below, the key assumptions used in the model are Ofcom's and are subject to this consultation. The RAV model is available to stakeholders on request.

A11.5 We reconciled RAV model outputs for duct and copper to the Regulatory Financial Statements. Historic capex agreed to disaggregated data from the RFS. Depreciation and disposals were recalculated and appeared consistent with the RFS.

A11.6 We also examined the key forward looking assumptions. Capital expenditure was modelled by Openreach based on the 09/10 actual data and was broadly consistent with Ofcom's forecasts. For the price control we replaced the Openreach Capex forecasts with our own generated from the CF Model. Assets are retired in the year when they become fully depreciated. Depreciation appears reasonable at 18 years on average for copper and 40 years for duct.

A11.7 The table below is an extract from the RAV model. It shows how the total impact (£144m) of the RAV adjustment is built up based on the difference between the Copper and Duct pre 1997 asset valuations. This adjustment is applied against Copper and Duct Asset and depreciation costs in the CA model which are then allocated to activities (such as D side copper) which are allocated to products based on the usage of those activities.

		2009/10	2010/11	2011/12	2012/13	2013/14
Access Net Balance Sheet Value (closing)						
CCA		7,641	7,714	7,634	7,452	7,248
RAV		7,114	7,256	7,248	7,123	6,965
Difference = RAV - CCA		**-526**	**-457**	**-386**	**-329**	**-284**
Access Net Balance Sheet Value (mean)						
CCA		7,430	7,677	7,674	7,543	7,350
RAV		6,815	7,185	7,252	7,185	7,044
Difference = RAV - CCA		-615	-492	-422	-357	-306
Cost Stack Adjustments						
CCA	Depreciation	586	630	647	651	649
	THG	-331	-192	-192	-189	-184
	ROCE	750	660	660	649	632
	Total	**1006**	**1098**	**1115**	**1112**	**1097**
RAV	Depreciation	478	519	548	565	576
	THG	-303	-180	-181	-180	-176
	ROCE	688	618	624	618	606
	Total	**863**	**957**	**990**	**1003**	**1006**
Difference = RAV - CCA	Depreciation	-109	-111	-100	-86	-73
	THG	27	12	11	9	8
	ROCE	-62	-42	-36	-31	-26
	Total	**-144**	**-141**	**-125**	**-108**	**-91**
Assumed ROCE		10.10%	8.60%	8.60%	8.60%	8.60%
Copper CCA	Pre 97	270	194	119	57	12
	Post 97	3,440	3,550	3,560	3,469	3,339
		3,710	**3,744**	**3,679**	**3,525**	**3,351**
Allocated to access	96%	3,562	3,594	3,532	3,384	3,217
Duct CCA	Pre 97	2,299	2,207	2,086	1,969	1,857
	Post 97	2,188	2,325	2,427	2,506	2,578
		4,487	**4,532**	**4,513**	**4,474**	**4,435**
Allocated to access	91%	4079	4119	4102	4067	4031
CCA Access assets		**7,641**	**7,714**	**7,634**	**7,452**	**7,248**
Copper RAV	Pre 97	276	211	148	89	43
	Post 97	3,440	3,550	3,560	3,469	3,339
		3,716	**3,761**	**3,708**	**3,558**	**3,382**
Allocated to access	96%	3,568	3,611	3,560	3,416	3,247
Duct RAV	Pre 97	1,714	1,686	1,631	1,572	1,512
	Post 97	2,188	2,325	2,427	2,506	2,578
		3,902	**4,011**	**4,058**	**4,078**	**4,090**
Allocated to access	91%	3,547	3,646	3,688	3,707	3,718
RAV Access assets		**7,114**	**7,256**	**7,248**	**7,123**	**6,965**

Annex 12

Cost of Capital

Introduction

A12.1 The cost of capital is important for setting charge controls – it makes up a significant proportion of the cost for most regulated telecommunications services.

A12.2 We have used an established method for estimating the cost of capital for a number of years. Our method closely reflects that adopted by other regulators.

A12.3 Estimating the cost of capital is difficult following the period of unusual capital market instability of late 2008. This has been recognised by Ofcom and by other regulators, including the Competition Commission.

A12.4 Notwithstanding this, certain aspects of our 2009 estimates of the cost of capital for BT were reviewed by the CC in two separate appeals and we were found not to have erred on the points raised. Thus we believe that our assessment framework remains appropriate, and that the approach we take to the estimation of the various parameters that drive our estimates of the cost of capital is generally reasonable.

A12.5 For this reason – along with a desire for consistency - we propose to use the same framework to estimate the cost of capital as we have done in the recent past.

A12.6 Our estimates of the cost of capital for BT Group, Openreach and the Rest of BT are set out in Figure 12.1, alongside our previous estimates in May 2009.

Figure 12.1: Cost of capital estimates for BT – May 2009 vs. January 2011: pre-tax nominal WACC estimates

	Openreach	BT Group	Rest of BT
May 2009[21]	10.1%	10.6%	11.0%
Jan 2011	**7.9% – 9.4%**	**8.2% - 9.7%**	**8.5% - 10.0%**
Jan 2011 (mid-point)	**8.6%**	**8.9%**	**9.3%**

A12.7 Having developed initial updated estimates of the cost of capital, the headline figures for the cost of capital for BT Group (and its constituent businesses) appear to show a marked reduction (between 1% and 2.5%, pre-tax, nominal) as compared with our 2009 estimates.

A12.8 This reduction is (in roughly equal parts) attributable to:

a) Macroeconomic changes (lower interest rates, and reduced corporate taxes); and

b) BT specific changes (an apparent reduction in the perceived risk of BT's business when compared to the general market).

[21] See Annex 8 of the May 2009 statement "A new pricing framework for Openreach": http://stakeholders.ofcom.org.uk/binaries/consultations/openreachframework/statement/annexes.pdf

A12.9 However, the scale of the change in our estimate of BT's cost of capital is significant, and greater than the changes we have seen over similar periods in the recent past.

A12.10 That said, we have undertaken a comparison of the overall "premium" above the prevailing risk free rate afforded to BT's investors in our estimates. The premium captured in our revised cost of capital estimates is similar to that reflected in our 2009 LLU decisions, and higher than that reflected in earlier (2005) cost of capital estimates (see paragraphs 12.159 – 12.165 for more detail). This would suggest that BT's overall risk premium has gone up over time, even though the headline cost of capital for BT has fallen.

A12.11 We anticipate that the cost of capital estimates set out in this annex will be applicable in a number of BT charge controls being determined in 2010/11, including our WBA charge control, and the LLU/WLR and ISDN30 controls, and may be used for other controls where applicable.

A12.12 To summarise:

- The headline (pre-tax, nominal) cost of capital for BT does appear to have fallen significantly, although in our view this masks an increased risk premium captured in our estimates for BT.

- Given the apparent scale of change we are cautious in adopting the new lower rate, and welcome stakeholders' views on this issue.

A12.13 We are confident that the range of values on which we are consulting is reasonable, although we recognise the unusual recent capital market volatility and uncertainty that prevails around certain key parameters. Therefore, given our desire for caution, we have elected to consult on a broad range for our cost of capital estimates at this stage. The range, of around 1.5%, is similar in magnitude to the range we adopted when we published our final consultation to the LLU charge control in September 2008, also at a time of uncertainty.

A12.14 As noted earlier, this review of BT's cost of capital will also inform the determination of other charge controls, which will be set over the next few months. It is important to note, however, that the outcome of those reviews will be determined by a range of factors and not simply potential changes in BT's cost of capital.

A12.15 In this section we cover the following areas:

a) How do we estimate and use the cost of capital? ;

b) Updated estimates (and how they compare with previous estimates);

c) Why our new estimates are lower;

d) Key parameter values[22]:

   i) The risk-free rate,

   ii) Gearing,

[22] For each parameter required to estimate BT's cost of capital, we will explain what the parameter represents, how it affects our overall cost of capital estimates, what we have said previously, what the latest evidence says, and what estimate we propose to adopt.

iii) Equity Risk Premium (ERP)

iv) BT's equity/asset beta,

v) Cost of debt/debt premium

vi) Corporate tax rates

vii) Ofcom's Pensions Review.

e) The trend in our overall cost of capital estimates; and

f) Detailed calculations.

How do we estimate and use the cost of capital?

A12.16 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.

A12.17 We usually mean a weighted average cost of capital (WACC). The WACC is often used as an input in a number of areas of our work, including charge controls, market reviews and licence valuations.

A12.18 Companies have two basic ways of obtaining funding, through debt or equity. By knowing the proportion of each type of funding, and estimating the cost of each, we can estimate the WACC.

A12.19 The model we have consistently used for estimating the cost of capital is the Capital Asset Pricing Model (CAPM), which the Competition Commission[23] found to be the most robust way for a regulator to measure the returns required by shareholders.

The Capital Asset Pricing Model

A12.20 In its simplest form, the weighted average cost of capital for a firm is derived as follows:

$$WACC = K_e * (1 - g) + K_d * g$$

[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 ERP), and the perceived riskiness of the asset in question (β), such that $K_e = r_f + \beta$ (ERP).
2. Kd = 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 $K_d = r_f + d_p$

[23] Indeed, in its Bristol Water determination in September 2010, the CC said the following:
"In our 2007 report on Heathrow and Gatwick, we looked at alternatives to CAPM and found that:
(a) CAPM remains the tool with the strongest theoretical underpinnings;
(b) it is not at all clear from the academic literature that other models have better predictive power, particularly when applied to UK companies; and
(c) none of the alternative models helps to overcome the problems that CAPM has in dealing with limited market data.
We believe that these points remain valid. Hence, we also continue to believe that although the CAPM has its limitations, it is the most robust way for a regulator to measure the returns required by shareholders. Moreover, we have placed considerable weight on the CAPM in previous regulatory inquiries and we see benefits in consistency."

3. g = gearing, which is defined as net debt divided by enterprise value. Enterprise value is defined as net debt plus market capitalisation.]

A12.21 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.

A12.22 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.

A12.23 In this charge control, we are estimating the cost of capital for a 3 year charge control period. 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.

A12.24 In this section we set out calculations that are relevant for the period April 2013 to March 2014. This is the final year of the charge controls being set at this time.

Frequency of Ofcom's reviews of the cost of capital

A12.25 We last estimated the cost of capital for BT in May 2009. The charge controls we are currently reviewing will come into effect in 2011. We consider it is appropriate to review the cost of capital as part of these reviews. In doing so we need to balance:

- The need to ensure that cost of capital estimates are not out of date by the end of the period, by using the best available data on a relatively frequent basis; and
- The desire for continuity and certainty for investors and stakeholders, which would suggest that longer periods between reviews is appropriate.

Our methodology remains consistent

A12.26 In general we believe that estimates of the WACC based on current and historic data will remain relevant and valid for the periods during which the different charge controls will apply.

A12.27 However, it may not always be appropriate to rely solely on current market data. For example, we know that the rate of corporation tax will fall over the next few years, to 25% during the final year of the control. So it may be appropriate to recognise this in our estimates.

A12.28 In addition, our observations of market data suggest that some parameters have moved significantly in recent months, or currently imply values which may not be reliable indicators of their value for our purposes.

A12.29 One such parameter is the risk-free rate, which we observe to be at a historically low level. In this instance, we need to be careful in selecting values to ensure that they are appropriate and not unduly influenced/distorted by very particular short term events.

A12.30 For example, in the past, in relation to the risk-free rate, we have given significant weight to an observed tendency for mean reversion[24]. We do not feel it is appropriate to depart from this well-understood methodology.

Estimating different costs of capital for Openreach[25] and Rest of BT

A12.31 In addition, in the past we have estimated and applied different cost of capital estimates for different parts of BT Group (Openreach and Rest of BT), on the grounds that they have different systematic risk profiles.

A12.32 This approach involves consideration of the BT Group asset beta, as well as a range of utility asset betas. We assume that Openreach (which accounts for around half of BT Group's capital employed) has some utility-like characteristics, so has less systematic risk than BT Group, but more than a pure network utility, such as a power or water transmission network company.

A12.33 Therefore to estimate the Openreach asset beta we have in the past adjusted the BT Group asset beta downwards somewhat, but not by so much that it had a lower asset beta than a network utility. Given this we then derived the implied asset beta of the Rest of BT. We have adopted a similar approach here in reaching our revised estimates, and the resulting asset beta estimates can be seen in Figure12.2. and are explained in paragraphs 12.139 – 12.142.

Question 12.1: We welcome stakeholders' views on Ofcom's approach to estimating two different costs of capital for Openreach and Rest of BT.

Our updated estimates

A12.34 We last estimated BT's cost of capital in May 2009, in the final statement of "A new pricing framework for Openreach". We estimated the pre-tax nominal cost of capital for Openreach to be 10.1% and for the Rest of BT to be 11.0% (this is shown in Figure 12.2).

Figure 12.2: BT Cost of Capital estimates May 2009[26]

	Openreach	BT Group	Rest of BT
Equity Risk Premium	5%	5%	5%
Asset beta	0.55	0.61	0.68
Equity beta at 35% gearing	*0.76*	*0.86*	*0.96*
Real risk-free rate	2%	2%	2%
Inflation[27]	2.5%	2.5%	2.5%
Debt premium	3%	3%	3%
Tax rate	28%	28%	28%
Post-tax real WACC	*4.8%*	*5.1%*	*5.4%*

[24] Mean reversion describes a general tendency by certain parameters (such as the risk-free rate) to fluctuate around observed average levels. If the parameter value is above or below the average for a period of time, mean reversion suggests that it will trend back towards the average in time.
[25] Note that the cost of capital for Openreach is more specifically a rate for BT's copper access services business.
[26] We made these estimates in May 2009, and they were reviewed by the Competition Commission in the 2009 Appeal of LLU Charges. The CC determined that we had not erred in our assessment of the cost of capital, on the grounds raised by Carphone Warehouse.
[27] We assumed inflation of 2.5% for year 2 of our charge control, and 0% in year 1.

Pre-tax nominal WACC	**10.1%**	**10.6%**	**11.0%**

A12.35 Our latest estimates are shown in Figure 12.3.

Figure 12.3: BT Cost of Capital estimates January 2011

	Openreach	BT Group	Rest of BT
Equity Risk Premium	5%	5%	5%
Asset beta[28]	0.4 – 0.55	0.45 – 0.60	0.5 – 0.65
Equity Beta at 50% gearing	*0.68 – 0.98*	*0.78 - 1.08*	*0.88 - 1.18*
Real risk-free rate*	1.5%	1.5%	1.5%
Inflation	2.5%	2.5%	2.5%
Debt premium	2% - 2.5%	2% - 2.5%	2% - 2.5%
Tax rate*	25%	25%	25%
Post-tax real WACC (mid-point)	*3.9%*	*4.2%*	*4.4%*
Pre-tax nominal WACC	8.0% - 9.2%	8.3% - 9.5%	8.6% - 9.9%
Pre-tax nominal[29] (extended range)	**7.9% – 9.4%**	**8.2% - 9.7%**	**8.5% - 10.0%**
Pre-tax nominal (mid-point)	**8.6%**	**8.9%**	**9.3%**

* These are prospective estimates for 2013/4, the final year of the current round of charge control consultations. If we were to estimate BT's WACC for different periods we may use different rates.

A12.36 Note that we have extended our consultation ranges slightly in order to reflect inherent uncertainty caused by some of the data being affected by the credit crisis. This does not, however, affect the mid-point estimates shown at the bottom of Table 12.3. We adopted a similar range of around 1.5% when we published our final consultation in September 2008 ahead of publishing final estimates in May 2009.

Why our new estimates are lower

A12.37 Our approach in this consultation, when estimating the cost of capital, is the same as it has been in the past: we observe and take account of relevant market data and exercise our judgement in interpreting that data.

A12.38 The changes we propose to our estimates of BT's cost of capital can be considered to be of two types: market-wide changes that affect all companies, and changes that are specific to BT.

A12.39 Our observations highlight two significant changes since 2009:

- A significant reduction in the risk-free rate; and
- A significant reduction in BT Group's asset beta.

A12.40 In addition there have been smaller changes to other parameters, such as the corporate tax rate and the debt premium.

A12.41 Table 12.4 sets out how these changes impact our overall BT Group estimates:

[28] These asset betas are calculated based on gearing of 50% and a debt beta of 0.125.
[29] We have extended our consultation ranges at both the upper and lower ends, to give a range of 1.5% in line with our September 2008 LLU consultation range.

Figure 12.4: Changes to BT Group WACC estimates

	2009	2011 (mid-point)	Change to WACC estimate
Nominal risk-free rate	4.5%	4.0%	(0.6%)
Tax rate	28%	25%	(0.3%)
ERP	5.0%	5.0%	-
Market-wide changes			***(0.9%)***
Asset beta	0.61	0.525	(0.5%)
Debt premium	3%	2.25%	(0.3%)
Company-specific			***(0.8%)***
Pre-tax nominal WACC	**10.6%**	**8.9%**	**(1.7%)**

A12.42 Market-wide changes to our proposed WACC parameters account for 0.9% of the reduction in the cost of capital, while company-specific changes (estimated based on the mid-points of our ranges for betas and debt premiums) account for a slightly smaller reduction.

A12.43 However, we may need to exercise caution in interpreting and allowing for these changes, particularly when we conclude on our estimates in mid 2011. For reasons explained below (in our discussion of BT's asset beta), it is possible that the removal from our asset beta evidence of some data relating to the credit crisis, will move our asset beta estimate towards the higher end of our range.

Key parameter values

A12.44 There are a number of parameters that we have to estimate in order to estimate an overall cost of capital for BT, some of which are more material than others. For example, the risk-free rate is the one parameter which affects both the cost of debt and the cost of equity, and therefore our estimation of it is a particularly important part of this process.

A12.45 The following sections of this annex will look at the parameters in turn, and set out the evidence that we rely on in reaching our preliminary view set out here.

The risk-free rate

What are we trying to estimate?

A12.46 The risk-free rate is perhaps the most important parameter when estimating the WACC, since it influences both the cost of equity and the cost of debt. It is also a very useful reference point to assess required rates of return against (as we do in paragraphs 12.159 – 12.165 below).

A12.47 We need to be mindful that this charge control is for a 3 year period, and therefore our rate needs to be relevant for that period, and in particular for the final year of the charge control, which is the year in which we estimate BT's costs.

A12.48 Our approach is to estimate a rate that is based on historic and current data, but which should be relevant for the period covered by the control.

What we have said previously

A12.49 In our last statement on BT's cost of capital in May 2009, we estimated the real risk-free rate to be 2.0%. This estimate was informed primarily by reference to the average yields on 5 year gilts in the years leading up to our decision.

A12.50 In our statement prior to that in 2005, we did not explicitly state what our real risk-free estimate was, but our nominal risk-free rate estimate of 4.6% and inflation assumption of 2.8% would have been consistent with a real risk-free rate of around 1.8%.

Recent movement in the risk-free rate

A12.51 The real risk-free rate (as measured by yields on UK 5 year gilts) has been falling since November 2008, when it peaked at over 4%. In the last year the real rate has been between 0.5% and -0.5%, although we do not believe this to be a sustainable long-term level, certainly not at the lower end of the range.

A12.52 Gilt yields appear to have fallen as a result of the UK government's programme of quantitative easing as well as from strong investor demand for UK government debt, which is seen as relatively low-risk compared to some other European countries' sovereign debt.

A12.53 The currently high levels of demand for UK gilts look unusual when viewed against long-term data, and we are cautious about attaching too much weight to current very low real rates.

A12.54 We note with interest that in its recent determination on Bristol Water[30], the CC used a real risk-free rate range of 1% – 2%, and chose a point estimate at the very top of the range, despite the very low rates observed in the market.

A12.55 We would also note that this decision was based on data up to and including July 2010. We have had the benefit of more recent data, during which time real risk-free rates have persisted at historically low levels.

A12.56 A proxy for the nominal risk-free rate is the yield to maturity on gilts, or government strips[31], while the real risk-free rate can be proxied by the yield on index-linked gilts of appropriate maturity. The difference between the two provides an estimate of forecast inflation.

