# Valuing copper access

## Part 2 – Proposals

BT's response to
Ofcom consultation document
published 16th March 2005
**and the Supplement**
**published 26th April 2005**

13th May 2005

BT would welcome comments on this response. Comments should be addressed by e-mail to Michael Doodson at michael.doodson@bt.com

# Contents



# A. Executive Summary

Ofcom is proposing[1] to make a number of substantive changes regarding the regulatory value of local access network copper and duct assets, including:

- **revaluing the assets held at the changeover from HCA (Historical Cost Accounting) to CCA (Current Cost Accounting) in 1997** (referred to as the "pre-1997 assets") from their CCA Net Replacement Cost to their HCA Net Book Value as at 31st March 2004, indexed forward to 31st March 2005. Ofcom refers to this new carrying value of the pre-1997 assets as the Regulatory Asset Value (RAV). Ofcom asserts that this adjustment is designed to disallow an alleged "over-recovery" of costs going forward. This would significantly reduce the carrying value of the pre-1997 assets for regulatory purposes.
- **extending the economic lives of all copper and duct** from 15 years to 20 years for copper, and from an effective life of 38 years to 40 years for duct.
- **reducing the price of key local access products as a consequence of these changes.** Combining the proposed changes above and changes to the allowed rate of return on capital employed (subject to separate consultation[2]), Ofcom is proposing to reduce the charges permitted for local access products deemed not to be subject to competition i.e. the "bottleneck" part of the BT's local access network.

This consultation raises fundamental regulatory issues that have far-reaching implications for the development of the telecommunications industry in the UK. Ofcom has responsibilities to a wide range of stakeholders, and as well as protecting consumers has an important role to play in incentivising investment in new technologies that have significant potential to introduce innovative and economically important telecommunications services.

This response sets out BT's views on these issues in more detail, and illustrates BT's belief that:

On asset values:

- Ofcom have provided no evidence that BT's local access network assets are over-valued.
- There is no evidence set out that demonstrates that either BT or its shareholders enjoyed an over-recovery on the pre-1997 assets, nor that there will be any such gain going forwards.
- No evidence is presented that supports the proposal to re-value selected assets only, using their HCA Net Book Value as a basis. Ofcom's approach seems arbitrary, and is not a consistent or logical application of the Regulatory Asset Value (RAV) approach used by other UK regulators.

[1] We focus here on Ofcom's Proposal 1 (paragraphs 6.4 to 6.9).
[2] *"Ofcom's approach to risk in the assessment of the cost of capital"*, published 26th January 2005. This consultation closed 5th April - Ofcom has yet to make a statement relating to cost of capital.

In the light of the weaknesses in Ofcom's proposals, and the absence of compelling evidence in favour of any alternative, CCA remains the most appropriate approach to valuing all the local access network assets.

On asset lives:

- There is no objective evidence to support the changes in asset lives that Ofcom is proposing, and no changes should be made.

**The proposals will make little difference to consumers**

The proposals being made by Ofcom, which would materially reduce the regulatory asset value of BT's local access network, would do little in practice to increase consumer choice or the effectiveness of retail competition, since all retail players will face the same input costs, whatever their absolute level.

**The proposals will undermine confidence in the regulatory regime**

Ofcom's proposals would send a negative message to all existing operators of local access networks and to those considering making investments in the UK telecommunications market. Ofcom's apparent willingness to undertake such a major revaluation in the light of a change in policy objectives would has the potential to undermine confidence in the objectivity and stability of the regulatory regime in telecommunications in the UK.

Ofcom needs to consider carefully the longer term implications of the current proposals in relation to the need for symmetrical treatment of external risk in the regulatory regime. Capping upside benefits, as is proposed, should be coupled with the intention to relieve downside effects outside BT's control - for example in the event that significant technology developments render material assets redundant.

**Assets are not over-valued**

In addition, we believe that the basis of Ofcom's proposals is erroneous, and that the proposals seek to address a problem that is not readily proven to exist. Ofcom has presented no evidence that BT's local access network assets are over-valued, and the use of supposed cost "over-recovery" to justify reduction in asset values is based on weak, subjective, assertion rather than objective economic grounds. It could be suggested that Ofcom's approach is designed simply to achieve a goal of lower wholesale access prices.

**Proper economic signals remain important**

Appropriate consideration of economic value of assets is absolutely key to ensuring the success of the regulatory regime. It is vital that Ofcom sets the asset values at the right level to properly reward investors and to give meaningful economic signals to actual and potential investors in competing networks. Ofcom's proposals would not achieve these objectives.

**The evidence does not prove over-recovery**

Ofcom's narrow focus on supposed over-recovery is flawed. Furthermore, the only "evidence" of an over-recovery is in the graphs presented by Ofcom in its consultation documents and the supplemental information. These are simple models that do not take account of actual financial information, or the impacts of taxation on cash flows, to prove or quantify any supposed over-recovery. Ofcom have presented no evidence that either BT or its shareholders have enjoyed anything that could be fairly described as an over-recovery, and since there is no evidence that BT's assets are over-valued, there is no over-recovery going forwards either. Given Ofcom's emphasis on evidence-based regulation, there is certainly insufficient evidence to justify writing off a significant amount from BT's regulatory asset value and imposing material reductions in future revenues.

