

Valuing copper access

Supplement to Part 2 – Proposals

Consultation document

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Section 1

Summary

- 1.1 This document is a supplement to the Ofcom consultation 'Valuing copper access Part 2 Proposals'.
- 1.2 Ofcom is publishing this document to provide additional information about the method of calculating, and adjusting for, the potential future over-recovery by BT of costs related to its copper access network. This document also corrects an error relating to the cost information provided in the original document, whereby the cost information on which Ofcom's analysis was based, was incomplete leading to a misstatement of the impact of adjustments to the valuation.
- 1.3 The consultation period is extended to allow additional time for respondents to take into account this supplemental information in formulating their responses, the new deadline for responses to the consultation is now 13 May 2005.
- 1.4 As a result of this addendum to the original consultation, Ofcom's analysis of the impact of its proposals on the cost of a copper loop has been revised. Additionally, Ofcom has taken this opportunity to update its analysis to incorporate forecast data in respect of the financial year 2004/5. Although this forecast data has yet to be confirmed through the audit process, Ofcom considers that the data is sufficiently robust to form the basis for respondents to respond to this consultation and that, on balance, it is preferable to use a more up to date 2004/5 forecast rather than older 2003/4 actual data. Ofcom's analysis indicates the reduction in the cost of a copper loop would be between 5.8% and 15.0% if the cost of capital were fixed at 13.5% as used in BT's 2003/4 regulatory financial accounts. With a cost of capital of 10.3%¹, the corresponding range is 14.9% to 23.4%.
- 1.5 Ofcom is continuing to review the relevant financial information with BT, but is satisfied that the data presented in this document is sufficiently robust to form the basis for respondents to respond to this consultation.

¹ Based on the parameter values discussed in Ofcom's cost of capital consultation (http://www.ofcom.org.uk/consult/condocs/cost_capital/).

Section 2 Introduction

Scope of this document

- 2.1 On 16 March 2005 Ofcom published 'Valuing copper access Part 2 Proposals'². This document provides supplementary information to that consultation document. It has been prepared by Ofcom and published in response to requests expressed by stakeholders for more information around the issue of the over-recovery (described in Section 5 of 'Valuing copper access Part 2 – Proposals'). In addition, it has emerged that cost information on which Ofcom's analysis was based was incomplete, leading to a misstatement of the impact of adjustments to the valuation.
- 2.2 In recognition of the materiality of these two matters, Ofcom is publishing this supplementary document. Specifically, this document covers:
 - a more detailed description of the way in which the regulatory asset value (RAV) is determined in order to avoid the possibility of future over-recovery and the way in which the switch to RAV is to be implemented;
 - a revised assessment of the impact of the adjustment for the overrecovery; and
 - modification to Figures 14 and 15 of 'Valuing copper access Part 2 Proposals' to reflect the revised over-recovery calculation and the revised BT cost data.

Revised consultation timetable

2.3 Ofcom proposes to extend the consultation period to allow respondents additional time to take into account this supplementary information in formulating their responses. The consultation will now close at 5pm on 13 May 2005.

Purpose of this document

2.4 This document forms an integral part of the second phase of Ofcom's consultation into valuing BT's copper access network and should be read in conjunction with 'Valuing copper access Part 2 – Proposals'. Where there is a difference between the information presented in this document and that presented in 'Valuing copper access Part 2 – Proposals', this document takes precedence.

² http://www.ofcom.org.uk/consult/condocs/copper/value2/?a=87101

Section 3 Revised cost data

Introduction

- 3.1 The detailed calculations undertaken by Ofcom in support of the analysis provided in 'Valuing copper access Part 2 Proposals' were based on information on the relevant costs extracted from BT's regulatory financial systems for the year ended 31 March 2004. Specifically, financial data sourced from BT was used as an input into Ofcom's model to determine the impact of changes proposed by Ofcom in its consultation. The results of these calculations were summarised in Figures 14 and 15 of 'Valuing copper access Part 2 Proposals'.
- 3.2 Since publication of the second consultation document, BT has reviewed Figures 14 and 15 and has determined that the data used in the analysis was incomplete. Additionally, since publication of the second document, BT has identified that the cost information provided under Figure 3 of "Valuing copper access Part 1", published on 9 December 2004 was also incomplete. Specifically, the operational expenditure figure used by Ofcom was understated. This has now been corrected and Ofcom has repeated its analysis using this revised cost data. Rolling forward the analysis to show the cost composition of the access network in 2003/4, CCA Depreciation accounted for around 20% of the total, Cost of Capital around 40% and other costs, including operating costs, around 40% of the total.