A12.57 We can track nominal, real and implied forecast inflation rates over time, using Bank of England data on 5-year duration gilts, as shown below. In the past we have tended to rely purely on 5-year gilts, since these most closely matched the period of the charge controls we were reviewing. However, we note the recent "Notification by Water Services Regulation Authority of determination of determination of adjustment factors and standard infrastructure charges for Bristol Water plc" from the CC where it states that:

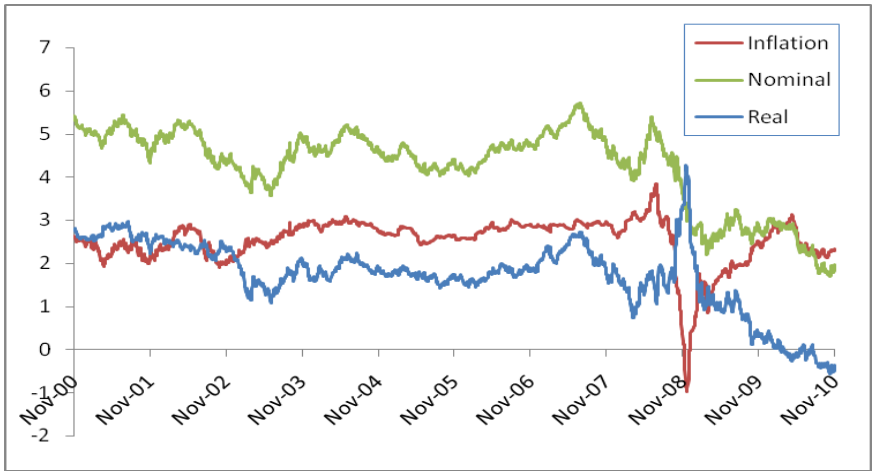
[30] http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_appendices.pdf
[31] STRIPS = Separate trading of registered interest and principal securities - fixed-income securities sold at a significant discount to face value which offer no interest payments because they mature at par.

> "In previous reports in the last ten years, the CC has paid less attention to longer-dated yields because of distortions and more attention to shorter-dated index-linked yields. At present, shorter-dated index-linked yields are affected by action by the authorities to address the credit crunch and recession and are less relevant to estimating the RFR[32]."

A12.58 While we continue to favour the use of 5 year gilt yields when estimating the risk-free rate, we have also considered 10 year gilt yields.

A12.59 From the Figure 12.5 we can see that the nominal and real yields have been falling consistently since the beginning of 2009, and are now at historically low levels.

Figure 12.5: 5 year gilt yields since 2000 - Nominal, Real & Inflation



Source: Bank of England

A12.60 The average real yield for 5-year zero coupon gilts has fallen over the last year. While we would generally tend to give more weight to more recent rates than averages over past years, we are mindful (as in past charge controls) that we do not wish to give too much weight to a rate based on a period of unusual market activity. Therefore we tend to give more weight to longer term averages than more recent rates.

A12.61 Given the likelihood of increasing yields in later years, we give more weight to the 1, 2, 3 and 5 year averages than recent very low rates. We note that the 5 year average for 5 year real gilts is 1.4%, and the 10 year average is 1.7%.

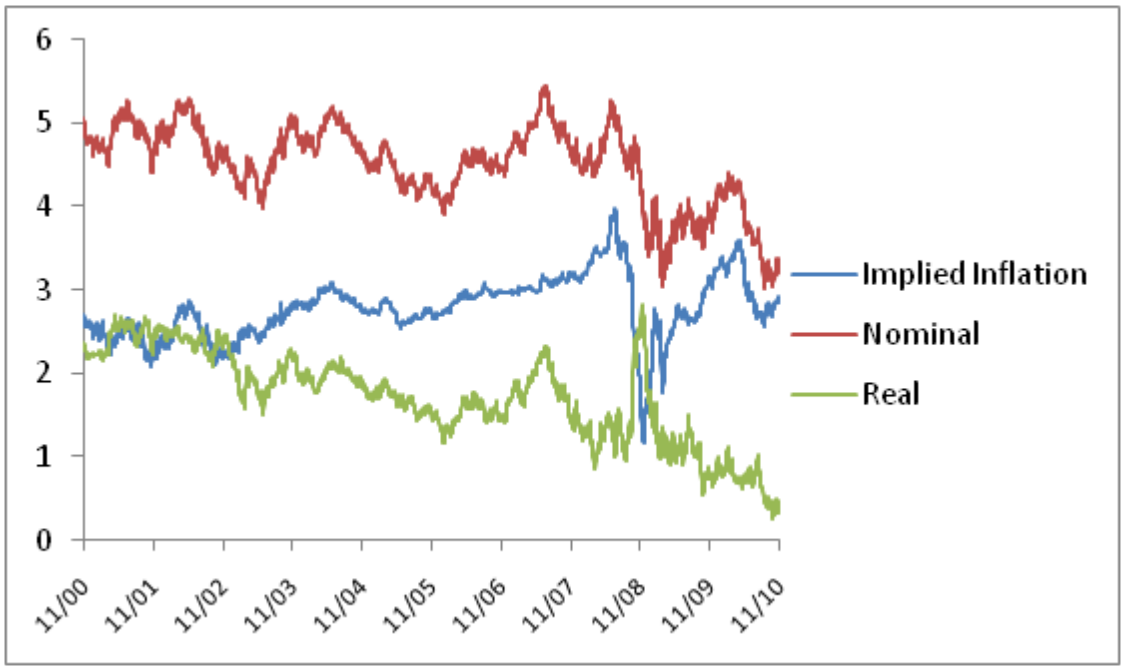
[32] See Page 17 of http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_appendices.pdf

Figure 12.6: Historic averages of Nominal, Real and Inflation 5 year rates (10 November 2010)

Averaging period	Nominal	Real	Implied Inflation
1 day	***2.0***	***-0.4***	***2.3***
1 month	***1.8***	***-0.5***	***2.3***
3 months	***2.0***	***-0.3***	***2.3***
6 months	***2.1***	***-0.2***	***2.3***
1 yr	***2.5***	***-0.1***	***2.5***
2 yrs	***2.6***	***0.6***	***2.0***
3 yrs	***3.3***	***1.0***	***2.3***
5 yrs	***3.9***	***1.4***	***2.5***
10 yrs	***4.3***	***1.7***	***2.5***

Source: Bank of England

Figure 12.7: 10 year gilt yields 2000 – 2010



Source: Bank of England

A12.62 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.

A12.63 The average yield on the 10 year government gilt over the last 5 years is also 1.4%, the same as that on the 5 year gilt (See Figure 12.8).

Table 12.8: 10 year gilt yield average rates (10 November 2010)

Averaging period	Nominal	Real	Implied Inflation
1 day	*3.4*	*0.5*	*2.9*
1 month	*3.2*	*0.4*	*2.8*
3 months	*3.3*	*0.6*	*2.8*
6 months	*3.4*	*0.6*	*2.8*
1 yr	*3.8*	*0.7*	*3.1*
2 yrs	*3.8*	*1.0*	*2.8*
3 yrs	*4.1*	*1.1*	*2.9*
5 yrs	*4.3*	*1.4*	*2.9*
10 yrs	*4.5*	*1.7*	*2.8*

Source: Bank of England

What has the CC said?

A12.64 As noted earlier, in its recent Bristol Water decision, the CC used a range of 1% - 2% for the risk-free rate, from which a point estimate of 2.0% can be inferred. This was based on evidence gathered up to and including July 2010.

A12.65 We view the CC's estimated risk-free rate as a useful reference point, but are also aware that we have at least 4 months more data at this stage, and will have close to a year's additional data by the time we reach a decision in this charge control.

Our estimate is 1.5%

A12.66 Taking into account the 5 year and 10 year gilt data, the CC's data, and considering that current yields look unsustainably low, we estimate the real risk-free rate for the purposes of this 3 year charge control to be 1.5%.

A12.67 This is a 0.5% reduction from our previous estimate in May 2009 of 2.0%, and will impact both the cost of equity and the cost of debt materially.

A12.68 We are obviously aware that an estimate of 1.5% is some way above current real risk-free rates, although we consider that this is reasonable for the following reasons:

- The CC's range of 1% - 2% in the Bristol Water appeal.
- The 5 year and 10 year average yields on 5 year gilts are around 1.5% (1.4% and 1.7% respectively).
- When estimating regulatory cost of capital rates, we are mindful of the potential negative effects of making sudden very large changes, which could create regulatory uncertainty. We are particularly mindful that current low rates reflect very specific conditions (including the Bank of England's Quantitative Easing programme) and take this into account when making estimates.

A12.69 Stakeholders will note that, in line with previous cost of capital consultations, we do not give a range for the risk-free rate, but instead choose a point estimate. However, this should not be taken to mean that our point estimate is a final number. We have a range on the overall WACC estimates of 1.5%, which allows for a

degree of movement in parameters such as this, where we have shown point estimates but where our final values may move.

A12.70 This is obviously a consultation, and we welcome stakeholders' responses on this estimate. We will make a final decision that takes into account respondents' views alongside all available evidence.

Implied forward rates

A12.71 It may also be instructive for us to look at forecasts of forward gilt yields. The implied real forward yield curve for UK gilts suggests a predicted yield of around 1% in 3 years time.

A12.72 Given that this rate is likely to be affected by the Bank of England's quantitative easing programme, we need to exercise caution when interpreting this data.

A12.73 However, given a 1% yield in 3 years time, our 1.5% estimate seems reasonable.

Inflation in our risk-free rate assumption

A12.74 We have in the past used a general long-term inflation assumption of 2.5%.

A12.75 For ease of comparison with other modelling assumptions, we use an assumption here that aligns with that long-term figure. We note that the most recent implied inflation on 5 year gilts is 2.3% (see Figure 12.5 above), although we also note that this figure is highly volatile. Therefore we regard this rate as a useful sense-check of our inflation assumption, but we would exercise caution about using such a volatile 'spot' reading as the basis for our decision.

A12.76 In addition, there are a great many inflation forecasts that we could use for the purposes of these charge controls. We believe that 2.5% is within that range of forecasts and is reasonable at this stage. Note that when we publish our final determinations on these BT charge controls, we will review this estimate in the light of the latest forecasts.

A12.77 When taken in conjunction with our real risk-free rate assumption of 1.5%, an inflation assumption of 2.5% implies a nominal risk-free rate estimate of 4.0%.

A12.78 Note also that, when incorporated into our pricing models, we will define the WACC such that it consistently reflects the inflation assumptions in these models, and the implied real WACC estimate.

Gearing

A12.79 Debt funding has a lower cost than equity, because debt-holders investment is less risky. In addition, debt funding is also more tax-efficient than equity funding. So a higher gearing tends to slightly lower the cost of capital. But companies need to balance debt and equity financing, since if the debt level is too high, the risk of default (insolvency) grows.

A12.80 Within the framework of the CAPM, gearing is the way we measure the level of debt funding. It is defined as a company's net debt divided by its enterprise value, where the enterprise value is the sum of the net debt and the market capitalisation.

A12.81 In the mechanics of the CAPM calculation, we use the gearing level, in conjunction with the observed equity beta, to determine a company's asset beta.

What we have done previously

A12.82 In the past our approach to gearing has been to assume an optimal level of gearing, which we took to be 35% for BT Group[33]. We re-levered the asset beta to this optimal gearing rate, and calculated what equity beta would be implied at 35% gearing.

A12.83 This approach was appropriate when BT's observed gearing was below the optimal gearing, and it was clear that the capital structure was not optimal for BT Group. However, an optimal gearing approach is less appropriate when observed gearing is above the optimal level.

We now propose to use actual gearing levels

A12.84 Since BT's gearing has been between 35% and 60% in the last 2 years, we are minded to base our calculations on actual gearing, which is a reasonable estimate of BT's desired level of gearing. We use a 50% gearing assumption, which broadly reflects the average gearing over the last few years.

A12.85 This makes our calculations simpler than in the past, and further ensures that our debt premium calculations are consistent with the level of gearing observed during the period in question. Note however that this does not have any material effect on the overall WACC, because the asset beta is estimated after taking account of gearing.

A12.86 We also considered how a gearing assumption of around 40% (i.e. the current level) would impact our estimates. However, this wouldn't change our WACC estimate due to the assumption of a constant asset beta, other than to the extent that there are tax benefits associated with higher gearing. We consider such tax benefits to be small.

Equity Risk Premium ("ERP")

Key parameter in CAPM

A12.87 The ERP is a key component of the estimate of a company's WACC.

A12.88 Under the 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.

A12.89 Academics and other users of the CAPM have conducted a large number of investigations into the value of the ERP, using quantitative techniques and surveys. These have produced a range of widely differing estimates, which means that we (and other economic regulators) have to choose a value from within the plausible range implied by these studies.

[33] An optimal gearing rate of 35% was used because the observed gearing during the period from 2001 – 2007 was in a broad range of around 30% - 40%.

A12.90 Our approach to estimating the ERP is as set out in our 2005 statement entitled "Ofcom's approach to risk in the assessment of the cost of capital[34]".

What we have said previously

A12.91 In May 2009 we estimated the ERP to be 5.0%, up from an estimate of 4.5% in 2005. Our estimate was informed in particular by the work of Professors Dimson, Marsh and Stuanton ("DMS")[35] from the London Business School, which tracks the average premium that investors have earned from equities (as opposed to bonds or gilts) over time.

A12.92 In addition, we believed that the volatility we observed in equity markets at the time suggested that investors required a higher level of return in exchange for holding risky equity assets, and an increase of 0.5% in our ERP estimate did not seem unreasonable in this context.

Recent data – extrapolating historical risk premia

A12.93 In the past, we have relied heavily on work carried out by DMS[36], which is regarded as being one of the most authoritative sources of historical estimates. DMS measure total returns over a relatively long period, include a large sample of countries and make adjustments for survivorship bias. We continue to believe this is a robust source of data.

A12.94 DMS have suggested an arithmetic mean premium[37] for the world index of around 4.5 – 5.0%.[38] They state that "this is our best estimate of the equity risk premium for use in asset allocation, stock valuation, and corporate capital budgeting applications." In addition, for the UK, DMS's estimated premium of equities over bonds (as measured by the arithmetic mean in the period 1900 – 2009) is 5.2%[39].

Ex-ante estimation: academic/user surveys

A12.95 In the past we considered surveys of the ERP carried out amongst academics and users of the CAPM. The first consultation that we published in January 2005[40], in relation to BT's cost of capital, set out the range of views of academics as being from 3 to 7%, while the views of practitioners ranged from 2 to 4%.

A12.96 A study from 2008 by Pablo Fernandez[41] suggests that UK finance professors used ERP estimates with an arithmetic mean of 5.5%.

A12.97 As in the past, we afford this analysis relatively little weight since participant surveys do not provide the same quality of evidence as market-based measures.

[34] http://stakeholders.ofcom.org.uk/binaries/consultations/cost_capital2/statement/final.pdf
[35] Dimson, Marsh and Staunton, "Credit Suisse Global Investment Returns Sourcebook 2009", Credit Suisse Research Institute
[36] Dimson, Marsh and Staunton, "Credit Suisse Global Investment Returns Sourcebook 2010", Credit Suisse Research Institute
[37] These estimates are calculated using arithmetic means from historic data. Arithmetic means are our preferred measure of the historic premia, and we give more weight to arithmetic means than to geometric means from the same data.
[38] DMS 2010, p34.
[39] DMS 2010, p158
[40] http://www.ofcom.org.uk/consult/condocs/cost_capital/cost_capital.pdf
[41] Fernandez, Pablo:Market Risk Premium Used in 2008 by Professors: A Survey with 1,400 Answers(April 16, 2009). Available at SSRN: http://ssrn.com/abstract=1344209

Market commentary

A12.98 We are aware of evidence from some market commentators which suggests that, during periods when equity prices are depressed and average corporate gearing is higher than anticipated, the ERP may be increased, in large part due to the technical effects of leverage. However, to the extent that this is an effect driven by lower equity values we consider that this effect will no longer be relevant once gearing levels revert to longer term norms.

A12.99 This may happen through the recovery of equity prices, or corporate financial management.

A12.100 We need to ensure that we take this effect into account when we estimate asset betas, in order to be consistent between betas and ERP estimates.

Question 12.2: We welcome stakeholders' views on Ofcom's approach to ERP estimates.

Regulatory benchmarks

A12.101 Recent ERP estimates adopted by the UK's economic regulators and competition authorities are in a range of 5% - 5.5% (See Figure 12.9).

Figure 12.9: Regulatory benchmarks of ERP

Source/Year	ERP	Comment
Ofcom, 2009	5.0%	LLU Charge control in May 2009. Unchanged after subsequent review by the CC, determination dated August 2010.
CC, Bristol Water 2010	5.0%	CC determination, published September 2010, reversing Ofwat's determination of 5.4% in November 2009
CAA, NATS 2010	5.5%	May 2010 determination

A12.102 We consider the CC's determinations of 5% in the Bristol Water and LLU Appeal to be a relevant consideration in our determination of the ERP. Given how recent these determinations are, and also given the generic, market-wide nature of an ERP assumption, we view this as useful evidence.

A12.103 We would find it difficult to diverge from such a determination without compelling evidence to demonstrate that this value has changed. We are not aware of any such evidence.

Our objectives in determining the ERP

A12.104 While setting the ERP value too low could lead to discretionary investment by BT being discouraged, setting the value too high could lead to consumers paying prices that are too high (or BT investments that are not fully justified by demand), or lower levels of investment by BT's competitors.

Our point estimate for the ERP is 5%

A12.105 We have reviewed evidence from market commentators and the Bank of England, and believe that the prolonged downturn in equity markets and high levels of volatility suggest that the equity risk premium may have increased in recent years.

A12.106 We maintain our belief that the downside of setting an ERP too low is worse than the downside of setting the ERP too high. We therefore tend to favour setting the ERP towards the upper end of a 4.5% to 5% range.

A12.107 Specifically, our point estimate for the ERP is 5.0%.

Competition Commission ("CC") view on the market return and ERP

A12.108 In its most recent determination where it discusses cost of capital, Bristol Water[42], the CC discusses the market return (i.e. investors' expected return from holding equities, which is given by the ERP plus the risk-free rate) and the implied range for the ERP:

> "We therefore confirm, for our determination, our provisional findings of a range of 5 to 7 per cent for the market return, and implied range of 4 to 5 per cent for the ERP."

A12.109 The CC's point estimate of the risk-free rate is 2%, and combined with their ERP point estimate at the very top of the range of 4 – 5% they estimate a market return of 7%, again at the very top of their stated range.

A12.110 Our current point estimate of the risk-free rate is 1.5%, which, when combined with our estimate of 5% for the ERP, gives a current estimate of the market return of 6.5%.

BT Group Beta

What does the equity beta represent?

A12.111 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.

What we said previously

A12.112 We estimated the BT Group equity beta to be 0.9 in our 2009 Final Statement. This was based on a number of data points, with particular reference to the 2-year daily estimate of BT's beta measured against the FTSE Allshare index.

A12.113 Based on observed gearing of 38%, this equity beta equated to an asset beta of 0.61 for BT Group.

A12.114 Our approach in the past has been to look at both 1 year and 2 year equity betas, but to give greater weight to the 2 year data, and then by looking at the average gearing, to estimate the asset beta accordingly. We then used the estimated asset beta to determine an equity beta at our assumed level of optimal gearing of 35%.

[42] http://www.competition-commission.org.uk/rep_pub/reports/2010/fulltext/558_appendices.pdf

The recent evidence - why is 1 year data particularly relevant now?

A12.115 Our approach in this consultation is broadly the same as it has been in the past, although we are mindful of the fact that the 2 year data statistics include a period of the credit crisis during late 2008 and early 2009. When we publish our final statements on BT's charge controls, this data will no longer be in the 2 year dataset. To the extent that this unusually volatile data may have significantly influenced our analysis, we propose giving greater consideration to the 1 year data in this consultation, with an expectation that we will revert to a 2 year basis at the time of publication of our final decision.