**Evidence does not support a move away from CCA**
When CCA was introduced as the basis for the regulatory value of BT's assets in 1997 it was clearly intended to be a permanent change in regulation. We believe that the regulator should act in a manner that is transparent and consistent over time. To diverge from the CCA approach now (even partially), and impose a lower valuation, would be a clear expropriation of shareholder value. We continue to believe that CCA, based on existing asset lives and valuation methodology, remains the most appropriate approach to use. Not least, it represents the competitive price of access, and this benchmark should govern regulatory intervention in telecommunications markets.

In contrast, the re-introduction of HCA-based asset valuation, either in whole or in part (as appears to be Ofcom's intention in relation to the pre-1997 access assets) would not be not appropriate as it fails to reflect either competitive levels of supply or shareholders' previous reasonable expectations as to how the regulator would treat the long-lived assets over which it has jurisdiction. HCA is not the right measure of economic value to use for forward-looking pricing. Guidelines issued by the European Regulators Group, and circulated by the European Commission, recommend a CCA-based forward-looking pricing approach. This approach should apply to all assets, whichever their year of installation.

**There is no evidence to support changes to asset lives**
We are also very concerned that Ofcom is proposing to change the asset lives of the access copper and duct on what appears to be an arbitrary basis, with no objective evidence. The asset lives currently used for BT's assets are based on informed judgement about actual assets, whereas Ofcom appears to be willing to accept the views of companies who have a clear interest in BT adopting longer asset lives. Any adjustment to the asset lives should be based on objective evidence that takes account of physical conditions and the likelihood of alternative technologies rendering any assets uneconomic.

In conclusion, we believe Ofcom's proposals are not appropriate, and BT's firm view is that:

- **CCA should remain the basis for regulation of *all* local access network assets.**
- **Copper and duct asset lives should not be changed from those currently used.**

# B. Detailed comments

## *Introduction*

In "Valuing copper access: Part 2 – Proposals" (Referred to from here on as “Part 2”) Ofcom proposes to continue with the present CCA-based method for determining the value of the copper loop for regulatory purposes but with certain adjustments. The first set of adjustments is on the basis that there would otherwise be an “over-recovery” of costs resulting from the decision made in 1996 to base regulation from 1997 on CCA asset valuations rather than HCA asset valuations. The sums involved are potentially material, with a reduction in the valuation of the assets in question, based on Ofcom's proposed approach for deriving the 2004/5 RAV for duct and copper.

Ofcom also proposes to extend the economic life of local access copper and duct assets, thus reducing the annual depreciation charge relating to these assets. These proposals would reduce annual allowed depreciation for each year going forward.

BT does not believe that these adjustments are justified for the reasons we give below.

## *Ofcom's proposals would adversely affect infrastructure competition*

Ofcom largely bases its proposals on a change in its objectives compared with those Oftel adopted in 1997 - in particular a reduction in the importance it now attaches to providing incentives for efficient investment in access infrastructure, and an increased emphasis on protecting consumers. Despite the expansion of cable operators during the period 1996 to 2000, and the widespread use of mobile phones in place of fixed lines, Ofcom does not consider this has resulted in a significant increase in infrastructure competition to BT. As a result, Ofcom does not appear to consider that the likely disincentivising effects of their proposals on investment in alternative access platforms is a major concern.

BT does not believe that such a policy reversal is justified for a number of reasons.

First, Ofcom has stated that one of its Key Regulatory Principles is that Ofcom should: *“create scope for market entry that could, over time, remove economic bottlenecks”*. This is inconsistent with the current proposals, which would deliberately reduce incentives for the very investment which could, in due course, remove economic bottlenecks.

It may well be, as Ofcom suggests, that new access technologies are not yet mature and/or that they do not have business plans which are robust enough to attract the funding necessary for mass roll-out. They might serve only particular consumer segments in the short to medium term. Even so, this would surely be a welcome development, and any regulatory measure which involves reducing the costs of access to BT’s network is going to make the business case for a substitute service more difficult, whether these services are mass market or not. In particular, both Wi-Fi and fibre business cases will be adversely effected as a result.

Recent evidence from the US is now showing a direct relationship between the level of regulated access charges and overall infrastructure investment. Robert Crandall, Allan Ingraham and Hal Singer have found that in the US lower access charges are associated with lower levels of entry by facilities-based carriers[3]. Thus, where US State regulators have imposed lower wholesale charges, overall investment has tended to be lower.

[3] 2004 Article Submitted to the BE Journals of Economic Analysis and Policy, Manuscript 1136.

The imposition of lower copper loop charges in the UK may well have the same effect. Ofcom appears to consider that this will not occur as it notes that *"a [complete] return to HCA would tip the balance too far against the aim of encouraging competing infrastructure"*. In fact, any imposition of prices below those of the replacement cost of assets will tip the balance against infrastructure-based competition and against those entrants who have already entered on this basis. One cannot have a competitive standard, mandate charges below this standard, and maintain that this will not distort the development of competition.