Effect of the revision

- 3.3 The impact of the correction is to decrease the impact percentages in Figures 14 and 15 with the exception of the over-recovery figures which are revised in line with the discussion in Section 4 of this document. Ofcom has also taken this opportunity to roll forward its analysis to take account of forecast 2004/5 data. The revised figures are presented in Section 5 of this document.
- 3.4 Ofcom is further reviewing the relevant financial information with BT but is satisfied that the data presented in this document is sufficiently robust to form the basis for respondents to respond to this consultation.

Section 4

Over-recovery adjustments

Introduction

- 4.1 Section 5 of 'Valuing copper access Part 2 Proposals' discussed the concept of the over-recovery by BT since 1997, on those assets in place on 1 August 1997, due to a switch in regulatory accounting methodology from Historical Cost Accounting (HCA) to Current Cost Accounting (CCA). In Section 6 Ofcom proposed to prevent any further over-recovery against this asset base by abating the value of the assets still remaining which were in situ as at 1 August 1997. Finally, in Section 7 the implementation of such an adjustment was discussed and a predicted range of the size of the adjustment was presented.
- 4.2 Since the publication of 'Valuing copper access Part 2 Proposals' a number of meetings have been held with stakeholders at which a common theme has emerged regarding the level of detail provided on the calculation of the over-recovery. It has been generally felt that insufficient detail was provided in 'Valuing copper access Part 2 Proposals' to allow stakeholders to provide a fully informed response to the consultation. Therefore, in this document, we provide more detail of Ofcom's proposed approach on this area.
- 4.3 Ofcom has continued to work with BT on the determination of the impact of adjusting for the over-recovery of costs and this document seeks to address stakeholder feedback by providing further detail on the manner in which the size and impact of the over-recovery adjustment is calculated.

Regulatory asset value

- 4.4 In 1997 the regulatory accounting system used by BT was changed from HCA to CCA and from 1 August 1997 all copper access network assets have been accounted for on a CCA basis for the purposes of BT's regulatory financial statements. As described in Section 5 of 'Valuing copper access Part 2 – Proposals', Ofcom's analysis indicates that as a result of the timing of this change and the subsequent treatment of these assets under CCA, where charges are set equal to CCA costs, BT will over-recover against its efficiently incurred costs on those copper access network assets that were in place as at 1 August 1997 (the "pre-1997 assets")³, over their remaining economic lives.
- 4.5 In Section 6 of 'Valuing copper access Part 2 Proposals' Ofcom proposes an adjustment to remove the risk of future over-recovery against the pre-1997 assets. For clarity, this adjustment involves the establishment of a regulatory asset value (RAV) for the pre-1997 assets. The concept of a RAV is explored in detail in Section 3 of 'Valuing copper access Part 2 – Proposals'.
- 4.6 Ofcom proposes to establish the RAV by considering the net book value (i.e. the 'HCA value') of the pre-1997 assets as at the end of the 2003/4 financial year, being the most recently available audited financial information available

³ All assets added after 1 August 1997 have been consistently treated under a CCA methodology. If the same accounting method is used consistently over the lifetime of these assets, their costs will be recovered without any over- (or under-)recovery

to Ofcom. The opening 2004/5 HCA assets will then be indexed by a measure of inflation. The closing balance will represent the value of the RAV as of 1st April 2005. The capital charge for the year will calculated by applying the relevant cost of capital to the average of the opening and closing balances

- 4.7 The value of the RAV for the pre-1997 assets would be subject each year to depreciation calculated under an abated CCA methodology and to indexation to account for inflation. There are two possible indices which can be used:
 - retail price index (or a derivative thereof); or
 - specific asset related price index (or a derivative thereof).
- 4.8 In this document Ofcom explores the results from the application of each alternative indexation approach. It is Ofcom's view that the more appropriate indexation approach is to adopt a retail price indexation. The reasons for this are explored in detail below.
- 4.9 The RAV approach ensures that BT has the opportunity to recover the efficiently incurred costs related to the pre-1997 copper access network assets but guards against any further over-recovery.
- 4.10 Over time, as the pre-1997 assets become fully depreciated and are replaced with assets introduced after 1 August 1997, the RAV will gradually be eroded to zero and the costs of copper access will move entirely to a CCA approach. This is because assets purchased after the switch to CCA accounting will continue to be subject to a full CCA approach and, over time, an increasing proportion of the total assets can therefore be expected to be treated in this way. This process (of conversion from a combined RAV/CCA approach to a full CCA approach) will not be concluded until all pre-1997 assets have completed their depreciation schedule which will happen sooner for copper than for duct due to the shorter book life of copper. If it is assumed that duct has a 40 year life (as proposed in this consultation) then in theory the last remaining pre-1997 assets will become fully depreciated in 2037/8, if installed in 1996/7. The value of the RAV will therefore diminish over time, as assets age to their full life and the charging basis for copper access will gradually migrate from a combined RAV/CCA basis to a pure CCA basis at the time that the last pre-1997 assets are written out. Ofcom's initial modelling suggests that there will be a small and gradual reduction in the percentage difference between the combined RAV/CCA basis of calculation and the full CCA values in the years to 2009/10.