A12.116 We observe that during the credit crisis, as market capitalisations of companies fell, gearing levels rose. This meant that estimated asset betas declined even though equity betas were stable. It may be that during the period of the crisis, the market premium was inflated – a similar level of market risk being spread across a smaller total value of equity. This may account for a materially increased ERP during a period of depressed equity prices.

A12.117 If this is the case, we need to be cautious about using an ERP assumption evidenced from data relating to "non-crisis" periods with betas derived from datasets which include such crisis periods (after equity prices had fallen).

A12.118 We need to use asset beta data which takes account of the crisis, and use a normal ERP assumption. At this stage we propose to rely on an ERP estimate that is not adjusted for such short-term crisis effects and to adopt a similarly defined beta (as explained above).

A12.119 Therefore when estimating the cost of capital, we propose to use the observed actual levels of gearing alongside the observed equity beta levels in order to derive an asset beta for BT Group. We then adjust this asset beta for estimating the Openreach and Rest of BT WACCs.

Question 12.3: We would welcome stakeholders' views on Ofcom's approach to BT's Beta calculation.

How has BT's Group beta moved since 2009?

A12.120 As in previous consultations, we have asked the Brattle Group ("Brattle") to prepare an updated report on the range of equity betas for BT Group[43].

A12.121 Brattle has concluded from its analysis of BT's equity and asset beta, as well as a range of comparator data, that a reasonable estimate of BT's asset beta, based on an equity beta calculated using 2 years worth of daily data, and a debt beta of 0.15, would be 0.47[44].

A12.122 We recognise that this represents a very significant reduction.

[43] See separate report entitled "Estimate of BT's Equity Beta October 2010" published along this consultation document.
[44] This is equivalent to an asset beta of 0.46 assuming a debt beta of 0.125, which is the assumption we adopt here.

A12.123 Brattle's analysis[45] estimates BT's 1 year and 2 year daily equity betas, as measured against the FTSE All-Share index (our preferred comparator index), to be 0.96 and 0.84 respectively.

A12.124 Brattle's analysis reflects the relative stability of BT's 2 year equity beta since the beginning of 2009. The equity beta has been at or around 0.9, despite BT's gearing level fluctuating during the period from around 60% to the current level of around 40%.

A12.125 We note that the 2 year estimation period includes a period during which there were some unusual price movements, characterised by very high volatility of prices during 2008 and the early part of 2009.

A12.126 Our BT charge control determinations will be published later in 2011. At that point, the relevant 2 year dataset would not include this period of the credit crisis, and should, in principle, give us a 'cleaner' estimate of the equity and asset beta for BT Group, consistent with a "post-crisis" ERP, as set out earlier.

A12.127 With this in mind, we show below what the data based on the last 18 months would suggest for BT Group beta estimates, as well as the 2 year and 1 year data. As with the Brattle report, the final date for the data was 27th October 2010.

Annex 12.10: Equity and asset betas for BT Group vs. FTSE All-share

Data period	2009 estimates	2 yrs to 27/10/10	18m to 27/10/10	1yr to 27/10/10
Equity beta	0.9	0.84	0.95	0.96
Average gearing	38%	53%	52%	50%
Asset beta[46]	0.61	0.46	0.52	0.54

Source: Bloomberg 18/11/10

A12.128 We note that the 18 month data gives an asset beta for BT Group of 0.52, which may be seen as illustrative rather than indicative. As we set out above, our intention is to give most weight to the 2 year data in our final statement in Spring/Summer 2011.

A12.129 In addition to the data above, we have updated our own asset beta data for BT as close as possible to the publication date. The figure below shows the movement in BT's asset betas, based on:

- 2 year equity betas alongside average gearing for the previous 2 years, and

[45] The Brattle report uses data up to and including 27th October 2010. When estimating cost of capital rates, we try to use the best, most up to date information possible. However, due to the lead times between receiving external reports such as this, and analysing and writing up our own position, the data can be a few months old by the time of publication. For this reason, we have supplemented Brattle's analysis with our own data taken from Bloomberg in mid-January 2011. This data can be seen in figure x below. This does not mean that we can dismiss the Brattle report, as it contains important analysis, particularly in relation to utility comparators.

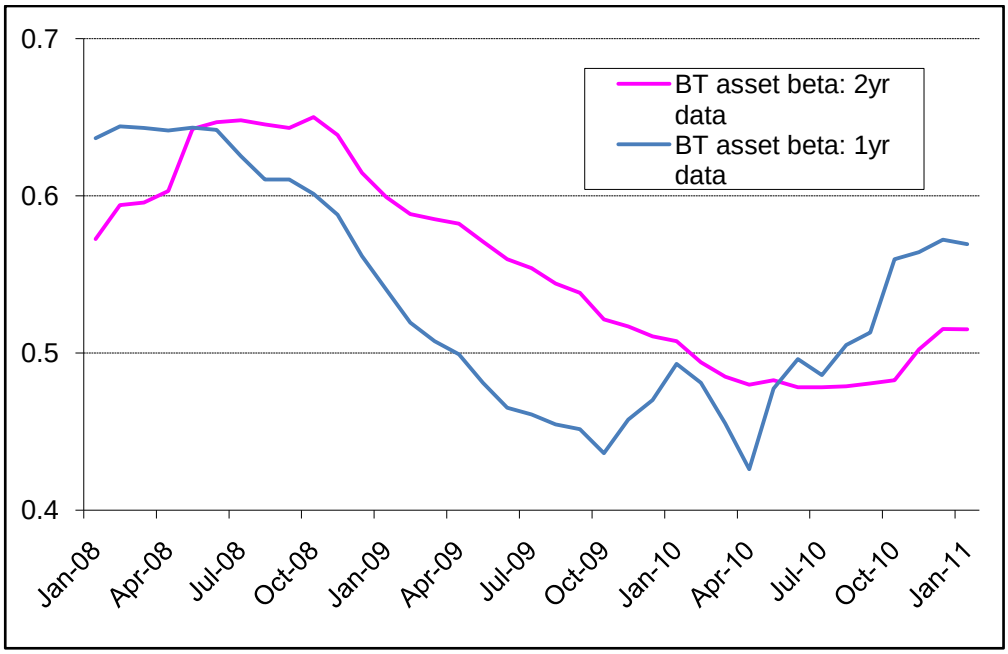
[46] Assuming a debt beta range of 0.1 – 0.15 (or 0.125 mid-point), compared to our estimated debt premium of 0.15 in May 2009. This is above the CC's estimated debt beta for Bristol Water of 0.10, but we consider that it is consistent with our estimated debt premium of 2% - 2.5% (compared to the 1.9% that the CC implied for Bristol Water). Note that a 0.025 change to our debt beta assumption has a negligible impact on our overall cost of capital estimates.

- 1 year equity betas alongside average gearing for the previous year.

A12.130 The figure below is based on equity betas calculated using daily data, average gearing calculated using daily market capitalisation data[47], and net debt data shown on Bloomberg. The net debt figures may be slightly different to the net debt reported by BT, although the differences are likely to be relatively minor and are unlikely to materially impact our asset beta calculations.

A12.131 We welcome stakeholders' views on whether it is most appropriate to use reported net debt or Bloomberg's adjusted net debt. When estimating BT's gearing, some investors are likely to use BT's reported net debt while others may use the Bloomberg adjusted figure, and therefore it is not obvious that either figure is unequivocally 'correct'.

Figure 12.11: 1 yr and 2 yr asset betas for BT Group, January 2008 - 2011



Source: Bloomberg, Ofcom

A12.132 As at the 11th January 2011, the 2yr asset beta for BT Group was 0.53, while the 1 yr asset beta was 0.58. When considered alongside the Brattle evidence from 27 October 2010 (as set out in Annex 12.10), we propose a range for the BT Group asset beta of 0.45 – 0.60[48].

A12.133 When combined with our earlier ERP estimate of 5%, we consider this provides a reasonable assessment of the overall risk premium.

[47] However, stakeholders should note that the datapoints are month-end figures, and therefore do not tie in exactly with the figure above. For example, the 2 year asset beta for BT Group as at 27th October 2010 was 0.46, while at the 31st October, the datapoint on the chart, it was 0.48.

[48] Given the current upward trend of BT's asset beta, which is a function of the general market recovery, BT's debt reduction plans, and a stable or rising equity beta, the likelihood seems to be that when we finalise our estimates later in 2011, the 2 yr asset beta will be towards the upper end of this range. But we cannot predict what will happen in the financial markets in the next few months.

Is it appropriate to reflect project-specific variations in risk in our financial analysis?

A12.134 As we set out in the 2005 Final Statement, it is sometimes appropriate to view some large companies such as BT as being a group that consists of a number of firms, or projects, each with its own unique risk profile, that operate together under common ownership.

A12.135 Since the conclusion of Ofcom's Strategic Review of Telecommunications in 2005, the creation of Openreach has given greater clarity over the access services part of BT Group's business.

What does BT's Group beta imply for the estimate of Openreach's beta?

A12.136 In our 2009 Final Statement, we estimated an appropriate notional equity beta for Openreach which was 0.1 lower than BT Group's. While we recognise that the process of disaggregation of equity betas is not an exact science, we remain of the view that Openreach's beta is below that of the BT Group[49].

A12.137 In order to inform our decision over how much lower we might expect Openreach's equity beta to be than that of BT Group, we asked Brattle to prepare a comparative analysis of network utilities and their equity betas alongside their analysis of BT's equity beta.

A12.138 As we have stated in previous consultations, we consider Openreach to have many characteristics of a network utility, and therefore to carry less specific risk than the rest of BT Group. Brattle's analysis suggests that comparable UK network utilities would have asset betas in a range of 0.3 – 0.4 (assuming a debt beta of 0.15).

Our asset beta ranges in this consultation

A12.139 As we stated above, we estimate a range for the BT Group asset beta of 0.45 – 0.60.

A12.140 We believe that a reasonable estimate of Openreach's asset beta, taking into account that of BT Group and of the comparable UK network utilities, would be 0.05 lower than for BT Group, so that at the bottom end of the range (i.e. 0.40) our estimate is at the very top of the utility asset beta range.

A12.141 We assume an asset beta range for Openreach of 0.4 - 0.55, still above the top end of the network utility range of asset betas, and consistent with our belief that Openreach is more risky than a pure network utility. This asset beta range translates to an equity beta range (assuming 50% gearing) for Openreach of 0.68 – 0.98.

A12.142 Our asset beta range for the Rest of BT is 0.50 – 0.65, with an equity beta range of 0.88 – 1.18.

What has the CC said about our BT and Openreach beta estimates?

A12.143 The estimate of the beta for Openreach was one of the issues considered in the recent appeal of our 2009 LLU determination. During that appeal, both BT and the

[49] See 2005 Final Statement sections 6 and 7 for a full explanation of the magnitude of our reduction in BT Group's equity beta for BT's access services division (i.e. Openreach).

appellant (Carphone Warehouse) accepted that the systematic risk of Openreach lay somewhere between that of BT Group and a conventional regulated utility.

A12.144 The CC accepted that there was a degree of regulatory judgement involved in estimating the equity beta for an unlisted division of a listed company, but that our approach was reasonable[50].

Debt premium

Introduction

A12.145 In estimating BT's cost of debt we require two inputs.

- The risk-free rate; and
- BT's debt premium.

A12.146 We set out above our views on the risk-free rate.

What we said previously

A12.147 When we last estimated BT's cost of capital in 2009, it was a time of great volatility and uncertainty in credit markets, and this uncertainty was reflected in elevated corporate bond yields. As a result we estimated BT's debt premium to be materially higher than in previous charge controls, at 3%.

The recent evidence suggests a lower estimate

A12.148 Since 2009 credit markets have normalised and BT's debt now offers debt investors yields of 2% - 2.5% above benchmark gilt levels. We believe this is a reasonable medium-term assumption for BT, which has a credit rating of BBB- with S&P.

A12.149 The figure below shows the yield available on BT's 2016 sterling-denominated bond, over and above benchmark gilt yields. During the past 12 months the spread has been broadly between 2% and 2.5%, with a brief dip below 2% during January 2010, and a brief peak above 2.5% in June 2010.

Figure 12.12: BT 2016 debt spread over gilt rates

Source: Bloomberg

A12.150 We propose a debt premium of 2% - 2.5%, which would be consistent with our average gearing level assumption of 50% set out above.

[50] See para 2.363 of http://www.catribunal.org.uk/files/1.1111_Carphone_Warehouse_CC_Determination_310810.pdf.

Overall cost of debt

A12.151 A real risk-free rate estimate of 1.5%, and a debt premium of 2% - 2.5%, combine to give a range for BT Group's real pre-tax cost of debt of 3.5% - 4%, or in nominal terms 6% - 6.5%. This compares with an observed yield on BT's 2016 bond of 4% - 6% during the last year (see Figure 12.13).

A12.152 So we may be affording BT a slightly higher cost of debt than that which is currently observed in the market, but our expectation of a degree of mean reversion in the gilt market suggests that a range of 6% - 6.5% is not unreasonable.

Figure 12.13: Yield on BT 2016 Bond

Source: Bloomberg

A12.153 We are also mindful of Note 32 from BT's 2010 Annual Report, which states that:

> "During 2010, debt amounting to £1bn matured consisting of £0.7bn of commercial paper and £0.3bn of long-term debt. This was offset by new issuance of a €600m bond at 6.125% repayable in 2014 which was swapped into £520m at a fixed semi-annual rate of 6.8%.[51]"

A12.154 This €600m commercial paper was issued during June 2009, when the yields on BT's debt were a good deal higher than today, and we are comfortable that a range of 6% - 6.5% is not unreasonable.

Corporate tax rate

A12.155 In the Budget of June 2010, the UK government announced its intention to reduce the corporate tax rate from the current 28%, down to 24% by 2014/15.

A12.156 This represents a real saving for businesses that pay tax, and will reduce the cost of capital accordingly.

A12.157 In the case of our current round of BT charge controls, where those controls incorporate a 3 year glidepath to a cost-oriented price, we need to incorporate the tax rate in year 3 of the charge control, which in this case is 2013/14. The tax rate in this year, according to the 2010 Budget, will be 25%.

[51] See page 140, http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/BTGroupAnnualReportSmart2010.pdf

Ofcom's Pensions Review

A12.158 We have recently concluded a consultation in regard to how we treat BT's pension costs in charge controls. This included an analysis of whether the regulatory cost of capital should be adjusted to take account of BT's large defined benefit (DB) pension scheme.

A12.159 The pension guidelines developed as part of the Pensions Review state that cost of capital of BT Group (or Openreach and the Rest of BT) should not be adjusted to reflect the existence of a DB scheme.[52]

BT Group WACC – premium over real risk-free rates is stable

A12.160 As we set out above, our approach to estimating the cost of capital has been to consider observations of market rates, while being mindful of mean reversion in certain parameters. But we consider that we also have a duty to sense-check the overall estimates that this approach leads us to, particularly when considering how our estimates have moved over time, and whether any movements in the overall estimates look reasonable.

A12.161 We believe that a useful basis for comparison over time is a consideration of the implied "WACC premium" in our various determinations over recent years. This WACC premium shows what additional rate of return our regulatory cost of capital affords BT over and above a risk-free rate.

A12.162 We estimate the premium by comparing our post-tax real WACC estimate with the real risk-free rate at the time. The spot real yield on 5 year gilts is a reasonable estimate of the rate at which investors will provide funds on a risk-free basis.

2005 – Premium of ~3.5%

A12.163 In our 2005 charge control, we estimated a post-tax real WACC for BT Group of just under 5%, compared to a real risk-free rate of around 1.5%. Therefore the premium we afforded above the spot risk-free rate was around 3.5% in 2005.

2009 – Premium of ~4%

A12.164 The spot real risk-free rate at the time of our decision in 2009 was around 1%. Therefore the premium implied in our WACC estimate, against the prevailing gilt spot rate at this time was just over 4% (i.e. 5.1% - 1%).

2010/11 – Premium of 4.4%

A12.165 UK 5 year real gilts currently yield around -0.2%, so the premium that our latest BT Group post-tax real WACC estimate (of 4.0%) implies is around 4.4%, slightly above those afforded in 2005 and 2009.

A12.166 In the context of the credit crisis in 2008/9, during which time many investors lost money and may subsequently have reduced their risk appetite, a higher premium in recent years than in 2005 does not appear unreasonable.

[52] This statement was published on 15th January 2011 http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/statement/statement.pdf.

Cost of Capital Calculations

A12.167 Figures 12.14 and 12.15 sets out our cost of capital estimates respectively for BT Openreach and the Rest of BT based on the estimates outlined in the sections above.

Figure 12.14: Pre-tax nominal WACC for Openreach

WACC Component	May 09	Jan 11
Real risk-free rate	2%	1.5%
Nominal risk-free rate	4.5%	4%
Equity Risk Premium	5%	5%
Equity Beta	0.76	0.68 – 0.98
Asset beta	0.55	0.4 – 0.55
Cost of equity (post tax)	8.3%	7.4% - 8.9%
Debt premium	3%	2% – 2.5%
Corporate tax rate	28%	25%
Cost of debt (post tax)	5.4%	4.5% - 4.9%
Gearing	35%	50%
WACC (post tax)	7.3%	6.0% - 6.9%
WACC (pre-tax nominal)	10.1%	8.0% - 9.2%
Extended range for pre-tax nominal WACC		7.9% - 9.4%

Figure 12.15: Pre-tax nominal WACC for rest of BT

WACC Component	May 09	Jan 11
Real risk-free rate	2%	1.5%
Nominal risk-free rate	4.5%	4%
Equity Risk Premium	5%	5%
Equity Beta	0.96	0.88 - 1.18
Asset beta	0.68	0.5 – 0.65
Cost of equity (post tax)	9.3%	8.4% - 9.9%
Debt premium	3	2% - 2.5%
Corporate tax rate	28%	25%
Cost of debt (post tax)	5.4%	4.5% - 4.9%
Gearing	35%	50%
WACC (post tax)	7.9%	6.5% - 7.4%
WACC (pre-tax)	11.0%	8.6% - 9.9%
Extended range for pre-tax nominal WACC		8.5% - 10.0%

Annex 13

Legal instruments

PART I – PROPOSED SETTING OF, AND MODIFICATION TO, SMP CONDITIONS

NOTIFICATION UNDER SECTIONS 48(2) AND 86 OF THE COMMUNICATIONS ACT 2003
Proposals for the setting of and modification of SMP services conditions to be imposed on BT as a result of the market power determination made by OFCOM in its Review of the wholesale local access market - Statement on market definition, market power and remedies as published on 7 October 2010

Background
1. On 7 October 2010, OFCOM published a document entitled 'Review of the wholesale local access market - Statement on market definition, market power and remedies' (the "**WLA Statement**")[53].

2. At Annex 2 to the WLA Statement, OFCOM published a notification identifying, in accordance with section 79 of the Act, the services market of wholesale local access services within the United Kingdom, but not including the Hull Area, in which OFCOM determined that, for the purposes of making a market power determination under the Act, BT has significant market power (the "**2010 Notification**").

3. As a result of that market power determination, in accordance with section 48(1) of the Act, OFCOM set on BT pursuant to section 45 of the Act the SMP services conditions set out in Schedule 1 to the 2010 Notification, including Condition FAA4 which imposes obligations on BT with regard to cost based charges and Condition FAA9 which imposes a requirement on BT to provide a Local Loop Unbundling service.

4. Although the WLA Statement which accompanied the 2010 Notification concluded that in principle a charge control on the local loop unbundling service is necessary, it deferred consideration of the specifics of that charge control, including the relevant costs, method and design as to how that charge control should be applied, to a separate consultation.

5. This Notification relates to the proposed setting of SMP condition FAA4(A) and the modification of SMP condition FAA4 under the market definitions and market analysis as set out in the WLA Statement and the 2010 Notification in order to address the identified risk of BT having the ability and the incentive to price excessively.

Proposals in this Notification

Proposals to set SMP service conditions

6. OFCOM hereby, in accordance with section 48(2) of the Act, proposes, in relation to the services market identified in paragraph 8(a) of the 2010 Notification, to set SMP Condition FAA4(A) to apply to BT as set out in **Schedule 1** to this Notification.