A reduction in the value of sunk assets may deliver short run benefits for consumers, but at the expense of shareholders in all access network operators. Such consequences would send a very negative message to those considering making further investments, who may justifiably conclude that their expected returns are subject to an unacceptable degree of regulatory uncertainty. Ofcom should not be skewing economic signals in any part of the telecommunications market, since this interference with the operation of the market will distort the efficient allocation of resources.

A further effect of moving away from CCA, even for a subset of assets, would be to bias the development of services towards the use of the copper access network rather than alternative platforms, both existing and prospective, such as cable, wireless and fibre. If this review ultimately results in Ofcom mandating prices below replacement cost this would not be "technologically neutral", nor would it support the development of sustainable competition i.e. competition which can exist without the need for regulation. Both technological neutrality and the development of sustainable competition are central objectives of European Directives on telecommunications.

### *There has been no "over-recovery" of costs, nor any evidence that it is likely to arise in the future*

Regulators have responsibilities to a range of stakeholders, and it is important to strike an appropriate balance between the various rights and expectations of these stakeholders. We believe that over-recovery is neither proven or relevant for forward-looking regulation. In focussing very narrowly on supposed cost "over-recovery", Ofcom is failing to achieve such a balance, since they are giving higher priority to current consumers via a flawed concept than to the fundamental issue of assigning a value to assets that gives reasonable returns to investors (both in BT and other network operators) and gives appropriate economic signals to both consumers and to potential network competitors.

In Part 2, Ofcom suggests that continuation of the full CCA approach would mean that BT will be in receipt of an "over-recovery" of costs. This applies to those assets in place at the time of the transition from HCA to CCA made in 1997. Ofcom says that this had not been a concern to Oftel at the time, on the basis that when the transition was made in 1997 Oftel believed that competition would by the present time have prevented any over-recovery. Ofcom assert that the proposed adjustment is thus no more than that which Oftel implicitly anticipated in 1997. This rationale is not valid for a number of reasons.

Firstly, when the change was made in 1997, it may be that Oftel expected asset values in due course to be governed by (access) competition. But, as Ofcom stated in Part 1, the use of CCA valuation is consistent with long run incremental costs, and these costs give appropriate signals for investment, because they reflect the costs that a new entrant would incur. Therefore, the assertion that access competition has failed to live up to Ofcom's expectations since 1997 is not relevant, because competitive prices would more closely reflect CCA-based charges. UK utilities regulation has been intended to mimic the effects of competition where this is yet to fully develop. The transition to CCA in 1997 was clearly intended to be a permanent change, consistent with regulation mimicking the impact of competition, and was not ever intended to be *conditional* on competition developing.

Secondly, the return over the lifetime of the assets in question has other elements worthy of consideration. Prior to 1997, Oftel based BT's regulated prices on HCA valuation of its mean capital employed, using a weighted average cost of capital (WACC) for BT to calculate an allowance for return on capital employed. The method used to determine the WACC was the capital asset pricing model (CAPM), which depends on a number of parameters that are explicitly associated with the stock market's view of BT as an investment and equities and debt in general. In order to be consistent, CAPM should therefore be applied to a valuation of mean capital employed that is a close proxy for market value of the assets. Prior to 1997, BT's HCA asset values were considerably lower than its market capitalisation, and therefore applying CAPM to the HCA values resulted in considerable **under**-recovery. A substantial upward adjustment should have been made to the WACC to compensate for the difference between the HCA and CCA mean capital employed. It was not made, perhaps because these points were not appreciated at the time. It means however that it is not certain that BT has, or would ever, "over-recover" its costs on the pre-1997 assets.

Thirdly, where other UK regulators have determined a RAV that departed from the book value of the regulated company, they have based this on the market value of the company at a chosen point in time. Shareholders have been permitted returns equal to CCA values or market values where these were at a discount to CCA values. RAVs have not been implemented simply by returning to HCA values. This issue is discussed in the following section.

Finally, the copper and duct assets subject to this consultation have been used very largely in the provision of exchange line rentals. If we consider the returns arising from this real-life activity, to test the simple economic model tabled by Ofcom, we note that the actual returns generated from sale of these services has been substantially lower under a CCA basis of measurement than under HCA. In the 8 years commencing 1 April 1996 and ended 31 March 2004, CCA returns were cumulatively lower than HCA returns by more than £500m.

Thus, in order to achieve an over-recovery relative to the HCA basis of measurement over the asset lives, CCA returns must first make good these cumulative deficits. On a discounted basis, it is at least questionable whether any over-recovery can ever be achieved.

### *Ofcom's proposals would adversely affect investors*

As Dr Eileen Marshall pointed out in response to the first consultation document[4], it would not be appropriate to use BT's market value at or shortly after flotation to determine a RAV, since it is many years since flotation took place. However, it is still relevant to compare the market capitalisation of BT with the CCA and HCA carrying values of net assets (equal to shareholders funds on the balance sheet). In 1996, market capitalisation was roughly in line with CCA book values, implying that shareholders would have had the view that they would earn the cost of capital on a CCA asset base. A change now to using a lower HCA basis for setting wholesale charges would represent an expropriation compared with these legitimate expectations – which are key to the development of the UK telecommunications industry if equity finance is to be relied upon to continue to fund investment.