Returns under the RAV methodology

- 4.11 As described above Ofcom proposes to adjust for the over recovery by using a RAV for those assets in situ as of 1 August 1997, and CCA for asset additions after this date.
- 4.12 As described above, the RAV is calculated by taking the opening net book value in 2004/5 of the pre 1 August 1997 asset base. Future values are calculated by applying a price index, in order to preserve the real value of the asset base. Depreciation is calculated using an abated CCA methodology, taking into account the lower asset value of the RAV compared to full CCA.

- 4.13 It is possible, by referring to the KPMG model described in Section 5 of 'Valuing copper access Part 2 – Proposals', to demonstrate that under a RAV approach there is no over-recovery relative to a consistently applied HCA or CCA methodology, assuming it is followed from the point of switch over. Figure 1 below shows cumulative discounted revenues (which are assumed to be equal to the sum of depreciation and the required return on capital) under HCA and after a switch to either CCA or RAV at the end of year five. While there is over-recovery under a switch to CCA, there is no over-recovery by a switch to a RAV. Beyond year five, the net present value of revenues are equivalent under HCA and the RAV approach. The returns after a switch to the CCA approach are higher as a result of the initial revaluation of the asset base which leads to higher future revenue streams.
- 4.14 With reference to Figure 1 it is possible to see that the cumulative revenue under a RAV approach dips below that of HCA in initial years as a result of the investors' compensation for inflation taking the form of cash returns under HCA (and hence higher cashflows earlier in the asset's life) and indexation under the RAV approach (and hence higher cashflows later in the asset's life.)



Figure 1: Cumulative NPV of revenues under HCA, CCA, and RAV

Impact of timing of the adoption of the RAV

- 4.15 It is necessary to determine at what point to adopt the RAV methodology, and Ofcom has identified two candidate approaches:
 - the RAV approach applies from the original switch on 1 August 1997; or
 - a forward looking RAV approach which applies from the date when the policy change is finalised

To understand the impact of these approaches Ofcom has again referred to the KPMG model.

4.16 Figure 2 illustrates, on an annualised basis, the different paths of cost recovery under three different accounting approaches: HCA, CCA and RAV adopted from the end of year five. The discounted returns from each approach are equivalent if it is applied consistently across the period with the same cost of capital.



Figure 2: Annual returns under HCA, CCA, and RAV

- 4.17 The initial annual cash return is lower under the RAV approach than HCA, as a result of the effect of the indexation. The holding gain arising from indexation forms part of the total return to shareholders and so reduces the annual cash return required in the year it accrues, while the gain in the increased valuation of the asset base is received in cash terms in later periods through higher capital charges.
- 4.18 As demonstrated earlier in Figure 1 if the operator were to switch to RAV approach from the end of year five, total returns over the period are equivalent to those received under HCA, whilst a switch to CCA from the end of year five would result in increased returns. However, were an operator to switch to CCA at the end of year 5, and then at the end of year 7 move to a RAV path that had commenced at the end of year 5 (the point of the original switch to CCA) then the operator would over recover the difference between the CCA path and the RAV path between the end of years 5 and year 7, and then would receive the higher RAV returns after year 7 compared to HCA.
- 4.19 However, If the RAV were to start at the end of year 7 after an initial switch to CCA at the end of year 5, the operator would have over recovered relative to HCA between the end of years 5 and 7, but from the end of year 7 the NPV of all future returns under this RAV approach would be equivalent to the returns which would have been received over the same period under an HCA convention. In the context of applying a RAV to BT, the analysis suggests that a forward looking RAV approach should be adopted to prevent any further

over recovery relative to HCA. The RAV methodology is preferred to HCA because it allows CCA principles to be applied going forward and it restores the value of the asset base, ultimately, to its CCA value.