53
http://stakeholders.OFCOM.org.uk/binaries/consultations/wla/statement/WLA_statement.pdf

7. The proposed SMP Condition shall have effect from [•][54].

8. OFCOM is proposing, in accordance with section 86(1)(a) of the Act, to set that SMP Condition FAA4(A) by reference to the market power determination made in relation to the services market identified in paragraph 9(a) of the 2010 Notification.

9. The effect of, and OFCOM's reasons for making, these proposals are contained in Section 4 and 9 of the document accompanying this Notification.

Proposals to modify SMP service conditions

10. OFCOM is also proposing in accordance with section 86(4) of the Act to make a minor modification to SMP Condition FAA4 to ensure that it cross references to the proposed new SMP condition FAA4(A) imposing a charge control (see paragraph 8 above). Accordingly, in paragraph FAA4.1 of SMP condition FAA4 as set in Schedule 1 to the 2010 Notification, for the reference to SMP condition FA3(A), there shall be substituted the reference to SMP condition FAA4(A), and SMP condition FAA4 shall be read accordingly.

11. The proposed modification to this SMP Condition shall have effect from [•][55].

OFCOM's duties and legal tests

12. OFCOM considers that the proposed setting of SMP Condition FAA4(A), and the proposed modification to Condition FAA4, referred to above comply with the requirements of sections 45 to 47, 87 and 88 of the Act as appropriate and relevant to them.

13. In making the proposals 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 in section 4, of the Act.

Making representations

14. Representations may be made to OFCOM about the proposals set out in this Notification and the accompanying explanatory document by no later than 9 June 2011.

15. Copies of this Notification and the accompanying document have been sent to the Secretary of State in accordance with section 50(1)(a) of the Act, as well as the European Commission and to the regulatory authorities of every other member State in accordance with section 50(3) of the Act.

Interpretation

16. Except for references made to the identified services market in this Notification as set out in the 2010 Notification and except as otherwise defined in paragraph 17 of this Notification, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

17. In this Notification—

(a) "**2010 Notification**" has the meaning given to it in paragraph 2 above;

(b) "**Act**" means the Communications Act 2003 (c. 21);

[54] The date which is 28 days from the date of Notification under section 48(1) of the Act.
[55] The date which is 28 days from the date of Notification under section 48(1) of the Act.

(c) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(d) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

(e) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11);

(f) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978 (c.30); and

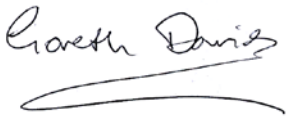
(g) "**WLA Statement**" has the meaning given to it in paragraph 1 above.

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.



Gareth Davies

Competition Policy Director

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

31 March 2011

Schedule 1
[DRAFT] Setting of SMP services condition FAA4(A) as a result of the market power determination made by Ofcom in a statement entitled Review of the wholesale local access market - Statement on market definition, market power and remedies as published on 7 October 2010 in which it was determined that BT has significant market power

1. The following new SMP Condition FAA4(A) shall be set by inserting it after Condition FAA4 in Part 2 of Schedule 1 to the 2010 Notification—

Condition FAA4(A) – Charge control

FAA4(A).1 Without prejudice to the generality of Condition FAA4, and subject to paragraphs FAA4(A).3 and FAA4(A).6, the Dominant Provider shall take all reasonable steps to secure that, at the end of each Relevant Year, the Percentage Change (determinate in accordance with paragraphs FAA4(A).4 and FAA4(A).5, as applicable) in:

(a) the aggregate of charges for SMPF Ancillary Services;

(b) the aggregate of charges for MPF Ancillary Services;

(c) the aggregate of charges for Co-Mingling Services;

(d) the charge for MPF Transfer, except for the First Relevant Year in relation to which the charge ceiling specified in paragraph FAA4(A).2(c) applies;

(e) the charge for MPF New Provide, except for the First Relevant Year in relation to which the charge ceiling specified in paragraph FAA4(A).2(d) applies;

(f) the charge for SMPF Connection, except for the First Relevant Year in relation to which the charge ceiling specified in paragraph FAA4(A).2(e) applies;

(g) the charge for MPF Rental, except for the First Relevant Year in relation to which the charge ceiling specified in paragraph FAA4(A).2(a) applies;

(h) the charge for SMPF Rental, except for the First Relevant Year in relation to which the charge ceiling specified in paragraph FAA4(A).2(b) applies,

in each of the eight categories of products and/or services specified in paragraphs FAA4(A).1(a) to (h) above is not more than the Controlling Percentage (as determined in accordance with paragraph FAA4(A).8).

FAA4(A).2 The Dominant Provider shall not charge more than:

(a) for MPF Rental, the amount of £[•] in the First Relevant Year;

(b) for SMPF Rental, the amount of £[•] in the First Relevant Year;

(c) for MPF Transfer, the amount of £[•] in the First Relevant Year;

(d) for MPF New Provide, the amount of £[•] in the First Relevant Year;

(e) for SMPF Connection, the amount of £[•] in the First Relevant Year;

(f) for MPF Cease, the amount of £0.00 in each of the First Relevant Year, the Second Relevant Year and the Third Relevant Year;

(g) for SMPF Cease, the amount of £0.00 in each of the First Relevant Year, the Second Relevant Year and the Third Relevant Year.

FAA4(A).3 For the purpose of complying with paragraph FAA4(A).1 (and except in relation to the charges specified in FAA4(A).2(a) to (e) for the First Relevant Year), 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 of those Charge Changes been made:

(a) for the First Relevant Year, on [•[56]] 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 during the Relevant Year, the following formula is satisfied:

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

where:

RC is the revenue change associated with the single Charge Change made in the Relevant Year, calculated by 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 FAA4(A).1, calculated by the Percentage Change required in the Relevant Year to achieve compliance with paragraph FAA4(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 [•] = 0 to 31 March = [•], divided by [•];

(b) for the Second 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 = 365, divided by 366;

(c) for 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.

FAA4(A).4 The Percentage Change for the purposes of each of the categories of products and/or services (each of which is known as a 'basket') specified in paragraphs FAA4(A).1(a), FAA4(A).1(b) and FAA4(A).1(c) respectively shall be calculated for the purposes of complying with paragraph FAA4(A).1 by employing the following formula:

[56] The date of coming into effect of the condition.

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

where:

C_t is the Percentage Change in the aggregate of charges for the products and/or services in the basket at a particular time *t* during the Relevant Year;
n is the number of products and/or services in the basket;

R_i is the sum of the revenue accrued during the Prior Financial Year in respect of the specific product and/or service *i* and the revenue accrued during the Prior Financial Year in respect of equivalent products and/or services provided by the Dominant Provider to itself, calculated to exclude any discounts offered by the Dominant Provider;

$p_{0,i}$ is (i) for the First Relevant Year, the charge specified in the Annex to this Condition in respect of the corresponding specific product and/or service *i*; and (ii) for the Second Relevant Year and the Third Relevant Year, the published charge made by the Dominant Provider for the specific product and/or service *i* at the beginning of 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 product and/or service *i* at time *t* during the Relevant Year excluding any discounts offered by the Dominant Provider.

For the avoidance of doubt, for the purpose of calculating the Percentage Change for the basket specified in paragraph FAA4(A).1(c), the revenues accrued for Co-Mingling Services shall be taken to include all revenue accrued from selling Co-Mingling Services and/or other services irrespective of their use.

FAA4(A).5 The Percentage Change for the purposes of each of the categories of products and/or services specified (each of which is referred to in this paragraph as a "single charge category") in paragraphs FAA4(A).1(d), FAA4(A).1(e), FAA4(A).1(f), FAA4(A).1(g) and FAA4(A).1(h) respectively shall be calculated for the purposes of complying with paragraph FAA4(A).1 by employing the following formula:

$$C_t = \frac{(p_t - p_0)}{p_0}$$

where:

C_t is the Percentage Change in charges for the specific product and/or service in the single charge category in question at a particular time *t* during the Relevant Year;

p_0 is (i) for the First Relevant Year, the charge specified in paragraph FAA4(A).2 in respect of the single charge category in question; and (ii) for the Second Relevant Year and the Third Relevant Year, the published charge made by the Dominant Provider for the specific product and/or service in the single charge category in question at the beginning of the Relevant Year excluding any discounts offered by the Dominant Provider; and

p_t is the published charge made by the Dominant Provider for the specific product and/or service in the single charge category in question at the time *t* during the Relevant Year excluding any discounts offered by the Dominant Provider.

FAA4(A).6 In the case of each of the categories of products and/or services (each of which is known as a 'basket') specified in paragraphs FAA4(A).1(a), FAA4(A).1(b) and FAA4(A).1(c) respectively, the Dominant Provider shall also and, in any event, take all reasonable steps to secure that, at the end of each Relevant Year, the Percentage Change in discrete charges for each and every product and/or service falling within the basket in question is:

(a) no more than the Controlling Percentage increased by [•] percentage points; and

(b) no less than the Controlling Percentage reduced by [•] percentage points;

where, for the purposes of (a) and (b) above, Controlling Percentage is the Controlling Percentage (as determined in accordance with paragraph FAA4(A).8) for the basket within which the product and/or service falls to which the discrete charges relate. For the purpose of this paragraph FAA4(A).6, the Percentage Change shall be calculated by employing the formula set out in paragraph FAA4(A).5 and its references to a single charge category shall be treated as references to charges for the specific product and/or service falling with the basket in question.

FAA4(A).7 For the purpose of complying with paragraph FAA4(A).6, the Dominant Provider shall take all reasonable steps to secure that the revenue it accrues as a result of all relevant individual charge changes during any Relevant Year shall be no more than that which it would have accrued had all of those changes been made:

(a) for the First Relevant Year, on [•[57]] 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 change in charges during the Relevant Year, the following formula is satisfied:

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

where:

RC is the revenue change associated with the single charge change made in the Relevant Year, calculated by 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 FAA4(A).1, calculated by the Percentage Change required in the Relevant Year to achieve compliance with paragraph FAA4(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 [•] = 0 to 31 March = [•], divided by [•];

[57] The date of coming into effect of the condition.

(b) for the Second 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 = 365, divided by 366;

(c) for 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.

FAA4(A).8 Subject to paragraphs FAA4(A).9 and FAA4(A).10, the Controlling Percentage in relation to any Relevant Year means:

(a) for the category of products and/or services specified in paragraph FAA4(A).1(a),
i. for the First Relevant Year, [•] percentage points,
ii. for the Second Relevant Year, RPI decreased by [•] percentage points, and
iii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(b) for the category of products and/or services specified in paragraph FAA4(A).1(b),
i. for the First Relevant Year, [•] percentage points,
ii. for the Second Relevant Year, RPI decreased by [•] percentage points, and
iii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(c) for the category of products and/or services specified in paragraph FAA4(A).1(c),
i. for the First Relevant Year, [•] percentage points,
ii. for the Second Relevant Year, RPI decreased by [•] percentage points, and
iii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(d) for the category of products and/or services specified in paragraph FAA4(A).1(d),
i. for the Second Relevant Year, RPI decreased by [•] percentage points, and
ii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(e) for the category of products and/or services specified in paragraph FAA4(A).1(e),
i. for the Second Relevant Year, RPI decreased by [•] percentage points, and
ii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(f) for the category of products and/or services specified in paragraph FAA4(A).1(f),
i. for the Second Relevant Year, RPI decreased by [•] percentage points, and
ii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(g) for the category of products and/or services specified in paragraph FAA4(A).1(g),
i. for the Second Relevant Year, RPI decreased by [•] percentage points, and
ii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(h) for the category of products and/or services specified in paragraph FAA4(A).1(h),
i. for the Second Relevant Year, RPI decreased by [•] percentage points, and
ii. for the Third Relevant Year, RPI decreased by [•] percentage points;

For the avoidance of doubt, the MPF Transfer, MPF New Provide, MPF Rental, SMPF Connection, and SMPF Rental charges are constrained by FAA4(A).2 in the First Relevant Year.

FAA4(A).9 Where the Percentage Change in either of the First Relevant Year or the Second Relevant Year is less than the Controlling Percentage (the "Excess"), then for the purposes of each of the categories of products and/or services specified in paragraphs FAA4(A).1(a), FAA4(A).1(b), FAA4(A).1(c), FAA4(A).1(d), FAA4(A).1(e), FAA4(A).1(f), FAA4(A).1(g) and FAA4(A).1(h) respectively the Controlling Percentage for the following Relevant Year shall

be determined in accordance with paragraph FAA4(A).8, but increased by the absolute value of the Excess.

FAA4(A).10 Where the Percentage Change in either of the First Relevant Year or the Second Relevant Year is more than the Controlling Percentage (the "Deficiency"), then for the purposes of each of the categories of products and/or services specified in paragraphs FAA4(A).1(a), FAA4(A).1(b), FAA4(A).1(c), FAA4(A).1(d), FAA4(A).1(e), FAA4(A).1(f), FAA4(A).1(g) and FAA4(A).1(h) respectively the Controlling Percentage for the following Relevant Year shall be determined in accordance with paragraph FAA4(A).8, but decreased by the absolute value of the Deficiency.

FAA4(A).11 The Dominant Provider shall ensure that during each Relevant Year:

(a) the charge made by it for MPF Special Fault Investigation (SFI) is the same as the charge made by it for SMPF Special Fault Investigation (SFI);

(b) the charge made by it for MPF Special Fault Investigation 2 (SFI2) - Base module is the same as the charge made by it for SMPF Special Fault Investigation 2 (SFI2) - Base module;

(c) the charge made by it for MPF Special Fault Investigation 2 (SFI2) - Network module is the same as the charge made by it for SMPF Special Fault Investigation 2 (SFI2) - Network module;

(d) the charge made by it for MPF Special Fault Investigation 2 (SFI2) - Frame module is the same as the charge made by it for SMPF Special Fault Investigation 2 (SFI2) - Frame module;

(e) the charge made by it for MPF Special Fault Investigation 2 (SFI2) - Internal Wiring module is the same as the charge made by it for SMPF Special Fault Investigation 2 (SFI2) - Internal Wiring module;

(f) the charge made by it for MPF Special Fault Investigation 2 (SFI2) - Internal equip module is the same as the charge made by it for SMPF Special Fault Investigation 2 (SFI2) - Internal equip module;

(g) the charge made by it for MPF Special Fault Investigation 2 (SFI2) - Coop module is the same as the charge made by it for SMPF Special Fault Investigation 2 (SFI2) - Coop module; and

(h) the charge made by it for MPF Special Fault Investigation 2 (SFI2) - Frame direct module is the same as the charge made by it for SMPF Special Fault Investigation 2 (SFI2) - Frame direct module.

For the avoidance of doubt, nothing in this paragraph FAA4(A).11 shall prevent the Dominant Provide from increasing and/or decreasing the charges made for each of the services at paragraphs FAA4(A).11 (a) to (h) above provided the requirements set out in this paragraph FAA4(A).11 are observed.

FAA4(A).12 The Dominant Provider shall ensure that during each Relevant Year:

(a) the charge made by it for MPF Service Maintenance Level 3 is the same as the charge made by it for WLR Service Maintenance Level 3; and

(b) the charge made by it for MPF Service Maintenance Level 4 is the same as the charge made by it for WLR Service Maintenance Level 4.

(c) the charge made by it for SMPF Service Maintenance Level 3 is the same as the charge made by it for WLR Service Maintenance Level 3; and

(d) the charge made by it for SMPF Service Maintenance Level 4 is the same as the charge made by it for WLR Service Maintenance Level 4.

For the avoidance of doubt, nothing in this paragraph FAA4(A).12 shall prevent the Dominant Provide from increasing and/or decreasing the charges made for each of the services at paragraphs FAA4(A).12 (a) to (d) above provided the requirements set out in this paragraph FAA4(A).12 are observed.

FAA4(A).13 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 FAA4(A).1 to FAA4(A).12 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 FAA4(A).13, 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 that existing Charge Controlled Service.

FAA4(A).14 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 by performing the calculation of the Percentage Change. The data shall include:

(a) pursuant to Condition FAA4(A).4 and FAA4(A).5, as applicable, the calculated Percentage Change relating to each category of products and services listed in conditions FAA4(A).1 (a) through to (h);

(b) pursuant to Condition FAA4(A).3, calculation of the revenue accrued as a result of all relevant 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 C_t pursuant to Condition FAA4(A).4, for the category of products and services specified in paragraph FAA4(A).1(d), FAA4(A).1(e), FAA4(A).1(f), FAA4(A).1(g) and FAA4(A).1(h);

(d) all relevant data the Dominant Provider used in the calculation the percentage change C_t pursuant to Conditions FAA4(A).5, for the category of products and services specified in paragraph FAA4(A).1(a), FAA4(A).1(b) and FAA4(A).1(c);

(e) all relevant data the Dominant Provider used in the calculation of the revenue change and target revenue change pursuant to Condition FAA4(A).3;

(f) all relevant revenues accrued during the Prior Financial Year in respect of the specific product or service;

(h) published charges made by the Dominant Provider at time *t* during the Relevant Year excluding any discounts offered by the Dominant Provider;

(i) the relevant published charge at the start of the Relevant Year; and

(j) other data necessary for monitoring compliance with the charge control.

FAA4(A).15 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 Charge Controlled Services 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.

FAA4(A).16 Paragraphs FAA4(A).1 to FAA4(A).15 shall not apply to such extent as OFCOM may direct.

FAA4(A).17 The Dominant Provider shall comply with any direction OFCOM may make from time to time under this Condition.