After the move to the CCA basis in 1997, investors in BT had an expectation that BT would continue to be regulated on a CCA basis for the foreseeable future. Consistency of regulatory regimes is vital if shareholder confidence and continued commitment to

[4] Annex 3 to BT's response to Ofcom's Part 1 consultation. On page 15 of her Opinion, Dr Marshall says: *"In the case of BT, given the length of time since privatisation, market values at or close to privatisation will be largely irrelevant. On the other hand, there is a history of previous regulatory settlements which, together with capital market responses to those settlements, could provide the basis for assessment of shareholders' reasonable expectations and interests."*

investment is to be maintained. There was no indication in anything Oftel or Ofcom said prior to the current series of consultations that would have led an investor in BT to believe that the regulator would change its mind and revert (in practice or in effect) to a wholly or partial HCA basis. In fact the intention to use CCA as the basis for regulation was signalled before 1997, Oftel already having required BT to produce CCA accounts prior to that date. There was no step-change in BT's share price in 1997, indicating that the market had already taken account of the use of CCA for regulatory purposes. Thus for the period since 1997 all existing or new investors in BT were entitled to the reasonable assumption that CCA would be used as a basis for regulation. None of these investors has enjoyed anything that could be called an "over recovery" - they have seen BT achieve returns entirely in line with regulation on a CCA basis and the incentive properties of the price control regimes in place since 1997.

### *HCA asset valuation is inappropriate*

Using simple HCA net book value (NBV) at any time is likely to be the lowest possible accounting figure (where assets are, on average, appreciating due to the effect of indexation). The weaknesses in using HCA are well-known - HCA is not suitable for forward-looking pricing, HCA asset valuation does not necessarily have any relationship to either the economic value of the assets or the value of the assets to shareholders The European Regulators Group has concluded that CCA is the right basis to use for regulatory purposes, a view also supported by US Federal Communications Commission in its 2003 review of Unbundled Network Elements (UNE) pricing.

As explained by Dr Marshall, regulators have, in setting what is a fair regulatory asset valuation, diverged from using replacement costs to value assets for regulatory purposes. In doing this they have considered the market value of the firm at or shortly after flotation, as this contains an implicit asset valuation. No UK regulator has, to our knowledge, simply used HCA valuations, or imposed them without recourse to a measure of market valuation. Neither the Monopolies and Mergers Commission (MMC) nor its successor body, the Competition Commission, has considered HCA as an appropriate basis for determining a RAV for regulated companies.

### *Alternative valuation approaches should be considered*

Consistent and reasonable regulation would require that, in the absence of a meaningful market value to use for setting RAV, an appropriate proxy should be employed. There is only a small range of options but Ofcom has disregarded or dismissed these. A proper assessment of alternatives must be done before a conclusion is reached. Ofcom has dismissed market value, but we strongly believe that, while flotation value may be of little relevance, recent market value is highly relevant because it indicates the value shareholders place on the underlying assets. It may be difficult to derive a RAV for the local access network assets based on BT's total market value, but this approach cannot be ignored. Indeed the MMC used this approach in relation to British Gas in 1993, determining a RAV based on its market value many years after flotation.

As well as taking account of market value, we believe that CCA, in the way applied by BT, gives a sound and reasonable basis for determining a RAV. The CCA valuation of fixed assets aims to reflect the modern equivalent asset (MEA) by using a combination of annual indexing and asset-specific revaluation.

### *The Market Value approach taken by other regulators must be considered*

We have included in Annex 1 a further statement of opinion by Dr Marshall which notes that Ofcom had not considered an approach that has been used in other regulated sectors. The use of a Regulatory Value (RV), which is indexed by RPI and rolled forward from one review to another, as in the case of UK water and gas utilities, has been to ensure that

shareholders are not subject to one-off reductions in regulated prices via regulatory write-downs in asset values. This does not mean that shareholders are over-rewarded but that regulatory risk to their investment in long-lived assets is substantially removed. Consumers continue to be protected by RPI-X regimes. Dr Marshall considers that such a regime has much to commend it.

In addition, the initial setting of the RV reflected what were judged to be shareholders' reasonable expectations of (what was then *future*) regulatory conduct. If this approach to setting a RV was taken in relation to BT it is likely that it would result in a total RV *greater* than CCA net replacement cost.

Unlike the case of water and gas shareholders, BT shareholders did not acquire their shares at a discount to CCA asset values. They would not be in receipt of a windfall gain by the use of a full CCA regime. In addition, the reasonable expectations of shareholders since the mid-1990s would definitely not have been that the regulator would revert to HCA. They have bought and held shares of the expectation that the transition to CCA was a permanent one.

Consistency with the approach taken by other national regulators, the MMC and the Competition Commission therefore implies that Ofcom should not impose a write down in the regulatory value of assets, and that CCA should be continued i.e. that a RV is recognised which is in line with CCA asset values.