4.20 As detailed in previous consultation documents on Valuing Copper Access, at the time of the switch from HCA to CCA, Oftel did not consider that BT would benefit from over-recovery in the period 1997-2001 as a result of the switch because the impact on the prices set would not have been significant. After this time, competition was expected to be the primary constraint on prices. Given that competition in provision of local access has not emerged to the extent envisaged at the time of the switch, Ofcom believes it is appropriate to revisit the way in which costs are recovered in respect of those assets in situ at the time of the switch. To ensure that BT does not benefit from over-recovery of costs on these assets in future, Ofcom therefore proposes to adopt a RAV approach based on the closing net book value in the 2003/04 financial year of assets in situ as of 1 August 1997. Ofcom proposes to implement this approach in the 2005/6 financial year.

Question 21: Do you agree that the RAV should be based on the closing net book value in the 2003/4 financial year of assets in situ as of 1 August 1997 and that the approach should be implemented in the 2005/6 financial year? If not, on what do you believe Ofcom should base the RAV, when should this be implemented and why?

Choice of index

- 4.21 Ofcom has considered the appropriate indexation measure: actual asset price changes or a general measure of inflation such as RPI. Forecasting the value of the RAV in the context of charge setting is likely to be more difficult using individual asset price indices. This is because deriving a forecast of actual asset price inflation is problematic due to the large annual variation in asset prices, which for copper in particular are largely driven by global supply and demand.
- 4.22 Given that the majority of the cost involved in laying duct arises from the use of labour in the duct laying process, it may be appropriate for the duct asset class to consider the use of a labour index (e.g. the change in unit wage costs.) The annual change in unit wage costs to Q4 2004 was 2.0%⁴. This compares to RPI in the year to the end February 2005 of 3.2% ⁵

4.23 It is far less straightforward to predict future changes in the price of copper, as copper prices are driven by global supply and demand which vary considerably year by year.

Figure 3 below shows the movement in the price of copper since 1998. The last two years has seen a dramatic increase in the price of copper as a result of increased demand from industrialising countries such as China. Predicting whether this trend will continue is difficult and one could assume that at some point, in line with the global economic cycle, prices may fall. Forecasting an accurate index for copper based on actual asset prices would therefore be highly subjective.

⁴ http://www.statistics.gov.uk/statbase/TSDdownload2.asp

⁵ From the ONS: http://www.statistics.gov.uk/cci/nugget.asp?id=19



Figure 3: Copper price per tonne (US\$) 1998 to 2005

4.24 Ofcom understands that it has been standard practice in the UK utility sector to apply a general price index when adopting a RAV approach rather than an asset specific price index⁶, due to the uncertainty over future asset price movements. Therefore, Ofcom proposes to use an RPI of 3.2%⁷, to index both the duct and copper asset base in 2004/5. This would give BT a nominal increase in the HCA of the 1 August 1997 asset base as of 2003/4 of 3.2%, effectively maintaining the real value of the asset base. As the pre-August 1997 assets gradually fully depreciate, Ofcom expects the impact of this adjustment to diminish. Ofcom further proposes to continue to use RPI for the indexation of the RAV.

Question 22: Do you agree that the appropriate index for the RAV in the 2004/5 financial year is an RPI of 3.2% and do you agree that RPI should continue to be used for future indexation of the RAV? If not, what index should be adopted and why?

Source: London Metal Exchange

⁶ "The Role of Current (Replacement) Cost Accounting for Regulated Business" – Geoffrey Whittington

⁷ From the ONS: <u>http://www.statistics.gov.uk/cci/nugget.asp?id=19</u>, being the RPI in the year to the end of February 2005

Section 5

Impact of changes

Introduction

5.1 This section presents changes to 'Valuing copper access Part 2 – Proposals'. As noted in Section 2, Ofcom has taken this opportunity to represent its analysis on the basis of forecast 2004/5 data. The changes quoted therefore represent the impact of the proposals compared to a forecast 2004/5 CCA charge. When measuring the impact of the RAV, Ofcom is comparing the charge derived under the RAV in 2004/5 compared to the 2004/5 full CCA charge.

Results

- 5.2 The quoted range of "4.8% and 14.2%" in paragraph 1.9 and 7.4 from the original document becomes "5.8% and 15.0%", on a forecast 2004/5 basis.
- 5.3 The quoted range of "14.6% and 24.1%" in paragraph 1.10 and 7.16 becomes "14.9% and 23.4%", on a forecast 2004/5 basis.
- 5.4 The following text replaces paragraph 7.7 from the original document in its entirety:

"Ofcom proposes to adjust for over recovery by setting the accounting value of those assets in situ on 1 August 1997 equal to their net book value as of 2003/4, and then adopt a RAV methodology by applying a general price index to this asset base. Depreciation is calculated using a CCA methodology, reflecting the lower RAV asset base. The difference between the annual costs derived from each method used to calculate the RAV with the annual costs calculated under the full 2004/5 CCA value are shown in the table below:

Method	Start date	Price index	Difference
1	1/08/97	Actual asset PI	10.9%
2	1/08/97	RPI	5.8%
3	1/04/04	Actual asset PI	11.4%
4	1/04/04	RPI	10.4%

This percentage will fall in subsequent years as the proportion of the access asset base made up of assets present as at 1 August 1997 will decline over time."