FAA4(A).18 In this Condition:

(a) "**Charge**" means for the purposes of paragraph FAA4(A).11, 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 products and/or services listed in paragraphs FAA4(A).1(a) to FAA4(A).1(h);

(c) "**Charge Controlled Service**" means a service or basket of services listed in FAA4(A).1(a) to FAA4(A).1(h);

(d) "**Co-Mingling Services**" means all of the products and/or services listed from time to time for the purpose of Part 3 of the Annex to this Condition;

(e) "**Controlling Percentage**" is to be determined in accordance with paragraph FAA4(A).8;

(f) "**Dominant Provider**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(g) "**MPF Ancillary Services**" means all of the products and/or services listed from time to time for the purpose of Part 2 of the Annex to this Condition;

(h) "**MPF Cease**" shall be construed as having the same meaning as 'MPF Cease charge' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(i) "**MPF New Provide**" shall be construed as having the same meaning as 'MPF Connection charge – New Provide – Standard' has as provided by the Dominant Provider on its website for definitions and explanations of its products;

(k) "**MPF Rental**" shall be construed as the annual rental of access to Metallic Path Facilities;

(l) "**MPF Service Maintenance Level 3**" shall be construed as having the same meaning as 'Service Maintenance Level 3 (Annual Rental)' in respect of the feature 'LLU MPF', as provided by the Dominant Provider on its website for definitions and explanations of its products;

(m) "**MPF Service Maintenance Level 4**" shall be construed as having the same meaning as 'Service Maintenance Level 4 (Annual Rental)' in respect of the feature 'LLU MPF', as provided by the Dominant Provider on its website for definitions and explanations of its products;

(n) "**MPF Special Fault Investigation (SFI)**" shall be construed as having the same meaning as 'MPF Special Fault Investigation (SFI)' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(o) "**MPF Special Fault Investigation 2 (SFI2) - Base module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Base module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(p) "**MPF Special Fault Investigation 2 (SFI2) - Coop module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Coop module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(q) "**MPF Special Fault Investigation 2 (SFI2) - Frame direct module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Frame direct module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(r) "**MPF Special Fault Investigation 2 (SFI2) - Frame module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Frame module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(s) "**MPF Special Fault Investigation 2 (SFI2) - Internal equip module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Internal equip module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(t) "**MPF Special Fault Investigation 2 (SFI2) - Internal Wiring module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Internal Wiring module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(u) "**MPF Special Fault Investigation 2 (SFI2) - Network module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Network module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(v) "**MPF Transfer**" shall be construed as having the same meaning as 'MPF Connection charge – Singleton migrations (Transfer from WLR/SMPF or Change of CP migrations)' has as provided by the Dominant Provider on its website for definitions and explanations of its products;

(x) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002;

(y) "**Percentage Change**" has the meaning given to it in paragraph FAA4(A).4 and FAA4(A).5, as applicable;

(z) "**Prior Financial Year**" means the period of 12 months ending on 31 March immediately preceding the Relevant Year;

(y) "**Relevant Year**" means each of the following three periods:

(1) the period beginning on [•] 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**");

(3) the period beginning on 1 April 2013 and ending on 31 March 2014 (the "**Third Relevant Year**");

(z) "**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 for National Statistics at the time of publication of this Notification) from time to time in respect of all items;

(aa) "**RPI**" means the amount of the change in the Retail Prices Index in the period of twelve months ending on 31st October immediately before the beginning of a Relevant Year, expressed as a percentage (rounded to two decimal places) of that Retail Prices Index as at the beginning of that first mentioned period;

(bb) "**SMPF Ancillary Services**" means all of the products and/or services listed from time to time for the purpose of Part 1 of the Annex to this Condition;

(cc) "**SMPF Cease**" shall be construed as having the same meaning as 'SMPF Cease charge' has as provided by the Dominant Provider on its website for definitions and explanations of its products;

(dd) "**SMPF Connection**" shall be construed as having the same meaning as 'SMPF Connection charge, Basic Provide on existing narrowband, Simultaneous Provide of SMPF with narrowband, Singleton Migration (Transfer or change of CP migrations) from Narrowband, MPF, SMPF and ISDN/ Highway', as provided by the Dominant Provider on its website for definitions and explanations of its products;

(ee) "**SMPF Rental**" shall be construed as rental of access to the non-voice band frequency of Metallic Path Facilities; and

(ff) "**SMPF Service Maintenance Level 3**" shall be construed as having the same meaning as 'Service Maintenance Level 3 (Annual Rental)' in respect of the feature 'LLU Shared MPF', as provided by the Dominant Provider on its website for definitions and explanations of its products;

(gg) "**SMPF Service Maintenance Level 4**" shall be construed as having the same meaning as 'Service Maintenance Level 4 (Annual Rental)' in respect of the feature

'LLU Shared MPF', as provided by the Dominant Provider on its website for definitions and explanations of its products;

(hh) "**SMPF Special Fault Investigation (SFI)**" shall be construed as having the same meaning as 'SMPF Special Fault Investigation (SFI)' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(ii) "**SMPF Special Fault Investigation 2 (SFI2) - Base module**" shall be construed as having the same meaning as 'SMPF Special Fault Investigation 2 (SFI2) - Base module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(jj) "**SMPF Special Fault Investigation 2 (SFI2) - Coop module**" shall be construed as having the same meaning as 'SMPF Special Fault Investigation 2 (SFI2) - Coop module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(kk) "**SMPF Special Fault Investigation 2 (SFI2) - Frame direct module**" shall be construed as having the same meaning as 'SMPF Special Fault Investigation 2 (SFI2) - Frame direct module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(ll) "**SMPF Special Fault Investigation 2 (SFI2) - Frame module**" shall be construed as having the same meaning as 'SMPF Special Fault Investigation 2 (SFI2) - Frame module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(mm) "**SMPF Special Fault Investigation 2 (SFI2) - Internal equip module**" shall be construed as having the same meaning as 'SMPF Special Fault Investigation 2 (SFI2) - Internal equip module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(nn) "**SMPF Special Fault Investigation 2 (SFI2) - Internal Wiring module**" shall be construed as having the same meaning as 'SMPF Special Fault Investigation 2 (SFI2) - Internal Wiring module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(oo) "**SMPF Special Fault Investigation 2 (SFI2) - Network module**" shall be construed as having the same meaning as 'MPF Special Fault Investigation 2 (SFI2) - Internal equip module' as provided by the Dominant Provider on its website for definitions and explanations of its products;

(pp) "**SMPF Transfer**" shall be construed as having the same meaning as 'SMPF Connection charge – Basic Provide on existing narrowband, Simultaneous Provide of SMPF with narrowband, Singleton Migration (Transfer or change of CP migrations) from Narrowband, MPF, SMPF and ISDN/ Highway' has as provided by the Dominant Provider on its website for definitions and explanations of its products;

(qq) "**WLR Service Maintenance Level 3**" shall be construed as having the same meaning as 'Service Maintenance Level 3 (Annual Rental)' in respect of the feature 'WLR – Wholesale Premium - per line', as provided by the Dominant Provider on its website for definitions and explanations of its products; and

(rr) "**WLR Service Maintenance Level 4**" shall be construed as having the same meaning as 'Service Maintenance Level 3 (Annual Rental)' in respect of the feature

‘WLR – Wholesale Premium - per line’, as provided by the Dominant Provider on its website for definitions and explanations of its products.

Annex to Condition FAA4(A)

Products and/or services subject to charge control pursuant to paragraphs FAA4(A).1(a), FAA4(A).1(b), FAA4(A).1(c) and FAA4(A).1(d)

Part 1

Meaning of SMPF Ancillary Services

For the purposes of Condition FAA4(A), the expression **"SMPF Ancillary Services"** shall be construed as including only the following fourteen products and/or services, subject to such changes as OFCOM may direct from time to time following any proposal by the Dominant Provider to introduce a new product and/or service or to substitute one or more of these fourteen products and/or services for another (in which case this list shall be construed accordingly):

	Item	Initial charge
1	SMPF Bulk Migrations Normal – Delivered during a 24 hour period	£33.14
2	SMPF Tie Pair Modification (3 working day lead time Re-termination)	£47.53
3	SMPF Tie Pair Modification (Multiple Re-termination)	£35.88
4	SMPF MDF Remove Jumper Order Singleton Charge	£28.79
5	SMPF MDF Remove Jumper Order Bulk Charge	£24.88
6	SMPF Order rejected at initial validation	£1.20
7	SMPF Order rejected at detailed evaluation	£13.05
8	SMPF Order returned for amendment	£13.05
9	Cancellation of SMPF orders for Provide, Simultaneous provide, Migration, Modification or Amend	£11.74
10	Amend orders. Allowable change to SMPF Order	£14.35
11	SMPF standard line test (RWT)	£4.43
12	Network RWT	£81.60
13	SMPF Flexi Cease Fault Investigation Charges	£71.81
14	SMPF Expedite	£103.20

Except in so far as the context otherwise requires, the terms or descriptions of products and/or services used in this Part 1 shall be construed as having the same meaning as those provided by the Dominant Provider on its website for definitions and explanations of its products in addition to future product updates. These are currently found as follows:

- For SMPF product information, please refer to http://www.openreach.co.uk/orpg/home/products/llu/smpf/smpf.do
- For assurance information including care levels, please refer to the Service Products section of the Openreach website: http://www.openreach.co.uk/orpg/home/products/serviceproducts/service_products.do

- For 21C related products, please refer to LLU secure portal, of the Openreach website for which CPs need to request access. This is done by choosing “LLU secure” from the Local Loop Unbundling menu available at: http://www.openreach.co.uk/orpg/home/products/llu/llu.do
- For information held in the price list, please refer to the “LLU Pricing” section of the price list available at: http://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do

Part 2

Meaning of MPF Ancillary Services

For the purposes of Condition FAA4(A), the expression **"MPF Ancillary Services"** shall be construed as including only the following fifteen products and/or services, subject to any such changes as OFCOM may direct from time to time following any proposal by the Dominant Provider to introduce a new product and/or service or to substitute one or more of these fifteen products and/or services for another (in which case this list shall be construed accordingly):

	Item	Initial charge
1	MPF Connection – Stopped Line Provide	£45.75
2	MPF Expedite	£158.40
3	MPF Same CP Mass Migration charge – Normal hours	£34.80
4	MPF Tie Pair Modification (3 working day lead time Re-termination)	£39.25
5	MPF Tie Pair Modification (Multiple Re-termination)	£34.80
6	MPF MDF Remove Jumper Order Singleton Charge	£28.79
7	MPF MDF Remove Jumper Order Bulk Charge	£10.80
8	MPF Order rejected at initial validation	£1.20
9	MPF Order rejected at detailed evaluation	£13.05
10	MPF Order returned for amendment	£13.05
11	Cancellation of MPF orders for Provide, Migration, Modification or Amend	£11.74
12	Amend orders. Allowable change to MPF Order	£14.35
13	MPF Standard line test	£4.43
14	Network RWT	£81.60
15	MPF Working Line Takeover (WLTO)	£45.75

Except in so far as the context otherwise requires, the terms or descriptions of products and/or services used in this Part 2 shall be construed as having the same meaning as those provided by the Dominant Provider on its website for definitions and explanations of its products in addition to future product updates. These are currently found as follows:

- For MPF product information, please refer to http://www.openreach.co.uk/orpg/home/products/llu/mpf/mpf.do
- For assurance information including care levels, please refer to the Service Products section of the Openreach website: http://www.openreach.co.uk/orpg/home/products/serviceproducts/service_products.do
- For 21C related products including Test Access Product, please refer to LLU secure portal, of the Openreach website for which CPs need to request access. This is done by choosing "LLU secure" from the Local Loop Unbundling menu available at: http://www.openreach.co.uk/orpg/home/products/llu/llu.do

- For information held in the price list, please refer to the “LLU Pricing” section of the price list available at: http://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do

Part 3

Meaning of Co-Mingling Services

For the purposes of Condition FAA4(A), the expression **"Co-Mingling Services"** shall be construed as including only the following ninety eight products and/or services, subject to any such changes as OFCOM may direct from time to time following any proposal by the Dominant Provider to introduce a new product and/or service or to substitute one or more of these ninety eight products and/or services for another (in which case this list shall be construed accordingly):

	Item	Current Charge
1	Internal Tie Cable (2) (Notes 9)	£421.20 connection
2	Internal Tie Cable (2) (Notes 9)	£15.60 pa rental
3	Internal Tie Cable (2) Jointing Fixed Charge per External Tie Cable	£153.60 fixed charge per cable
4	Handover Distribution Frame Extension to provide additional 1500 tie pair capacity for MCU1	£216.00
5	Additional Handover Distribution Frame to provide additional 4800 tie pair capacity for B-BUSS7	£1,629.60
6	Standalone Handover Distribution Frame (HDF) 9	£2,070.00
7	Standalone Handover Distribution Frame (HDF) 18	£2,168.40
8	MDF Licence Fee per Internal Tie Cable per annum	£26.40 pa per cable
9	20 CN Enhanced Specification LLU Internal Tie Cable (1) for Co-location and Co-mingling	£921.60 connection
10	20 CN Enhanced Specification LLU Internal Tie Cable (1) for Co-location and Co-mingling	£78.00 pa rental
11	21CN-32 pair standard Internal Tie Cable-HDF connected	£414.00 connection
12	21CN-32 pair standard Internal Tie Cable-HDF connected	£34.80 pa rental
13	21CN-64 pair standard Internal Tie Cable-HDF connected	£528.00 connection
14	21CN-64 pair standard Internal Tie Cable-HDF connected	£44.40 pa rental
15	21CN-32 pair standard Internal Tie Cable-Bare Ended Coil	£34.08 pa rental
16	21CN-64 pair standard Internal Tie Cable-Bare Ended Coil	£43.44 pa

		rental
17	21CN-100 pair standard Internal Tie Cable-Bare Ended Coil	£70.20 pa rental
18	21CN-32 pair enhanced Internal Tie Cable-HDF connected	£434.40 connection
19	21CN-32 pair enhanced Internal Tie Cable-HDF connected	£37.20 pa rental
20	21CN-64 pair enhanced Internal Tie Cable-HDF connected	£559.20 connection
21	21CN-64 pair enhanced Internal Tie Cable-HDF connected	£48.00 pa rental
22	21CN-100 pair enhanced Internal Tie Cable-HDF connected	£921.60 connection
23	21CN-100 pair enhanced Internal Tie Cable-HDF connected	£78.00 pa rental
24	21CN-32 pair enhanced Internal Tie Cable-Bare Ended Coil	£35.16 pa rental
25	21CN-64 pair enhanced Internal Tie Cable-Bare Ended Coil	£45.68 pa rental
26	21CN-100 pair enhanced Internal Tie Cable-Bare Ended Coil	£74.40 pa rental
27	LLU Internal Tie Cable Cease of 1-10 Cables	£723.60
28	LLU Internal Tie Cable Cease of 11-20 Cables	£814.80
29	LLU Internal Tie Cable Cease of 21-30 Cables	£906.00
30	LLU Internal Tie Cable Cease of 31-40 Cables	£994.80
31	LLU Internal Tie Cable Cease of 41-50 Cables	£1086.00
32	BT Provided External 100 Pair cable @ 100 metres - Rental per annum fixed charge per cable	£117.60 pa rental
33	BT Provided External 100 Pair cable @ 100 metres - Connection fixed charge per cable	£1498.80 connection
34	BT Provided External 100 Pair cable @ 100 metres - Rental per annum Per extra 100 pairs	£99.60 pa rental
35	BT Provided External 100 Pair cable @ 100 metres - Connection Per extra 100m	£234.00 connection
36	BT Provided External -500 Pair cable @ 100 metres - Rental per annum fixed charge per cable	£188.40 pa rental
37	BT Provided External -500 Pair cable @ 100 metres - Connection fixed charge per cable	£2451.60 connection
38	BT Provided External -500 Pair cable @ 100 metres - Rental per annum Per extra 100m	£147.60 pa rental

39	BT Provided External -500 Pair cable @ 100 metres - Connection Per extra 100m	£234.00 connection
40	BT Provided External 500 Pair cable @ 100 metres – Rental per annum Per extra 100 pairs	£99.60 pa rental
41	BT Provided External 500 Pair cable @ 100 metres – Connection fixed charge Per extra 100 pairs	£472.80
42	BT Provided External 100 Pair cable @ 100 metres - Rental per annum Per extra 100m	£79.20 pa rental
43	BT Provided External 100 Pair cable @ 100 metres - Connection Per extra 100 pairs	£472.80 connection
44	Operator provided External 100 Pair cable pull through @ 100 metres - Rental fixed per annum (fixed charge per cable)	£27.60 pa rental
45	Operator provided External 100 Pair cable pull through @ 100 metres - Connection (fixed charge per cable)	£1328.40 connection
46	Operator Provided External 500 Pair cable pull through @ 100 metres - Rental fixed per annum (fixed charge per cable)	£31.20 pa rental
47	Operator Provided External 500 Pair cable pull through @ 100 metres - Connection (fixed charge per cable)	£1888.80 connection
48	Operator provided External 100 Pair cable pull through @ 100 metres – rental fixed per annum Per extra 100 pairs	£14.40 pa rental
49	Operator provided External 100 Pair cable pull through @ 100 metres - Connection Per extra 100 pairs	£454.80 connection
50	Operator provided External 500 Pair cable pull through @ 100 metres – rental fixed per annum Per extra 100 pairs	£14.40 pa rental
51	Operator provided External 500 Pair cable pull through @ 100 metres – Connection Per extra 100 pairs	£454.80 connection
52	Hand-over Distribution Frame charge per 100 pair tie cable	£25.20
53	Distant location full survey	£972.00
54	Missed joint survey or testing appointment	£18.00
55	Co-location order rejection – no space available	£226.80
56	Co-location full survey	£5757.60
57	Site visit charge to be allocated to all orders not in conjunction with the installation of a base product.	£284.40
58	Co-Mingling order rejection – no space or insufficient space available	£464.40
59	Co-Mingling set up fee (per sq metre)	£256.80
60	Comingling Shared Point of Presence Administration Fee	£228.00
61	Ancillary Service Structure Fixed price to service 1-3 Rack Space Units	£4928.40
62	Ancillary Service Structure Fixed price to service 4-6 Rack Space Units	£6130.80

63	Ancillary Service Structure Fixed price to service 7-9 Rack Space Units	£7734.00
64	Ancillary Service Structure upgrade from 1-3 Rack Space Units to 4-6 Rack Space Units	£2650.80
65	Ancillary Service Structure downgrade from 4-6 Rack Space Units to 1-3 Rack Space Units	£856.80
66	Low Capacity Unit (LCU)	£3423.60
67	Medium Capacity Unit 1 (MCU with 1 customer rack space unit)	£3961.20
68	Medium Capacity Unit 2 (MCU with 2 customer rack space units)	£4204.80
69	B-BUSS3 (Broadband Britain Umbilical Services Structure with 3 customer rack space units)	£6530.40
70	B-BUSS7 (Broadband Britain Umbilical Services Structure with 7 customer rack space units)	£7731.60
71	AC Final Distribution Rental per 10kw increment per annum (Charges will appear in billed units of decawatts (100W)	£348.00 pa rental
72	Cooling per kw	£1545.60
73	Upgrade of existing MCU1 product to MCU2	£904.80
74	Upgrade of existing BBUSS3 Point Of Presence to BBUSS7 (power and space)	£1999.20
75	Upgrade of existing BBUSS 3 Point Of Presence to B-BUSS 7 (space only)	£1758.00
76	Downgrade of existing BBUSS 7 Point Of Presence to B-BUSS 3 (space only)	£650.40
77	MCU1 Max or MCU2 Max initial build	£4222.80
78	Upgrade of existing MCU1 / MCU2 to MCU1Max / MCU2Max	£2426.40
79	Out of Hours Connection Fee for upgrade of existing MCU1 / MCU2 to MCU1Max / MCU2Max	£932.40
80	Upgrade of existing MCU1 / MCU2 to MCU1MaxAux / MCU2MaxAux	£6195.60
81	Out of Hours Connection Fee for upgrade of existing MCU1 / MCU2 to MCU1MaxAux / MCU2MaxAux	£932.40
82	Basic Single Rack	£3049.20
83	Complete Single Rack	£4028.40
84	Security rental per sq. metre	£22.80
85	Service Charge per square metre per annum	£54.00
86	BT's Normal Working Hours, planned	£43.20 per hour (minimum £174.00)
87	BT's Normal Working Hours, unplanned	£64.80 per hour

		(minimum £260.40)
88	BASIS (BT Assisted Site Delivery Service) fixed charge	£346.80
89	Site Access	£328.80
90	Handover	£273.60
91	Security partitioning per site charge	£130.80
92	ESS Survey for capacity upgrade	£346.80 pa rental
93	ESS Rental of existing capacity per kW per annum (Note 2, charges will appear in billed units of decawatts (10W))	£162.00
94	Provision of sub meter	£822.00
95	APO Cancellation Charge	£301.20
96	Internal 100 pair Tie Cable - HDF connected (1) for Co-Location and Co-Mingling -Connection	£532.80
97	Internal 100 pair Tie Cable - HDF connected (1) for Co-Location and Co-Mingling -Rental	£21.60
98	Duct Charge - Hand-over Distribution Frame option per 100 pair Frame capacity	£115.20

Except in so far as the context otherwise requires, the terms or descriptions of products and/or services used in this Part 3 shall be construed as having the same meaning as those provided by the Dominant Provider on its website for definitions and explanations of its products in addition to future product updates. These are currently found as follows:

- For SMPF and MPF product information, please refer to http://www.openreach.co.uk/orpg/home/products/llu/llu.do
- For assurance information including care levels, please refer to the Service Products section of the Openreach website: http://www.openreach.co.uk/orpg/home/products/serviceproducts/service_products.do
- For 21C related products, please refer to LLU secure portal, of the Openreach website for which CPs need to request access. This is done by choosing “LLU secure” from the Local Loop Unbundling menu available at: http://www.openreach.co.uk/orpg/home/products/llu/llu.do
- For information held in the price list, please refer to the Plan and Build area within the “LLU Pricing” section of the price list available at: http://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do

PART II – PROPOSED DIRECTION REGARDING REMOVAL OF COST ORIENTATIONOBLIGATION FOR MPF RENTAL, MPF CEASE, SMPF CEASE AND ENHANCED SERVICE LEVEL CARE

NOTIFICATION UNDER SECTION 49 OF THE COMMUNICATIONS ACT 2003

Proposed Direction under section 49 of the Communications Act 2003 and SMP Condition FAA4.1 imposed on BT as a result of a market power determination made by OFCOM in its Review of the wholesale local access market - Statement on market definition, market power and remedies as published on 7 October 2010

Proposal in this Notification

1. OFCOM hereby makes, in accordance with section 49(4) of the Act, the following proposal for giving a direction in relation to the removal of MPF Rental, MPF Cease, SMPF Cease and Enhanced Service Level Care Services from cost orientation obligations applied to the wholesale local access services market.