### *Ofcom's proposed approach is confused and inconsistent*

Dr Marshall has suggested that Ofcom should consider setting a regulatory value (RV) for the local access activities based on stock market values as has been applied in other regulated industries. In Part 2 Ofcom noted that, in general terms, the approach of setting a RV "has merit" and that there was a large measure of agreement to this approach from other respondents. We recognise that there are difficulties in setting the RV for the local access network assets, but these are not insurmountable - these issues have been addressed by other regulators, and by the MMC and the Competition Commission in the past.

It is regrettable that Ofcom has used the term "RAV" to describe its preferred approach, which is to value access assets on the existing CCA basis, abated by the difference in today's HCA and CCA carrying values for the pre-1997 assets. This approach has little in common with the approaches taken by other regulators in setting RAV, which have largely centred on market values. Ofcom's approach is a confusing hybrid that weakens the incentive properties of both pure CCA and pure market value related RAV. We believe that using current market value could in fact be used to determine an appropriate RAV, and this is likely to be considerably higher than the result of Ofcom's mix-and-match approach.

At **no time** since 1994 would the market valuation approach to setting the RV suggest any downward revaluation of BT's assets is justified. BT's market value has always exceeded both the CCA and HCA carrying value of its assets. Shareholders have been purchasing BT shares at more than the per share CCA asset valuation; they have, quite reasonably, not been expecting Ofcom to intervene by re-valuing any of the underlying assets using a much lower HCA basis. As we explain elsewhere in this response, it is not credible that shareholders' reasonable expectations would ever have been that Ofcom would move away from CCA asset valuations and reduce asset values by between the 4.8% and 14.2% quoted in Part 2. Such a downward discontinuity represents an expropriation against fair and valid expectations.

### *The importance of the "regulatory contract" cannot be ignored*

A key constituent of any regulatory regime is the implicit "regulatory contract" which sets the basis on which companies invest in the industry and on which shareholders keep their funds

in a company. The contract has a role whenever firms sink resources into long-life assets, such as access infrastructure, which are subject to short- to medium-term regulation, such as a four year price cap. One of the fundamental tenets of regulation, recognised by the Competition Commission and other UK Regulatory Agencies, is that a regulator should not change the rules once investment is in the ground. The reason is simple – firms will not freely invest if they believe that an adverse "regulatory adjustment" is likely at any time in the future that may materially undermine the value of their investments.

A sustainable regulatory approach to encourage infrastructure investment and infrastructure competition, requires among other things consistency over time. Other UK regulators have, as far as possible, used objective and long-term accounting methodologies in their regulation of networks.

It is not just BT's shareholders who are affected by regulatory uncertainty or a belief that a regulator may act in an unpredictable manner. Telewest and NTL have built local access networks which give them access to over half of UK households. Such investments have been made on the basis of the implicit aspect of the "regulatory contract" that regulatory prices would set the correct economic signals for entry, i.e. that BT would continue to be regulated on a CCA basis. To reverse this policy - even partially - would be to impose a "windfall loss" on the owners of competing access networks and the effects of a step change by Ofcom towards a lower HCA-based valuation would result in these investors suffering a consequent **under**-recovery going forward.

Rather than protecting them, it is clear that Ofcom's proposals will have real adverse consequences for UK consumers. Investors will perceive that regulation of the telecommunications industry in particular makes investment more risky in the UK as unpredictable regulatory adjustments may be made which could have a material effect on entrants' business plans. By adding regulatory risk for all players, UK consumers will ultimately enjoy less choice and/or higher prices in the medium to long term.

### *Asset valuations must be symmetrically consistent with shareholder expectations of the market*

More detailed analysis of the economics of valuation of assets is highly relevant to the current proposals. In Annex 2 we have analysed the economic rationale for valuation of assets in competitive and monopoly markets, and set out the options available to regulators.

It is clear that regulators cannot set prices in isolation from consideration of asset values, and neither can they ignore shareholders' expectations of future market conditions. The risk of "downside" outcomes that curtail returns on investments needs to be taken into account in setting regulated prices. This can be done in a variety of ways, such as adjusting the allowed rate of return on capital employed or by adjusting the valuation of the underlying assets *upwards*. Only by making such adjustments can the regulator successfully mimic the influence of a competitive market on prices and shareholder behaviour.

This analysis provides further strong evidence that Ofcom's proposals to reduce the value of the local access copper and duct runs counter to effective regulation and further increase the financial risk that the regulatory regime poses to shareholders in network operators including BT. If anything, given the acknowledgement of the future role of wireless in local access, this analysis supports an *increase* in the regulatory asset values that should be used in setting access prices.