5.5 Figures 14 and 15 are replaced with the following tables:

	Method 1		Method 2			Method 3			Method 4			
	Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
Base valuation vs. current	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Over-recovery	10.9%	10.9%	10.9%	5.8%	5.8%	5.8%	11.4%	11.4%	11.4%	10.4%	10.4%	10.4%
Efficiency	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Shared duct	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Faulty	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Competition	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spare capacity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asset life	0.0%	2.2%	4.5%	0.0%	2.2%	4.5%	0.0%	2.2%	4.5%	0.0%	2.2%	4.5%

Figure 14: Discrete results for Proposal 1 under the RAV approaches:

Note: the sum of the individual impacts will not equal the cumulative impact as the parameters are interdependent.

Figure 15: Cumulative results for Proposal 1 under the RAV approach:

	Method 1		Method 2			Method 3			Method 4			
	Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
Base valuation vs. current	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Over-recovery	10.9%	10.9%	10.9%	5.8%	5.8%	5.8%	11.4%	11.4%	11.4%	10.4%	10.4%	10.4%
Efficiency	10.9%	10.9%	10.9%	5.8%	5.8%	5.8%	11.4%	11.4%	11.4%	10.4%	10.4%	10.4%
Shared duct	10.9%	10.9%	10.9%	5.8%	5.8%	5.8%	11.4%	11.4%	11.4%	10.4%	10.4%	10.4%
Faulty	10.9%	10.9%	10.9%	5.8%	5.8%	5.8%	11.4%	11.4%	11.4%	10.4%	10.4%	10.4%
Competition	10.9%	10.9%	10.9%	5.8%	5.8%	5.8%	11.4%	11.4%	11.4%	10.4%	10.4%	10.4%
Spare capacity	10.9%	10.9%	10.9%	5.8%	5.8%	5.8%	11.4%	11.4%	11.4%	10.4%	10.4%	10.4%
Asset life	10.9%	13.0%	14.6%	5.8%	8.4%	10.3%	11.4%	13.5%	15.0%	10.4%	12.8%	14.5%

		Proposal 2			Proposal 3	
	Low	Mid	High	Low	Mid	High
Base valuation vs. current	0.0%	0.0%	0.0%	-33.2%	-6.5%	15.5%
Over-recovery	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Efficiency	1.1%	2.3%	4.5%	0.0%	0.0%	0.0%
Shared duct	0.0%	0.0%	0.0%	0.0%	1.5%	2.1%
Faulty	0.2%	0.4%	0.9%	0.0%	0.0%	0.0%
Competition	0.9%	1.8%	3.5%	0.0%	0.0%	0.0%
Spare capacity	0.2%	0.5%	1.1%	-0.9%	-0.2%	0.0%
Asset life	0.0%	2.2%	4.5%	0.0%	1.0%	1.0%

Figure 16: Discrete impact of each parameter for Proposals 2 and 3

Note: a negative value indicates an increase over the current cost.

	Proposal 2			Proposal 3			
	Low	Mid	High	Low	Mid	High	
Base valuation vs. current	0.0%	0.0%	0.0%	-33.2%	-6.5%	15.5%	
Over-recovery	0.0%	0.0%	0.0%	-33.2%	-6.5%	15.5%	
Efficiency	1.1%	2.3%	4.5%	-33.2%	-6.5%	15.5%	
Shared duct	1.1%	2.3%	4.5%	-33.2%	-5.0%	17.7%	
Faulty	1.4%	2.7%	5.3%	-33.2%	-5.0%	17.7%	
Competition	2.2%	4.4%	8.6%	-33.2%	-5.0%	17.7%	
Spare capacity	2.4%	4.8%	9.5%	-34.1%	-5.2%	17.6%	
Asset life	2.4%	6.7%	12.9%	-33.7%	-3.9%	18.6%	
Total	2.4%	6.7%	12.9%	-33.7%	-3.9%	18.6%	

Figure 17: Cumulative impact of each parameter for Proposals 2 and 3

Note: a negative value indicates an increase over the current cost.