2. The proposed direction removing MPF Rental, MPF Cease, SMPF Cease and Enhanced Service Level Care Services from cost orientation obligations imposed by SMP Condition FAA4.1 is set out in the Schedule to this Notification.

3. The effect of, and the reasons for, giving the proposed direction is set out in the accompanying document at Sections 4 and 9.

OFCOM's duties

4. In making the proposal set out in the Notification, OFCOM has considered and acted in accordance with its general duties in section 3 of the Act and the six Community requirements in section 4 of the Act.

Making representations

5. Representations may be made to OFCOM about the proposal set out in this Notification and the accompanying consultation document by no later than 9 June 2011.

6. In accordance with section 50 of the Act, copies of this Notification have been sent to the Secretary of State, the European Commission and to regulatory authorities of every other Member State.

Interpretation

7. Except for references made to the identified services markets in this Notification and subject to paragraph 8 below, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

8. In this Notification—

(a) "**Act**" means the Communications Act 2003 (c.21);

(b) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(c) "**Enhanced Service Level Care Services**" means maintenance which is part of the enhanced service provided by BT in consideration of the charge for a metallic path facility or a shared metallic path facility and includes a maintenance service level additional to Service Maintenance Level 2 (Annual Rental);

(d) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

(e) "**MPF Cease**" shall be construed as having the same meaning as 'MPF Cease charge' as provided by BT on its website for definitions and explanations of its products;

(f) "**MPF Rental**" shall be construed as the annual rental of access to Metallic Path Facilities;

(g) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11); and

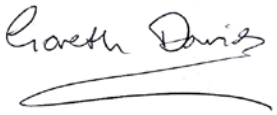
(h) "**Service Maintenance Level 2 (Annual Rental)**" shall be construed as having the same meaning as 'Service Maintenance Level 2 (Annual Rental)' has as provided by BT on its website for definitions and explanations of its products.

(i) "**SMPF Cease**" shall be construed as having the same meaning as 'SMPF Cease charge' has as provided by BT on its website for definitions and explanations of its products.

9. 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.

10. The Schedule to this Notification shall form part of this Notification.



Gareth Davies

Competition Policy Director

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

31 March 2011

SCHEDULE

[*Proposed*] Direction under section 49 of the Communications Act 2003 and SMP Condition FAA4.1 imposed on BT as a result of a market power determination made by OFCOM in Review of the wholesale local access market - Statement on market definition, market power and remedies as published on 7 October 2010, that BT has significant market power in the market for wholesale local access services in the United Kingdom excluding the Hull Area

Background

1. On 7 October 2010, OFCOM published its statement entitled "Review of the wholesale local access market - Statement on market definition, market power and remedies" (the "**WLA Statement**").

2. In the WLA Statement, OFCOM determined that BT held significant market power (SMP) in the market for wholesale local access in the United Kingdom but not including the Hull Area

3. As a result, OFCOM imposed a number of remedies on BT in order to address identified competition concerns. Those remedies included the SMP services condition FAA4 which applied to, among others, those markets set out at paragraph 2 above.

4. FAA4 imposes a cost orientation obligation upon BT, as follows:

> ***FAA4.1*** *Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition FAA1 and/or Conditions FAA9, FAA10 and FAA12 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.*

5. BT currently offers MPF Rental, MPF Cease, SMPF Cease and Enhanced Service Level Care Services within the market described at paragraph 2 above. The charge ceiling imposed in Condition FAA4(A) on MPF Rental is not based on a forward looking long-run incremental cost approach, allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed, and therefore is not consistent with SMP Condition FAA4.1. Further, the charge ceiling imposed in Condition FAA4(A) on MPF Cease and SMPF Cease is set below forward looking long-run incremental cost, and therefore is also not consistent with the SMP Condition FAA4(A).1. In addition, Ofcom considers that different pricing constraints apply to Enhanced Service Level Care Services. Therefore, OFCOM considers that we should not continue to apply the cost orientation obligations to these services.

6. OFCOM hereby, in accordance with section 49 of the Act, directs that SMP services Condition FAA4 shall not apply to MPF Rental, MPF Cease, SMPF Cease and Enhanced Service Level Care Services provided by BT in the market set out in paragraph 8(a) of the Notification to the WLA Statement, that is to say: wholesale local access services.

7. The effect of, and the reasons for making, this Direction are set out in the accompanying explanatory statement at section [•].

Effective date

8. This Direction shall take effect on the [•].

OFCOM's duties

9. In making this Direction, OFCOM has considered the test set out in section 49(2) of the Act and considers that it is:

a. objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;

b. not such as to discriminate unduly against particular persons or against a particular description of persons;

c. proportionate to what it is intended to achieve; and

d. in relation to what it is intended to achieve, transparent

10. OFCOM also considers that, in making this Direction, it has acted in accordance with its general duties in section 3 of the Act and the six Community requirements in section 4 of the Act.

11. As set out in Section [•] of the explanatory statement accompanying this Direction, Ofcom has considered every representation about the proposed Direction duly made to it and the Secretary of State has not notified Ofcom of any international obligation of the United Kingdom for this purpose.

Interpretation

12. Except for references made to the identified services market in this Notification and subject to paragraph 13 below, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

13. In this Notification—

(a) "**Act**" means the Communications Act 2003 (c.21);

(b) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(c) "**Enhanced Service Level Care Services**" means maintenance which is part of the enhanced service provided by BT in consideration of the charge for a metallic path facility or a shared metallic path facility and includes a maintenance service level additional to Service Maintenance Level 2 (Annual Rental);

(d) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

(e) "**MPF Cease**" shall be construed as having the same meaning as 'MPF Cease charge' as provided by BT on its website for definitions and explanations of its products;

(f) "**MPF Rental**" shall be construed as the annual rental of access to Metallic Path Facilities;

(g) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11);

(h) "**Service Maintenance Level 2 (Annual Rental)**" shall be construed as having the same meaning as 'Service Maintenance Level 2 (Annual Rental)' has as provided by BT on its website for definitions and explanations of its products.

(i) "**SMPF Cease**" shall be construed as having the same meaning as 'SMPF Cease charge' has as provided by the Dominant Provider on its website for definitions and explanations of its products.

(j) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978 (c.30); and

(k) "**WLA Statement**" has the meaning given to it in paragraph 1 of this Direction.

14. 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.

[SIGNATURE]

[TITLE]

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

[DATE]

PART III – PROPOSED CONSENT FOR PERIOD TO NOTIFY CHARGES (LLU) NOTIFICATION UNDER SECTIONS 49 OF THE COMMUNICATIONS ACT 2003

Proposal for giving a Consent under SMP condition FAA6.1 in Part 2 of Schedule 1 to the Notification at Annex 2 of the Statement entitled "Review of the wholesale local access market - Statement on market definition, market power and remedies" as published on 7 October 2010, which Condition was imposed on BT as a result of the market power determination made by OFCOM that BT has significant market power in the market for wholesale local access services within the United Kingdom but not including the Hull Area

Proposal in this Notification

1. OFCOM hereby makes, in accordance with section 49(4) of the Act, the proposal to give the Consent set out in the draft form in the Schedule to this Notification under SMP Condition FAA6.1 in Part 2 of Schedule 1 to the Notification at Annex 2 of the Statement entitled "Review of the wholesale local access market - Statement on market definition, market power and remedies" as published on 7 October 2010, upon the precondition set out in paragraph 2 being satisfied.

2. The precondition referred to in paragraph 1 above is that OFCOM decides to set (as proposed in Part I of Annex 12 to the accompanying consultation) the proposed new SMP Condition FAA4(A) entitled 'Charge control'.

3. The effect of, and the reasons for making, the proposed Consent are set out in Section 3 of the accompanying consultation document.

OFCOM's duties

4. In making the proposal set out in this Notification, OFCOM has considered and acted in accordance with its general duties in section 3 of the Act and the six Community requirements in section 4 of the Act.

Making representations

5. Representations may be made to OFCOM about this proposal set out in this Notification and the accompanying consultation document by no later than 9 June 2011.

6. In accordance with section 50 of the Act, copies of this Notification have been sent to the Secretary of State, the European Commission and to the regulatory authorities of every other Member State.

Interpretation

7. Except for references made to the identified services markets in this Notification and subject to paragraph 8 below, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

8. In this Notification—

(a) "**Act**" means the Communications Act 2003 (c.21);

(b) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(c) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

(e) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11);

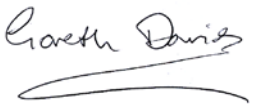
(f) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978 (c.30).

9. 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.

Gareth Davies



Competition Policy Director

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

31 March 2011

SCHEDULE

[Draft] Consent under section 49 of the Communications Act 2003 and SMP Services Condition FAA6.1 imposed on BT as a result of the market power determinations made by OFCOM that BT has significant market power in the market for wholesale local access services within the United Kingdom but not including the Hull Area

Background

1. On 7 October 2010, OFCOM published a document entitled 'Review of the wholesale local access market - Statement on market definition, market power and remedies' (the "2010 Notification").

2. At Annex 2 to the 2010 Notification, OFCOM published a notification identifying, in accordance with section 79 of the Act, the services market of wholesale local access services within the United Kingdom, but not including the Hull Area, in which OFCOM determined that, for the purposes of making a market power determination under the Act, BT has significant market power.

3. As a result of that market power determination, in accordance with section 48(1) of the Act, OFCOM set on BT pursuant to section 45 of the Act the SMP services conditions set out in Schedule 1 to the 2010 Notification, including Condition FAA6 which imposes obligations on BT with regard to prior notification of charges, terms and conditions before taking effect. In particular, paragraph FAA6.2 of that Condition provides:

> *"FAA6.2 Save where otherwise provided in Condition FAA6, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition FAA1 and/or Conditions FAA9 to FAA12 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an "Access Charge Change Notice") not less than 90 days before any such amendment comes into effect for existing Network Access, or not less than 28 days before any such charges, terms and conditions come into effect for new Network Access provided after the date that this Condition enters into force. This obligation for prior notification will not apply where the new or amended charges or terms and conditions are directed or determined by Ofcom or are required by a notification or enforcement notification issued by Ofcom under sections 94 or 95 of the Act."*

4. On [•], OFCOM published a Notification of a proposal to set a new SMP Condition FAA4(A) entitled 'Charge control'. In addition, OFCOM published a Notification of a proposal to give a Consent under section 49 of the Communications Act 2003 and SMP Services Condition FAA6.1 in relation to charges to which that proposed Condition relates (the "Consent Proposal").

5. In accordance with section 50 of the Act, a copy of the Consent Proposal was sent to the Secretary of State, the European Commission and the regulatory authorities of every of the Member State.

6. By virtue of section 49(9) of the Act, OFCOM may give effect to the Consent Proposal, with or without modification, only if—

> (a) it has considered every representation about the proposal that is made to OFCOM within the period specified in the notification; and
> (b) it has had regard to every international obligation of the United Kingdom (if any) which has been notified to OFCOM for this purpose by the Secretary of State.

7. For the reasons set out in Section [•] of the explanatory statement accompanying this Consent, in accordance with section 49(2) of the Act, OFCOM is satisfied that this Consent is—

(a) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;

(b) not such to discriminate unduly against particular persons or against a particular description of persons;

(c) proportionate to what it is intended to achieve; and

(d) in relation to what it is intended to achieve, transparent.

8. For the reasons set out in Section [•] of the explanatory statement accompanying this Consent, OFCOM has considered and acted in accordance with its general duties set out in section 3 of, and the six Community requirements set out in section 4, of the Act in giving this Consent.

9. OFCOM has considered every representation about the proposed Consent duly made to it and the Secretary of State has not notified OFCOM of any international obligation of the United Kingdom for this purpose.

Consent

10. OFCOM hereby, pursuant to section 49 of the Act and under Condition FAA6.1, gives consent to BT that the period of 90 days referred to in Condition FAA6.2 (which relates to amendments to the charges, terms and conditions for existing Network Access) is to be reduced to a period of 28 days for any amendments to charges made prior to 1 April 2012 for services subject to Condition FAA4(A) (and the Condition shall otherwise apply accordingly).

Interpretation

11. In this Consent—

(a) "**2010 notification**" has the meaning given to it in paragraph 1 of this Consent.

(b) "**Act**" means the Communications Act 2003 (c.21);

(b) "**BT**" and "**Dominant Provider**", respectively, means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(c) "**Consent Proposal**" has the meaning given to it in paragraph 7 above;

(d) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11); and

(e) "**SMP Condition FAA4(A)**" means SMP Condition FAA4(A) as set out in Schedule 1 to the Notification published by OFCOM on [•] at [•] to the explanatory statement accompanying this Consent.

12. Except insofar as the context otherwise requires, words or expressions in this Consent shall have the meaning assigned to them in paragraph 11 above and otherwise any word or expression shall have the same meaning as it has in the Act.

13. For the purpose of interpreting this Consent—

(a) headings and titles shall be disregarded; and

(b) the Interpretation Act 1978 (c. 30) shall apply as if this Consent were an Act of Parliament.

Effective date

14. This Consent shall take effect on [•].

[NAME]

[TITLE]

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

[DATE]

PART IV – PROPOSED SETTING OF, AND MODIFICATION TO, SMP CONDITIONS NOTIFICATION UNDER SECTION 48(2) AND 86 OF THE COMMUNICATIONS ACT 2003

Proposals for the setting of and modification of SMP services conditions to be imposed on BT as a result of the market power determination made by OFCOM in its "Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies" as published on 20 December 2010

Background

1. On 20 December 2010, OFCOM published a "Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies" (the "**WFAEL Statement**"[58]).

2. At Annex 1 to the WFAEL Statement, OFCOM published a notification identifying, in accordance with section 79 of the Act, the services market of wholesale analogue exchange line services within the United Kingdom, excluding the Hull Area, in which OFCOM determined that, for the purposes of making a market power determination under the Act, BT has significant market power (the "**2010 Notification**").

3. As a result of that market power determination, in accordance with section 48(1) of the Act, OFCOM set on BT pursuant to section 45 of the Act the SMP services conditions set out in Schedule 1 to the 2010 Notification, including Condition AAAA3 which imposes obligations on BT with regard to cost based charges and Condition AAAA10 which imposes a requirement on BT to provide a wholesale analogue WLR service.
4. Although the WFAEL Statement which accompanied the 2010 Notification concluded that in principle a charge control on the wholesale analogue WLR service is necessary, it deferred consideration of the specifics of that charge control, including the relevant costs, method and design as to how that charge control should be applied, to a separate consultation.

5. This Notification relates to the proposed setting of SMP condition AAAA4(WLR) and the modification of SMP conditions AAAA3, AAAA5, AAAA6(a) and AAAA10 under the market definitions and market analysis as set out in the WFAEL Statement and the 2010 Notification in order to address the identified risk of BT having the ability and the incentive to price excessively.

Proposals in this Notification

Proposals to set SMP service conditions

6. OFCOM hereby, in accordance with section 48(2) of the Act, proposes, in relation to the services market identified in paragraph 8(a) of the 2010 Notification, to set SMP Condition AAAA4(WLR), to apply to BT as set out in Schedule 1 to this Notification.
7. The proposed SMP Condition shall have effect from 28 days from the date of Notification under section 48(1) of the Act.

[58] http://stakeholders.OFCOM.org.uk/binaries/consultations/review-wholesale-fixed-exchange/statement/statement.pdf

8. OFCOM is proposing, in accordance with section 86(1)(a) of the Act, to set that SMP Condition AAAA4(WLR) by reference to the market power determination made in relation to the services market identified in paragraph 9(a) of the 2010 Notification.

9. The effect of, and OFCOM's reasons for making, these proposals are contained in Section 5 and 9 of the document accompanying this Notification.

Proposals to modify SMP service conditions

10. OFCOM is also proposing in accordance with section 86(4) of the Act to modify SMP Condition AAAA10, as set out in Schedule 2 to this Notification, to clarify that the requirement to provide a wholesale analogue WLR service includes providing such ancillary services as may be reasonably necessary for the use of that service.

11. OFCOM is also proposing in accordance with section 86(4) of the Act to modify SMP Conditions AAAA3, AAAA5 and AAAA6(a), as set out below, to ensure that they cross-reference to the proposed new SMP condition AAAA4(WLR) imposing a charge control (see paragraph 6 above). Accordingly:

(a) in paragraph AAAA3.2 as set out in Schedule 1 to the 2010 Notification, for the reference to Condition AAA4(WLR), there shall be substituted the reference to Condition AAAA4(WLR), and Condition AAAA3 shall be read accordingly; and

(b) in paragraphs AAAA5.2(q) and AAAA5.3 of SMP Condition AAAA5 as set out in Schedule 1 to the 2010 Notification, for the reference to Condition AAA4(WLR), there shall be substituted the reference to Condition AAAA4(WLR), and Condition AAAA5 shall be read accordingly; and

(c) in paragraphs AAAA6(a).3 and AAAA6(a).5 of SMP Condition AAAA6(a) as set out in Schedule 1 to the 2010 Notification, for the reference to Condition AAA4(WLR), there shall be substituted the reference to Condition AAAA4(WLR), and Condition AAAA6(a) shall be read accordingly.

12. The proposed modifications to SMP Conditions AAAA3, AAAA5, AAAA6(a) and AAAA10 shall have effect from 28 days from the date of Notification under section 48 (1) of the Act.

13. The effect of, and OFCOM's reasons for making, each of these proposals are contained in Section 5 and 9 of the document accompanying this Notification.

OFCOM's duties and legal tests

14. OFCOM considers that the proposed setting of SMP Condition AAAA4(WLR) and the proposed modifications to Conditions AAAA3, AAAA5, AAAA6(a) and AAAA10 referred to above comply with the requirements of sections 45 to 47, 87 and 88 of the Act as appropriate and relevant to them.

15. In making the proposals 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 in section 4, of the Act.

Making representations

16. Representations may be made to OFCOM about the proposals set out in this Notification and the accompanying explanatory document by no later than 9 June 2011.

17. Copies of this Notification and the accompanying document have been sent to the Secretary of State in accordance with section 50(1)(a) of the Act, as well as the European Commission and to the regulatory authorities of every other member State in accordance with section 50(3) of the Act.

Interpretation

18. Except for references made to the identified services market in this Notification as set out in the 2010 Notification and except as otherwise defined in paragraph 19 of this Notification, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

19. In this Notification—

(a) "**2010 Notification**" has the meaning given to it in paragraph 2 above;

(b) "**Act**" means the Communications Act 2003 (c.21);

(c) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(d) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc; and

(e) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11);

(f) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978 (c. 30); and

(f) "**WFAEL Statement**" has the meaning given to it in paragraph 1 above.

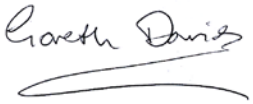
20. For the purpose of interpreting this Notification—

(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.

21. Schedules 1 and 2 to this Notification shall form part of this Notification.

Gareth Davies



Competition Policy Director

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

31 March 2011

Schedule 1

[DRAFT] Setting of SMP services condition AAAA4(WLR) as a result of the market power determination made by Ofcom in a statement entitled "Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies" as published on 20 December 2010 in which it was determined that BT has significant market power

1. The following new SMP Condition AAAA4(WLR) shall be set by inserting it after Condition AAAA3 in Part 2 of Schedule 1 to the 2010 Notification — **Condition AAAA4(WLR) - Charge control**

AAAA4(WLR).1 Without prejudice to the generality of Condition AAAA3, and subject to paragraph AAAA4(WLR).3, 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 paragraph AAAA4(WLR).4, as applicable) in:

(a) the charge for Analogue Core WLR rental, except for the First Relevant Year in relation to which the charge ceiling specified in paragraph AAAA4(WLR).2(a) applies;

(b) the charge for WLR Transfer except for the First Relevant Year in relation to which the charge ceiling specified in paragraph AAAA4(WLR).2(b) applies; and

(c) the charge for WLR New Connection except for the First Relevant Year in relation to which the charge ceiling specified in paragraph AAAA4(WLR).2(c) applies; in each of the three single charge categories of products and/or services specified in paragraphs AAAA4(WLR).1(a) to (c) above is not more than the Controlling Percentage (as determined in accordance with paragraph AAAA4(WLR).5).