### *There is no objective evidence to justify changing asset lives*

The second consultation document proposes that the lives of copper and duct assets should be lengthened from 15 to 20 years and from 25 years rolling to 40 years straight line respectively. Ofcom appears to have based these proposals entirely on the views of respondents to the first consultation. This does not in our view constitute objective evidence that the changes are warranted. These respondents are all companies which have a commercial interest in the imposition of longer asset lives as this will reduce their input costs and hence further their commercial interests. Indeed the Cabinet Office Code of Practice on Consultation is quite clear that, when conducting consultations, government departments and agencies should not, "simply count votes when analysing responses." Yet this is what Ofcom appears to have done as it has produced no other evidence to support the proposed changes.

We remain of the view that the lives of both copper and duct should remain as they are, using the current accounting treatment. Despite assertions by Ofcom in Part 2, BT has not proposed lengthening the assumed life of copper assets to 20 years. However, an independent study of asset lives completed by Ernst and Young[5] suggested that our existing life of 15 years is approximately central to the range used by our peers. In relation to access copper Ernst and Young reported that *"60 per cent of the European respondents use an asset life of 16 to 20 years"*. Ofcom has not suggested why the UK - which has one of the most dynamic telecommunications markets - should be considered at the extreme end of this range.

Indeed, Ofcom recognises that in the medium to long term (by which it means in 5 years' time or more) the emergence of wireless technologies is a distinct possibly and that one of Ofcom's central policies is to encourage wireless access services over such a timescale. It is not consistent to lengthen the assumed asset life whilst at the same time suggesting that the development of competing access networks is possible within just the first half of the current life (i.e. 7-8 years) and around one quarter of the proposed extended economic life. This imposes too much risk that BT will not be able to cover its efficiently incurred costs incurred in the delivery of local loop services.

Similarly in the case of duct, BT, like many other telecoms companies, is of the view that there is some uncertainty about the impact that mobile access technologies are likely to have on fixed communications . In this environment it seems less than prudent to suggest duct will have a certain commercial value for 40 years. BT continues to believe that use of a rolling 25 year life is reasonable and prudent whilst this uncertainty exists.

Finally, we do not understand why Ofcom considers that BT's 21CN plans have a bearing on this issue. Although we are undertaking trials of a number of technologies, including access fibre, it is likely that 21CN investments will have limited impact on the local access network, which will continue to be based largely on copper, unless the economics of widespread fibre deployment radically improve. Were this to happen, then of course the economic life of copper assets would be reduced if copper was substituted by fibre to the cabinet or fibre to the home. Certainly, BT's 21CN proposals do not in any way justify *increasing* the asset life of copper assets.

In conclusion, there is no objective basis or evidence which justifies extending the lives of copper and duct assets.

[5] See summary at http://www.ey.com/Global/content.nsf/Australia/TCE_-_Publications_-_Downturn_impacts_Telco_assets

## C. Responses to specific questions

**Question 1: What is your opinion of Ofcom's approach to the establishment of the appropriate regulatory value?**

It is important that prices for regulated products and services are based on underlying asset values that properly reflect the economic value of the assets and of the services. It is right that the basis of valuation is periodically reviewed by the regulator to ensure that the basis remains appropriate. It is, however, essential that there is a strong continuity and consistency of regulatory approach, to maintain incentives to invest and maintain networks, and to reward investors. Changes to the basis of valuation must not amount to curtailment of returns or expropriation of shareholder value. This is especially important for investment in long-life assets that should be subject to a regulatory regime that ensures reasonable certainty that investments will be able to achieve returns that are not subject to unpredictable changes in regulatory objectives.

The regulatory understanding in 1997 was that future regulation would be on the basis of CCA. Setting a regulatory value for assets in a retrospective way, which is effectively what is being proposed, is inappropriate and increases regulatory uncertainty going forwards. Setting a regulatory value for the 1996/7 assets using anything other than CCA is not appropriate, and inconsistent with the regulatory "contract".

We still strongly believe that CCA is the correct basis for valuation of the local access network assets. The CCA valuation must be adjusted for regulatory purposes to take full account of important and material assets (fully written down assets and drop wire) that have economic value.

**Question 2: What do you believe is the correct depreciation treatment for the remaining 1996/97 assets?**

Remaining 1996/7 assets should continue to be valued and depreciated on a CCA basis, using the same depreciation basis as used to date. The current carrying value (on a CCA basis, the Net Replacement Cost) should be depreciated over the remaining asset lives with no change in policies.

**Question 3: What is your opinion of the principle of correct incentives for entry as applied within this consultation?**

We remain of the view that prices should be set that incentivise new entrants to invest in infrastructure (since this is the most likely area where technological advances will deliver solutions that benefit consumers and the economy as a whole), and at the same time reward current infrastructure providers such as BT and cable companies for the investments already made, and incentivise them to maintain and enhance the capabilities and reach of their existing networks.

Ofcom is proposing changes that would seriously weaken current incentives and may slow down the development of important technologies in the UK, by materially under-valuing the economic value of BT's local access network, and because of the impact on access prices the economic value of other local access networks too. NTL's evidence to the Trade and Industry Select Committee is relevant here[6]:

[6] Trade and Industry - Thirteenth Report, published 22 March 2005 See: http://www.publications.parliament.uk/pa/cm200405/cmselect/cmtrdind/407/40705.htm

*"12. NTL warned us of the need for caution in the regulatory treatment of these enduring bottlenecks. They pointed out that cable already provided infrastructural competition over the last mile to BT's local loop in much of the country and highlighted the dynamism that they thought this has brought to the market. The danger was that, having identified the access network as an enduring bottleneck, Ofcom would attempt to mimic competition and regulate to keep access as cheap as possible. In keeping the price low, and limiting BT's returns, NTL argued, regulation risked deterring BT from investing further in their access network and, perhaps more importantly, deterred investment in alternative access networks by competitors. Consequently, there was a risk that in identifying and regulating for economic bottlenecks, Ofcom would ensure, and indeed reinforce, their continued existence. To add to those concerns, NTL worried that Ofcom have not set out a clear methodology for identifying an enduring economic bottleneck."*

**Question 4: Do you believe that these criteria are appropriate? What other criteria, if any, would you apply?**

The criteria listed in paragraph 3.38 are appropriate, but we do not believe that the proposals Ofcom is making satisfy them - in particular the proposals will act directly against criteria number 6 *"create scope for market entry that could, over time, remove economic bottlenecks"*. Any regulatory approach needs to balance this set of potentially conflicting criteria, but it is clear that in fact the proposals will contribute to none of them in any positive way:

| **Criterion** | **Impact of Ofcom's proposals** |
|---|---|
| 1. Promote competition at the deepest levels of infrastructure where it will be effective and sustainable; | Will reduce the likelihood of effective competition by disincentivising investment in local access networks, either using existing fixed technology (copper, co-axial cable, fibre) or emerging technologies (e.g. wireless, powerline). |
| 2. Focus regulation to deliver equality of access beyond those levels; | Will have no impact on delivering equality of access. Setting lower asset values may reduce prices to end customers but this in itself has no impact on equality of access to the local access network. |
| 3. As soon as competitive conditions allow, withdraw from regulation at other levels; | The proposals have no impact on the ability to withdraw from regulation in any area. If anything these proposals extend detailed regulatory intervention to explicitly include all wholesale access services, even in those parts of the UK where there is genuine competition (e.g. cable company areas). |
| 4. Promote a favourable climate for efficient and timely investment and stimulate innovation, in particular by ensuring a consistent and transparent regulatory approach; | The proposals will disincentivise investment of all kinds relating to local access, by depressing prices and reducing the scope for profitable investment. The regulatory approach inherent in the process Ofcom has undertaken and the proposals in the current consultation document highlight the inconsistency and unpredictability of the regulatory regime, and the proposals, being based on an arbitrary reduction in the value, purporting to be a "correction" of a previous regulatory regime weakens any assertion of transparency. |

| Criterion | Impact of Ofcom's proposals |
|---|---|
| 5. Accommodate varying regulatory solutions for different products and, where appropriate, different geographies; | The proposals ignore the clear differences between major cities and cable areas, where real access competition exists, and the rest of the country. No attempt has been made to develop different approaches for these clearly differentiated geographic markets. |
| 6. Create scope for market entry that could, over time, remove economic bottlenecks; and | See 1 and 4 above - Ofcom's proposals are likely to have the opposite effect. |
| 7. In the wider communications value chain, unless there are enduring economic bottlenecks, adopt light-touch economic regulation based on competition law and the promotion of interoperability. | The proposals have no impact on this criterion. |

**Question 5: Do you agree that Ofcom should adopt 20 years as the appropriate book life for copper cable?**

**Question 6: Do you agree that Ofcom should adopt a straight line depreciation of 40 years as the appropriate book life for duct?**

We do not agree with Ofcom's proposals to change the book lives of copper or duct assets.

Accounting rates of depreciation are intended to match the cost of an asset with its useful life, defined as the period over which the entity expects to derive economic benefits from that asset. Determining asset lives is by no means an exact science, and will reflect the judgement of the management of the company owning the asset. BT sets its asset lives with regard to a number of factors consistent with authoritative accounting literature, including estimated future economic benefits, comparison with best practice in other telecommunications companies, and the possibility of technological obsolescence. BT's management is best placed to determine the most appropriate useful lives for the company's assets, and accordingly we believe Ofcom should abide by that view, as used to prepare BT's statutory and regulatory accounts.

Ofcom certainly should not be making any proposal based on what amounts to a survey of companies that have a vested interest in BT using longer asset lives. There is some evidence that in some areas of the UK new technologies (e.g. wireless networks) may, in the foreseeable future, in practice reduce the economic lives of copper-based networks. Basing asset lives on the views of parties who have a clear interest on BT depreciating assets over a longer period is hardly based on objective evidence.

**Question 7: Do you agree with Ofcom's approach to the issue of spare capacity?**

We agree that spare capacity is a complex issue and that determining the "most efficient" level of spare capacity is both difficult and subjective, and we agree with Ofcom's approach. Assessment needs to take account of a number of factors including network resilience requirements, likely future demands, the cost efficiencies of investing in 'spare' capacity and the cost of having to add new capacity in future. We are not able to comment on the range of 10-20% spare capacity suggested by other respondents. However, we note that there is a

danger that the views of third parties who clearly have an interest in BT being permitted lower levels of spare capacity will understate the appropriate level of spare capacity required.