AAAA4(WLR).2 The Dominant Provider shall not charge more than:

(a) for Analogue Core WLR rental, the amount of £[•] in the First Relevant Year;

(b) for WLR Transfer, the amount of £[•] in the First Relevant Year;

(c) for WLR New Connection, the amount of £[•] in the First Relevant Year.

AAAA4(WLR).3 For the purpose of complying with paragraph AAAA4(WLR).1, (and except in relation to the charges specified in AAAA4(WLR).2 for the First Relevant Year), 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 of those Charge Changes been made 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 during the Relevant Year, the following formula is satisfied:

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

where:

RC is the revenue change associated with the single Charge Change made in the Relevant Year, calculated by 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 AAAA4(WLR).1, calculated by the Percentage Change required in the Relevant Year to achieve compliance with paragraph AAAA4(WLR).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 Second 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 = 365, divided by 366;

(b) for 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.

AAAA4(WLR).4 The Percentage Change for the purposes of each of the products and/or services specified (each of which is referred to in this paragraph as a "single charge category") in paragraphs AAAA4(WLR).1(a), AAAA4(WLR).1(b) and AAAA4(WLR).1 (c) respectively shall be calculated for the purposes of complying with paragraph AAAA4(WLR).1 by employing the following formula:

$$C_t = \frac{(p_t - p_0)}{p_0}$$

where:

C_t is the Percentage Change in charges for the specific product and/or service in the single charge category in question at a particular time *t* during the Relevant Year;

p_0 is (i) for the First Relevant Year, the charge specified in paragraph AAAA4(WLR).2 in respect of the single charge category in question; and (ii) for the Second Relevant Year and the Third Relevant Year, the published charge made by the Dominant Provider for the specific product and/or service in the single charge category in question at the beginning of the Relevant Year excluding any discounts offered by the Dominant Provider; and

p_t is the published charge made by the Dominant Provider for the specific product and/or service in the single charge category in question at the time *t* during the Relevant Year excluding any discounts offered by the Dominant Provider.

AAAA4(WLR).5 Subject to paragraphs AAAA4(WLR).6 and AAAA4(WLR).7, the Controlling Percentage in relation to any Relevant Year means:

(a) for the category of products and/or services specified in paragraph AAAA4(WLR).1.(a),

i. for the Second Relevant Year, RPI decreased by [•] percentage points, and

ii. for the Third Relevant Year, RPI decreased by [•] percentage points;

(b) for the category of products and/or services specified in paragraph AAAA4(WLR).1.(b),

i. for the Second Relevant Year, RPI, and

ii. for the Third Relevant Year, RPI;

(c) for the category of products and/or services specified in paragraph AAAA4(WLR).1.(c),

i. for the Second Relevant Year, RPI decreased by [•] percentage points, and

ii. for the Third Relevant Year, RPI decreased by [•] percentage points.

For the avoidance of doubt, the charges for each of these products and/or services are constrained by AAAA4(WLR).2 in the First Relevant Year.

AAAA4(WLR).6 Where the Percentage Change in either of the First Relevant Year or the Second Relevant Year is less than the Controlling Percentage (the "Excess"), then for the purposes of each of the categories of products and/or services specified in paragraphs AAAA4(WLR).1(a), AAAA4(WLR).1(b) and AAAA4(WLR).1(c) respectively the Controlling Percentage for the following Relevant Year shall be determined in accordance with paragraph AAAA4(WLR).5, but increased by the absolute value of the Excess.

AAAA4(WLR).7 Where the Percentage Change in either of the First Relevant Year or the Second Relevant Year is more than the Controlling Percentage (the "Deficiency"), then for the purposes of each of the categories of products and/or services specified in paragraphs AAAA4(WLR).1(a), AAAA4(WLR).1(b) and AAAA4(WLR).1(c) respectively the Controlling Percentage for the following Relevant Year shall be determined in accordance with paragraph AAAA4(WLR).5, but decreased by the absolute value of the Deficiency.

AAAA4(WLR).8 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 AAAA4(WLR).1 to AAAA4(WLR).7 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 AAAA4(WLR).8, 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 that existing Charge Controlled Service.

AAAA4(WLR).9 The Dominant Provider shall record, maintain and supply to OFCOM in writing, no later than three months after the end of the Relevant Year, the data necessary for OFCOM to monitor compliance of the Dominant Provider with the price control by performing the calculation of the Percentage Change. The data shall include:

(a) pursuant to Condition AAAA4(WLR).4, the calculated Percentage Change relating to each category of products and services listed in paragraphs AAAA4(WLR).1 (a) through to (c);
(b) pursuant to Condition AAAA4(WLR).3, calculation of the revenue accrued as a result of all relevant individual charge changes during any Relevant Year compared to the target revenue change;

(d) all relevant data the Dominant Provider used in the calculation of the percentage change C_t pursuant to Conditions AAAA4(WLR).4 for the category of products and services specified in paragraphs AAAA4(WLR).1 (a) through to (c);

(e) all relevant data the Dominant Provider used in the calculation of the revenue change and target revenue change pursuant to Condition AAAA4(WLR).3;

(e) all relevant revenues accrued during the Prior Financial Year in respect of the specific product or service;

(f) published charges made by the Dominant Provider at time *t* during the Relevant Year excluding any discounts offered by the Dominant Provider;

(g) the relevant published charge at the start of the Relevant Year; and

(h) other data necessary for monitoring compliance with the charge control.

AAAA4(WLR).10 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 Charge Controlled Services 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.

AAAA4(WLR).11 Paragraphs AAAA4(WLR).1 to AAAA4(WLR).10 shall not apply to such extent as OFCOM may direct.

AAAA4(WLR).12 The Dominant Provider shall comply with any direction OFCOM may make from time to time under this Condition.

AAAA4(WLR).13 In this Condition:

(a) "**Analogue Core WLR Rental**" means, unless OFCOM directs otherwise from time to time for the purpose of the meaning of this expression, such services as the Dominant Provider is required to provide under SMP services condition AAAA10.1(a) and which on the date this Condition takes effect include:

i. the rental of an analogue exchange line for control and billing purposes;

ii. maintenance which is part of the service provided by the Dominant Provider in consideration of the charge for an Exchange Line and includes a

iii. maintenance service level with a fault repair time of no more than provided for Level 1 service care level for Basic lines, as defined in the Dominant Provider's standard terms and conditions; and

(iii) one main directory listing per telephone number, comprising of either:
(i) a residential style listing; or
(ii) a business style listing, where the Dominant Provider provides to the Third Party a WLR3 service, as defined in the Dominant Provider's standard terms and conditions;"

(b) "**Charge**" means for the purposes of paragraph AAAA4(WLR).8, the charge (being in all cases the amounts offered or charged by the Dominant Provider) to a communications provider for the Charge Controlled Service;

(c) "**Charge Change**" means a change to any of the charges for the provision of the products and/or services listed in AAAA4(WLR).1(a), AAAA4(WLR).1(b) and AAAA4(WLR).1(c);

(d) "**Charge Controlled Service**" means a product and/or service listed in AAAA4(WLR).1(a), AAAA4(WLR).1(b) and AAAA4(WLR).1(c);

(e) "**Controlling Percentage**" is to be determined in accordance with paragraph AAAA4(WLR).5;

(f) "**Dominant Provider**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(g) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11);

(h) "**Percentage Change**" has the meaning given to it in paragraph AAAA4(WLR).4;

(i) "**Prior Financial Year**" means the period of 12 months ending on 31 March immediately preceding the Relevant Year;

(j) "**Relevant Year**" means each of the following three periods:

(1) the period beginning on [•] 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**");

(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 for National Statistics at the time of publication of this Notification) from time to time in respect of all items;

(l) "**RPI**" means the amount of the change in the Retail Prices Index in the period of twelve months ending on 31 October immediately before the beginning of a

Relevant Year, expressed as a percentage (rounded to two decimal places) of that Retail Prices Index as at the beginning of that first mentioned period.

(m) "**WLR Transfer**" means a charge for the transfer of control of an analogue access line; and

(n) "**WLR New Connection**" means a charge for the connection of a new analogue line to a premises.

SCHEDULE 2

Modification to SMP service condition AAAA10.

SMP Condition AAAA10 shall be modified by

(a) removing the current paragraphs AAAA10.1 and AAAA10.2 of Condition AAAA10 in Part 2 of Schedule 1 to the Notification published at Annex 1 of the statement entitled "Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies" published on 20 December 2010 by OFCOM and inserting in their place the following new paragraphs AAAA10.1 and AAAA10.2:

> "**AAAA10.1** The Dominant Provider shall provide Wholesale Line Rental, which shall include, where also requested by a Third Party, such Ancillary Services as may be reasonably necessary for the use of Wholesale Line Rental, as soon as is reasonably practicable, or as directed by Ofcom, on reasonable terms to every Third Party who makes a reasonable request in relation to wholesale analogue exchange line services.
>
> **AAAA10.2** Unless Ofcom directs otherwise from time to time, the Dominant Provider shall ensure that charges of providing WLR services in paragraph AAAA10.1, including for the avoidance of doubt such Ancillary Services as may be reasonably necessary for the use of Wholesale Line Rental, are based on the forward looking long-run incremental cost, except where the Dominant Provider and Third Party have agreed another basis for the charges."

(b) inserting the following new paragraph AAAAA10.6 in Condition AAAA10 after the current paragraph AAAA10.5:—

> "**AAAA10.6** In this Condition:
>
> "**Ancillary Services**" mean an Associated Facility or services associated with an Electronic Communications Network and/or an Electronic Communications Service which enable and/or support the provision of services via that Network and/or Service or have the potential to do so."

PART V – PROPOSED DIRECTION REGARDING REMOVAL OF COST ORIENTATION OBLIGATION FOR ANALOGUE CORE WLR RENTAL AND WLR TRANSFER NOTIFICATION UNDER SECTION 49 OF THE COMMUNICATIONS ACT 2003

Proposed Direction under section 49 of the Communications Act 2003 and SMP Conditions AAAA3.1 and AAAA10.2 imposed on BT as a result of a market power determination made by OFCOM in its "Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies" as published on 20 December 2010

Proposal in this Notification

1. OFCOM hereby makes, in accordance with sections 49(4) of the Act, the following proposal for giving a direction in relation to the removal of Analogue Core WLR Rental and WLR Transfer from cost orientation obligations applied to the wholesale fixed analogue exchange line services market.

2. The proposed direction removing Analogue Core WLR Rental and WLR Transfer from cost orientation obligations imposed by SMP Conditions AAAA3.1 and AAAA10.2 is set out in the Schedule to this Notification.

3. The effect of, and the reasons for, giving the proposed direction is set out in the accompanying document at Sections 5 and 9.

OFCOM's duties

4. In making the proposal set out in the Notification, OFCOM has considered and acted in accordance with its general duties in section 3 of the Act and the six Community requirements in section 4 of the Act.

Making representations

5. Representations may be made to OFCOM about the proposal set out in this Notification and the accompanying consultation document by no later than 9 June 2011.

6. In accordance with section 50 of the Act, copies of this Notification have been sent to the Secretary of State, the European Commission and to regulatory authorities of every other Member State.

Interpretation

7. Except for references made to the identified services markets in this Notification and subject to paragraph 8 below, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

8. In this Notification—

(a) "**Act**" means the Communications Act 2003 (c.21);

(b) "**Analogue Core WLR Rental**" means, unless OFCOM directs otherwise from time to time for the purpose of the meaning of this expression, such services as the Dominant Provider is required to provide under SMP services condition AAAA10.1(a) and which on the date this Direction takes effect include:

i. the rental of an analogue exchange line for control and billing purposes;
ii. maintenance which is part of the service provided by the Dominant Provider in consideration of the charge for an Exchange Line and includes a maintenance service level with a fault repair time of no more than provided for Level 1 service care level for Basic lines, as defined in the Dominant Provider's standard terms and conditions; and

(iii) one main directory listing per telephone number, comprising of either:

(i) a residential style listing; or
(ii) a business style listing, where the Dominant Provider provides to the Third Party a WLR3 service, as defined in the Dominant Provider's standard terms and conditions;

(c) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(d) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

(e) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11); and

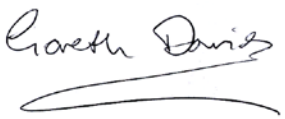
(f) "**WLR Transfer**" means a charge for the transfer of control of an analogue access line.

9. 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.

10. The Schedule to this Notification shall form part of this Notification.

Gareth Davies



Competition Policy Director

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

31 March 2011

SCHEDULE

[Proposed] Direction under section 49 of the Communications Act 2003 and SMP Conditions AAAA3.1 and AAAA10.2 imposed on BT as a result of a market power determination made by OFCOM in its "Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies" as published on 20 December 2010, that BT has significant market power in the market for wholesale fixed analogue exchange line services in the United Kingdom excluding the Hull Area

Background

1. On 20 December 2010, OFCOM published its statement entitled Review of the wholesale fixed analogue exchange lines markets (the "Wholesale Review Statement").

2. In the Wholesale Review Statement, OFCOM determined that BT held significant market power (SMP) in the market for wholesale fixed analogue exchange line services.

3. As a result, OFCOM imposed a number of remedies on BT in order to address identified competition concerns. Those remedies included SMP services conditions AAAA3 and AAAA10 which apply to those markets set out at paragraph 2 above.

4. Both AAAA3 and AAAA10 impose a cost orientation obligation upon BT, as follows:

> *AAAA3.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition AAAA1(a) is reasonably derived from the costs of provision based on a forward looking long-run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed;*
>
> *AAAA10.2 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall ensure that charges of providing WLR services in paragraph AAAA10.1 are based on the forward looking long-run incremental cost, except where the Dominant Provider and Third Party have agreed another basis for the charges.*

5. BT currently offers Analogue Core WLR Rental and WLR Transfer within the market described at paragraph 2 above. The charge ceiling imposed in Condition AAAA4(WLR) on Analogue Core WLR Rental is not based on a forward looking long-run incremental cost approach, allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed, and therefore is not consistent with SMP Conditions AAAA3.1 and AAAA10.1. Further, the charge ceiling imposed in Condition AAAA4(WLR) on WLR Transfer is set below forward looking long-run incremental cost, and therefore is also not consistent with the SMP Conditions AAAA3.1 and AAAA10.1. Therefore, OFCOM considers that we should not continue to apply the cost orientation obligations to these services.

Direction

6. OFCOM hereby, in accordance with section 49 of the Act, directs that SMP service Conditions AAA3.1 and AAA10.2 shall not apply to Analogue Core WLR Rental and WLR Transfer provided by BT in support of the rental of wholesale lines for the market set out in paragraph 8(a) of the Notification to the Wholesale Review Statement, that is to say: wholesale fixed analogue exchange line services.

7. The effect of, and the reasons for making, this Direction are set out in the accompanying explanatory statement at section [•].

Effective date

8. This Direction shall take effect on the [•].

OFCOM's duties

9. In making this Direction, OFCOM has considered the test set out in section 49(2) of the Act and considers that it is:

a. objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;

b. not such as to discriminate unduly against particular persons or against a particular description of persons;

c. proportionate to what it is intended to achieve; and

d. in relation to what it is intended to achieve, transparent

10. OFCOM also considers that, in making this Direction, it has acted in accordance with its general duties in section 3 of the Act and the six Community requirements in section 4 of the Act.

11. As set out in Section [•] of the explanatory statement accompanying this Direction, Ofcom has considered every representation about the proposed Direction duly made to it and the Secretary of State has not notified Ofcom of any international obligation of the United Kingdom for this purpose.

Interpretation

12. Except for references made to the identified services market in this Notification and subject to paragraph 13 below, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

13. In this Notification—

(a) "**Act**" means the Communications Act 2003 (c.21);

(b) "**Analogue Core WLR Rental**" means, unless OFCOM directs otherwise from time to time for the purpose of the meaning of this expression, such services as the Dominant Provider is required to provide under SMP services condition AAAA10.1(a) and which on the date this Direction takes effect include:

i. the rental of an analogue exchange line for control and billing purposes;

ii. maintenance which is part of the service provided by the Dominant Provider in consideration of the charge for an Exchange Line and includes a maintenance service level with a fault repair time of no more than provided for Level 1 service care level for Basic lines, as defined in the Dominant Provider's standard terms and conditions; and

(iii) one main directory listing per telephone number, comprising of either:

(i) a residential style listing; or
(ii) a business style listing, where the Dominant Provider provides to the Third Party a WLR3 service, as defined in the Dominant Provider's standard terms and conditions;

(c) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(d) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

(e) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11);

(f) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978 (c.30); and

(g) "**Wholesale Review Statement**" has the meaning given to it in paragraph 1 of this Direction.

(h) "**WLR Transfer**" means a charge for the transfer of control of an analogue access line;

14. 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.

[SIGNATURE]

[TITLE]

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

[DATE]

PART VI – PROPOSED CONSENT FOR PERIOD TO NOTIFY CHARGES (WLR) NOTIFICATION UNDER SECTIONS 49 OF THE COMMUNICATIONS ACT 2003

Proposal for giving a Consent under SMP Condition AAAA6(a).1 in Part 2 of Schedule 1 to the Notification at Annex 1 of the Statement entitled "Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies" as published on 20 December 2010, which Condition was imposed on BT as a result of the market power determination made by OFCOM that BT has significant market power in the market for wholesale fixed analogue exchange line services in the United Kingdom, excluding the Hull Area

Proposal in this Notification

1. OFCOM hereby makes, in accordance with section 49(4) of the Act, the proposal to give the Consent set out in the draft form in the Schedule to this Notification under SMP Condition AAAA6(a).1 in Part 2 of Schedule 1 to the Notification at Annex 1 of the Statement entitled Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies as published on 20 December 2010, upon the precondition set out in paragraph 2 being satisfied.

2. The precondition referred to in paragraph 1 above is that OFCOM decides to set (as proposed in Part IV of Annex 12 to the accompanying consultation) the proposed new SMP Condition AAAA4(WLR) entitled 'Charge control'.

3. The effect of, and the reasons for making, the proposed Consent is set out in the accompanying consultation document.

OFCOM's duties

4. In making the proposal set out in this Notification, OFCOM has considered and acted in accordance with its general duties in section 3 of the Act and the six Community requirements in section 4 of the Act.

Making representations

5. Representations may be made to OFCOM about this proposal set out in this Notification and the accompanying consultation document by no later than 9 June 2011.

6. In accordance with section 50 of the Act, copies of this Notification have been sent to the Secretary of State, the European Commission and to the regulatory authorities of every other Member State.

Interpretation

7. Except for references made to the identified services markets in this Notification and subject to paragraph 8 below, words or expressions used in this Notification shall have the same meaning as they have been ascribed in the Act.

8. In this Notification—

(a) "**Act**" means the Communications Act 2003 (c.21);

(b) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(c) "**Hull Area**" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc;

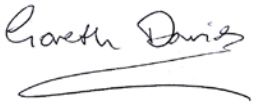
(d) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11);

(e) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978 (c.30).

9. 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.

Gareth Davies



Competition Policy Director

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

31 March 2011

SCHEDULE

[Draft] Consent under section 49 of the Communications Act 2003 and SMP Services Condition AAAA6(a).1 imposed on BT as a result of the market power determination made by OFCOM that BT has significant market power in market for wholesale fixed analogue exchange line services in the UK, excluding the Hull Area

Background

1. On 20 December 2010, OFCOM published a document entitled 'Review of the wholesale fixed analogue exchange lines markets: Statement on market definition, market power determinations and remedies' (the "2010 Notification").

2. At Annex 2 to the 2010 Notification, OFCOM published a notification identifying, in accordance with section 79 of the Act, the services market of wholesale fixed analogue exchange line services within the United Kingdom, but not including the Hull Area, in which OFCOM determined that, for the purposes of making a market power determination under the Act, BT has significant market power.

3. As a result of that market power determination, in accordance with section 48(1) of the Act, OFCOM set on BT pursuant to section 45 of the Act the SMP services conditions set out in Schedule 1 to the 2010 Notification, including Condition AAAA6(a) which imposes obligations on BT with regard to prior notification of charges before taking effect. In particular, paragraph AAAA6(a).2 of that Condition provides:

> *"AAAA6(a).2 Except where new or amended charges are directed or determined by Ofcom or where such charges are required by a notification or an enforcement notification given by Ofcom under sections 94 or 95 of the Act, the Dominant Provider shall send to Ofcom and to every Third Party with which it has entered into an Access Contract covered by Condition AAAA1(a) a written notice of any amendment to the charges on which it provides Network Access or in relation to any charges for new Network Access (an "Access Charge Change Notice"):*
>
> *(a) where the proposed amendment relates to the Wholesale Line Rental Charge, not less than 90 days before any such amendment comes into effect; and*
>
> *(b) in any other case, not less than 28 days before any such amendment comes into effect."*

4. On [•], OFCOM published a Notification of a proposal to set a new SMP Condition AAAA4(WLR) entitled 'Charge control'. In addition, OFCOM published a Notification of a proposal to give a Consent under section 49 of the Communications Act 2003 and SMP Services Condition AAAA6(a).1 in relation to charges to which that proposed Condition relates (the "Consent Proposal").

5. In accordance with section 50 of the Act, a copy of the Consent Proposal was sent to the Secretary of State, the European Commission and the regulatory authorities of every of the Member State.

6. By virtue of section 49(9) of the Act, OFCOM may give effect to the Consent Proposal, with or without modification, only if—

(a) it has considered every representation about the proposal that is made to OFCOM within the period specified in the notification; and

(b) it has had regard to every international obligation of the United Kingdom (if any) which has been notified to OFCOM for this purpose by the Secretary of State.

7. For the reasons set out in Section [•] of the explanatory statement accompanying this Consent, in accordance with section 49(2) of the Act, OFCOM is satisfied that this Consent is—

(a) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;

(c) not such to discriminate unduly against particular persons or against a particular description of persons;

(d) proportionate to what it is intended to achieve; and

(e) in relation to what it is intended to achieve, transparent.

8. For the reasons set out in Section [•] of the explanatory statement accompanying this Consent, OFCOM has considered and acted in accordance with its general duties set out in section 3 of, and the six Community requirements set out in section 4, of the Act in giving this Consent.

9. OFCOM has considered every representation about the proposed Consent duly made to it and the Secretary of State has not notified OFCOM of any international obligation of the United Kingdom for this purpose.

Consent

10. OFCOM hereby, pursuant to section 49 of the Act and under Condition AAAA6(a).1, gives consent to BT that period of 90 days referred to in Condition AAAA6(a).2 (amendments to the Wholesale Line Rental Charge) is to be reduced to a period of 28 days for any amendments to charges made prior to 1 April 2012 for services subject to Condition AAAA4(WLR) (and the Condition shall otherwise apply accordingly).

Interpretation

11. In this Consent—

(a) "**2010 Notification**" has the meaning given to it in paragraph 1 of this Consent;

(b) "**Act**" means the Communications Act 2003 (c.21);

(c) "**BT**" and "**Dominant Provider**", respectively, means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006;

(c) "**Consent Proposal**" has the meaning given to it in paragraph 7 above;

(e) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11); and

(f) "**SMP Condition AAAA4(WLR)**" means SMP Condition AAAA4(WLR) as set out in Schedule 1 to the Notification published by OFCOM on [•] at [•] to the explanatory statement accompanying this Consent.

12. Except insofar as the context otherwise requires, words or expressions in this Consent shall have the meaning assigned to them in paragraph 10 above and otherwise any word or expression shall have the same meaning as it has in the Act.

13. For the purpose of interpreting this Consent—

(a) headings and titles shall be disregarded; and
(b) the Interpretation Act 1978 (c. 30) shall apply as if this Consent were an Act of Parliament.

Effective date

14. This Consent shall take effect on [*Date*].

[*Name*]

[*Title*]

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

[*Date*]

Annex 14

Glossary

21CN: BT's next generation network upgrade.

Anchor pricing: An approach that bases charge control modelling on the cost of existing technology rather than that of any new technology that might be adopted during the control period.

BT: British Telecommunications plc.

BT Retail: The retail division of BT.

BT Wholesale: The wholesale division of BT.

Common costs: Costs which are shared by all the services supplied by a firm.

Competition Commission (CC): An independent public body that conducts in depth inquiries into mergers, markets and the major regulated industries.

CP (Communications Provider): A person who provides an Electronic Communications Network or provides an Electronic Communications Service.

Current cost accounting (CCA): An accounting convention, where assets are valued and depreciated according to their current replacement cost whilst maintaining the operating or financial capital of the business entity.

Current cost accounting fully allocated cost (CCA FAC): An approach used to measure a company's costs.

Current generation network (CGN): A network that uses existing (copper) technology in the core and backhaul.

Cumulo rates: The business rates paid by BT Group on its network business. These relate to the use of public land for assets such as poles, duct, street cabinets and the equipment in exchange buildings.

Digital subscriber line access multiplexor (DSLAM): A network device, located in the telephone exchanges of the internet service providers, that connects multiple customer Digital Subscriber Lines (DSLs) to a high-speed Internet backbone line using multiplexing techniques.

Distributed long run incremental cost (DLRIC): The LRIC of the individual service with a share of costs which are common to other services over BT's core network.

Distributed stand alone cost (DSAC): An accounting approach estimated by adding to the DLRIC a proportionate share of the inter-increment common costs. Rather than all common costs shared by a service being allocated to the service under consideration, the common costs are instead allocated amongst all the services that share the network increment.

Dropwire: The part of the network that uses a copper line from the distribution point to and including the PSTN Network Terminating Equipment (NTE).

Early termination charge (ETC): The total fee that will be charged for early termination of a contract or agreement.

Fully allocated cost (FAC): An accounting approach under which all the costs of the company are distributed between its various products and services. The fully allocated cost of a product or service may therefore include some common costs that are not directly attributable to the service.

Gross replacement cost (GRC): The cost of replacing an existing tangible fixed asset with an identical or substantially similar new asset having a similar production or service capacity.

Historic cost accounting (HCA): A method of accounting under which assets and liabilities are recorded at the values at which they were first acquired.

Incremental costs: Those costs which are directly caused by the provision of that service in addition to the other services which the firm also produces. Another way of expressing this is that the incremental costs of a service are the difference between the total costs in a situation where the service is provided and the costs in another situation where the service is not provided.

ISDN2: A type of digital telephone line service that supports telephony and switched data services. ISDN2 allows a business to handle two phone calls simultaneously. It is primarily used by smaller businesses.

ISDN30: A type of digital telephone line service that provides up to 30 lines over a common digital bearer circuit. These lines provide digital voice telephony, data services and a wide range of ancillary services. It is primarily used by larger businesses.

Local loop: The access network connection between the customer's premises and the local serving exchange, usually comprised of two copper wires twisted together.

Local loop unbundling (LLU): A process by which a dominant provider's local loops are physically disconnected from its network and connected to competing provider's networks. This enables operators other than the incumbent to use the local loop to provide services directly to customers.

LLU appeal: An appeal submitted by Talk Talk to the Competition Appeal Tribunal against the decisions contained in Ofcom's Statement "*A new pricing framework for Openreach*" of 22 May 2009.

Long run incremental cost (LRIC): The cost caused by the provision of a defined increment of output given that costs can, if necessary, be varied and that some level of output is already produced.

Main distribution frame (MDF)/unbundled local loop: An internal wiring frame where copper access network cables are terminated and cross connected to exchange equipment by flexible wire jumpers.

Metallic path facilities (MPF): The provision of access to the copper wires from the customer premises to a BT MDF that covers the full available frequency range, including both narrowband and broadband channels, allowing a competing provider to provide the customer with both voice and/or data services over such copper wires.

Minimum contract period (MCP): The amount of time a consumer must remain in a contract before being able to cancel it.

Modern equivalent asset (MEA): An approach to setting charges that bases costs on what is believed to be the most efficient available technology that performs the same function as the old technology.

Net replacement cost (NRC): Gross replacement cost less accumulated depreciation based on gross replacement cost.

Network terminating equipment (NTE): Transmission equipment located at the customer premises. Performs a similar function to LTE and also provides the customer interface.

Next generation network (NGN): A network that uses IP technology in the core and backhaul to provide all services over a single platform.

Openreach: The access division of BT established by Undertakings in 2005.

Public switched telecommunications network (PSTN): The conventional telephony network used to provide telephone calls using circuit-switching.

Regulatory asset value (RAV): The value ascribed by Ofcom to the capital employed in the relevant licensed business.

Regulatory financial statements (RFS): The financial statements that BT is required to prepare and publish by Ofcom.

Return on capital employed (ROCE): The ratio of accounting profit to capital employed. The measure of capital employed can be either Historic Cost Accounting (HCA) or Current Cost Accounting (CCA).

Rate of return (RoR): The ratio of money gained or lost (whether realised or unrealised) on an investment relative to the amount of money invested.

Retail price index (RPI): A measure of inflation published monthly by the Office for National Statistics. It measures the change in the cost of a basket of retail goods and services.

Shared metallic path facility (SMPF)/shared access: The provision of access to the copper wires from the customer's premises to a BT MDF that allows a competing provider to provide the customer with broadband services, while the dominant provider continues to provide the customer with conventional narrowband communications.

Stand alone costs (SAC): An accounting approach under which the total cost incurred in providing a service is allocated to that service.

Significant market power (SMP): The term used in the European Common Regulatory Framework to describe the position of a person who enjoys a market position of dominance with respect to that market.

Test access management system (TAMS): Used to provide remote access facilities on broadband circuits for testing towards the customer and into the network. They are installed between the Main Distribution Frame (MDF) and the Digital Subscriber Line Access Multiplexer (DSLAM).

Time division multiplex (TDM): a method of putting multiple data streams in a single signal by separating each signal into many segments, each having a very short duration. Each individual data stream is reassembled at the destination based on timing.

Weighted average cost of capital (WACC): The rate that a company is expected to pay on average to all its security holders to finance its assets.

Wholesale Fixed Analogue Exchange Line (WFAEL) market review: A review undertaken by Ofcom of the wholesale fixed analogue exchange line services market published 20 December 2010.

Wholesale Local Access (WLA) market review: A review undertaken by Ofcom of the wholesale local access market published 07 October 2010.

Wholesale line rental (WLR): The service offered by BT to other UK communications providers to enable them to offer retail line rental services in competition with BT's own retail services. Line rental is offered along with calls (and other service elements, such as broadband) to retail customers.

WLR appeal: An appeal submitted by Talk Talk to the Competition Appeal Tribunal against the decisions contained in Ofcom's Statement "*Charge controls for Wholesale Line Rental and related services*" of 26 October 2009.

Annex 15

Sources of evidence

Introduction

A15.1 We have referenced the evidence we have relied upon in relation to our proposals throughout this consultation; and we have also explained how we have relied upon that evidence.

A15.2 Whilst this Annex lists the main evidence we have relied upon, the list is convenience only and is not intended to be exhaustive.

Ofcom documents

A15.3 A new pricing framework for Openreach, Statement, 22 May 2009, http://stakeholders.ofcom.org.uk/consultations/openreachframework/statement

A15.4 Wholesale Local Access (WLA) review statement, 07 October 2010 http://stakeholders.ofcom.org.uk/consultations/wla/statement

A15.5 Wholesale Line rental (WLR) charge control Statement and Consultation, 26 October 2009, http://stakeholders.ofcom.org.uk/consultations/wlr/

A15.6 Wholesale Fixed Analogue Exchange Line (WFAEL) review statement, 20 December 2010 http://stakeholders.ofcom.org.uk/consultations/review-wholesale-fixed-exchange/statement

A15.7 Wholesale Broadband Access (WBA) charge control review consultation, 20 January 2011 http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/

A15.8 Openreach Financial Framework Local Loop Unbundling Charge Control: Adoption of Revised SMP Services Conditions following the Competition Appeal Tribunal's Directions; 14 October 2010 http://stakeholders.ofcom.org.uk/binaries/consultations/openreachframework/statement/revisedsmpconditions.pdf

A15.9 Leased Lines charge control statement, 2 July 2009, http://stakeholders.ofcom.org.uk/consultations/llcc/

A15.10 Review of BT Network charge Controls statement, 15 September 2009 http://stakeholders.ofcom.org.uk/binaries/consultations/review_bt_ncc/statement/ncstatement.pdf

A15.11 Mobile Call Termination Statement, 27 March 2007 http://stakeholders.ofcom.org.uk/binaries/consultations/mobile_call_term/statement/statement.pdf.

A15.12 Wholesale mobile voice call termination consultation, 1 April 2010 http://stakeholders.ofcom.org.uk/binaries/consultations/wmctr/summary/wmvct_consultation.pdf

A15.13 Review of the Wholesale Local Access market, Statement, 2004, http://stakeholders.ofcom.org.uk/binaries/consultations/rwlam/summary/rwlam2.pdf

A15.14 Mobile call termination: a simpler pricing rule, 16 November 2010 http://stakeholders.ofcom.org.uk/consultations/mtr/

A15.15 Framework for Disclosure of Charge Control Models, October 2010 http://stakeholders.ofcom.org.uk/binaries/consultations/784024/Charge_control.pdf.

A15.16 Next Generation Networks, Statement, January 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/ngndevelopments/statement/ngn_statement.pdf

A15.17 Pensions review, Statement, December 2010 http://stakeholders.ofcom.org.uk/binaries/consultations/btpensions/statement/statement.pdf.

Information requests - S135 requests

A15.18 Ofcom issued a series of notices under Section 135 of the Communications Act 2003 ('the Act') requiring various CPs to provide specified information as set out in the Notice for the purposes of an analysis of identified markets as contemplated by Section 79 under the Act. These are commonly known as S135 requests.

A15.19 S135 request of 16 July ('1ST 135') covering accurate and detailed information to assist our understanding, including to populate our own cost forecast and allocation models used for the purposes of each of these reviews. Information received from:

15.19.1 BT Openreach

A15.20 S135 request of 23 September 2010 ('2nd S135') covering accurate and detailed information to assist our understanding, including to populate our own cost forecast and allocation models, and also to carry out other analysis in relation to the charge control. Information received from:

15.20.1 BT Openreach

A15.21 S135 request of 4 October 2010 ('3rd S135') covering accurate and detailed information to assist our understanding, including to populate its own cost forecast and allocation models, and also to carry out other analysis in relation to the charge control. Information received from:

15.21.1 BT Openreach

A15.22 S135 request of 13 October 2010 ('4th S135') covering accurate and detailed information to help perform the opening phase of work on efficiency; to assist our analysis of differentials; and to further populate our own cost forecast and allocation models. Information received:

15.22.1 BT Openreach

A15.23 S135 request of 22 October 2010 ('5th S135') covering accurate and detailed information to perform analysis of duct revaluation. Information received:

15.23.1 BT Openreach

A15.24 S135 request of 26 October 2010 ('6thS135') covering accurate and detailed information to perform work on our assessment of efficiency (specifically, on historic changes in Openreach's costs to inform our understanding of Openreach's historic efficiency); to assess WLR/LLU differentials; and to populate our own cost forecast modelling. Information received:

15.24.1 BT Openreach

A15.25 S135 request of 19 November 2010 ('7th S135') covering accurate and detailed information to perform analysis of duct revaluation Ofcom documents. Information received:

15.25.1 BT Openreach

A15.26 S135 request of 7 December 2010 covering accurate and detailed information for the purpose of financial modelling for the charge controls reviews. Information received:

15.26.1 BT Wholesale; Telefonica O2 UK Ltd; Cable & Wireless Worldwide Plc; Virgin Media; TalkTalk Telecoms Group Plc.

A15.27 S135 request (8th) of 10 December 2010 covering accurate and detailed information for review of the cost data previously provided by Openreach as part of our WLR, LLU and ISDN30 charge control review. We also ask for information to inform our understanding of real wage inflation, volume forecasts and the scope of the charge controls. Information received:

15.27.1 Openreach

A15.28 S135 request (9th) of 20 January 2011 covering accurate and detailed information to feed into our assessment of the appropriate efficiency target for Openreach over the period of the charge controls. Information received:

15.28.1 Openreach

EC documents

A15.29 EC, Implementation report 2009, Comparison of UK and EU LLU average prices (October 2009) http://ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/annualreports/15threport/15report_part2.pdf

A15.30 Directive 2009/140/EC of 20 November 2009 amending Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services.

A15.31 Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

Appeals

A15.32 The Carphone Warehouse plc (now TalkTalk Telecom Group plc ("Talk Talk")) to the Competition Appeals Tribunal ('CAT') against decisions taken in the Ofcom Statement "*A new pricing framework for Openreach*" of 22 May 2009; 22 July 2009 http://www.catribunal.org.uk/237-4154/1111-3-3-09-The-Carphone-Warehouse-Group-plc.html

A15.33 The Carphone Warehouse plc (now TalkTalk Telecom Group plc ("Talk Talk")) to the CAT against decisions taken in the Ofcom statement *"Charge controls for Wholesale Line Rental and related services*" of 26 October 2009; 24 December 2009; http://www.catribunal.org.uk/237-5167/1149-3-3-09-The-Carphone-Warehouse-Group-Plc.html.

Academic literature

A15.34 Armstrong, Doyle and Vickers, "The access pricing problem: a synthesis", The Journal of Industrial Economics, June 1996, pp 131-150

A15.35 Fernandez, Pablo:Market Risk Premium Used in 2008 by Professors: A Survey with 1,400 Answers(April 16, 2009). Available at SSRN: http://ssrn.com/abstract=1344209

Ofcom research

A15.36 Communications Market Report,2010 http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf

Other research

A15.37 Analysys Mason, 'Alternative methodologies for the valuation of BT's duct assets' , March 2011, commissioned by Ofcom

A15.38 KPMG, 'Efficiency review of BT Openreach' , March 2011, commissioned by Ofcom

A15.39 BDO, Review of BT duct valuation 2009/10 report, 2011,commissioned by Ofcom

A15.40 Office of the Telecommunications Adjudicator, take-up of UK LLU & WLR lines http://www.offta.org.uk/updates/otaupdate20101207.htm

A15.41 Frontier economics, 'Openreach's next price controls: Issues for consideration', commissioned by Sky and the Talk Talk Group.

A15.42 Towerhouse consulting, Cost Accounting and Price Controls commissioned by UKCTA

A15.43 Volume forecasts, Analysys Mason and IDATE (FTTx Watch Service 2010)

A15.44 NERA study, December 2008, commissioned by Ofcom

A15.45 Dimson, Marsh and Staunton, "Credit Suisse Global Investment Returns Sourcebook 2009", Credit Suisse Research Institute

A15.46 Dimson, Marsh and Staunton, "Credit Suisse Global Investment Returns Sourcebook 2010", Credit Suisse Research Institute

A15.47 Brattle group, “Estimate of BT’s Equity Beta”, commissioned by Ofcom, October 2010

Other BT information

A15.48 BT Regulatory Financial Statements (RFS) 2009/10
http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/index.htm

A15.49 BT product information on cease charges
http://www.productsandservices.bt.com/consumerProducts/dynamicmodules/pagecontentfooter/pageContentFooterPopup.jsp?pagecontentfooter_popupid=26823&s_cid=con_FURL_ceasecharge

A15.50 Openreach’s service harmonisation initiative
http://www.openreach.co.uk/orpg/home/products/serviceproducts/serviceharmonisation/serviceharmonisation.do

Annex 16

PwC letter on duct valuation

A16.1 The letter from PwC to Ofcom on 14 March 2011, with respect to valuation of duct assets.