**Question 8: Do you agree that Ofcom should continue to use the labour rates as used by BT in LLCS and that the existing method of indexing these each year should be retained?**

We agree with Ofcom's proposed approach for continuing to derive labour rates using 1994/95 BT contract prices indexed forward to the valuation date.

As explained in our response to question 12 in Part 1, the labour rate for use in valuing assets should be the one that is applicable to replacement of a large scale build in the 'normal course of business' as per Current Cost Accounting principles. BT's approach accords with this principle i.e. these rates are designed to mirror the rates that would apply in the case of a large scale build which a new and efficient entrant would need to undertake. It should be noted that BT's current contractual rates are much higher than the unit rates used for valuing the access network, as these rates reflect the low volume ordering profile and the reactive nature of the existing work which is subject to premium rates being charged by the contractors.

**Question 9: Do you agree that Ofcom should not apply an abatement for cable modularity given the analysis results?**

We agree with Ofcom that there should be no abatement for cable modularity.

BT believes that it is most appropriate to reflect in the valuation only those cables which are commercially available, and for which prices exist. This is in line with the principles of Modern Equivalent Asset approach used in CCA.

It should also be noted that it is not possible to predict changes in technologies or product configurations and it is likely that any new entrant would face similar issues that they would not be able to do anything about after the event, except for new build.

**Question 10: Do you agree that Ofcom should not change the existing method by which the costs of shared duct are allocated between access and core?**

Yes, we agree that there should be no change to the method of cost allocation. The alternatives are either unworkable, arbitrary or would introduce unwarranted market distortions that bore no relationship to economic values. The current approach is a pragmatic and relatively cost-effective way of allocating costs.

**Question 11: What is your view of applying an efficiency adjustment to the access network operational costs?**

At this stage it would not be appropriate to apply any efficiency adjustment to operational costs. Such a step should only be taken once any scope for efficiency improvements has been properly assessed, using suitably detailed studies of how BT manages its network and what scope there is, given practical constraints and existing network topology, to improve approaches. Consideration of best practice from other telecommunications operators world-wide would be appropriate, provided the evidence was interpreted in the light of conditions applying in the UK.

Benchmarking efficiency studies need to be interpreted with great care, since they are notoriously difficult to "normalise" for inherent differences between firms under consideration.

Local factors, such as inherited network design, transport networks, local planning laws or soil types, can make substantial differences between operators' apparent efficiencies, and superficial comparisons with apparently "top quartile" operators can be extremely misleading. It is important to determine the most appropriate explanatory variables for any implicit cost function against which efficiency is being judged.

Nonetheless we accept that benchmarking, combined with other evidence, can be useful. If the NERA study referred to in paragraph 4.67 of Part 2 concludes that there is scope for cost reductions we will expect to see reference to specific aspects of operations that should be improved. Simply saying that one firm is more costly per unit than another is not in itself proof of the scope for any particular level of efficiency improvement.

**Question 12: What is your view of Ofcom's analysis of this approach? Do you believe that it is valid to use an optimised copper network, although hypothetical, to inform the valuation process?**

In our response to the Part 1 consultation, we argued strongly and in detail against the applicability of this approach for valuing BT's Access network or setting prices. Our thinking on this remains unchanged. We note that *"Ofcom does not believe that this approach should be relied upon to fix the valuation of BT's copper access network";* this supports our view.

As referred to in our Part 1 response, any new entrant would face the same issues as BT over how to dimension its network to most efficiently meet demand. Forecasting 'error' - which includes the inability to predict perfectly demographic or technological changes - means that no network can ever be fully efficient in the way that the WIK/Ofcom approach implies. In addition, it takes many years to build a network as extensive as BT's. A new entrant could not simply build a new network overnight - over the years it would take to build, apparent 'inefficiencies' would arise that could not be avoided, the result of fluctuating demand levels and associated forecasting error, demographic changes and technical advances and competitive impacts that cannot be predicted with certainty. A 'fully efficient' design is wholly theoretical and cannot exist in the real world.

Our views are also supported by the US Federal Communications Commission who, in its 2003 review of Unbundled Network Elements (UNE) pricing, stated that "*the UNE pricing methodology, while forward-looking, must be representative of the real world and should not be based on the totally hypothetical cost of a most-efficient provider building a network from scratch.*", and, most significantly, that "*an approach that reconstructs the network over time seems to be more appropriate than one that assumes the instantaneous redeployment of 100 percent new technology*".[7] The FCC also said, in the same document: *"In the real world, however, even in extremely competitive markets, firms do not instantaneously replace all of their facilities with every improvement in technology. Thus, even the most efficient carrier's network will reflect a mix of new and older technology at any given time."*[8]

If such an approach was to be used to inform the valuation process, the results from the WIK study would need to be tested with larger, statistically robust samples, taking account of a suitably representative range of exchange areas, to ensure that the conclusions are meaningful. Until the analysis satisfies at least similar statistical confidence levels to those achieved by BT, no meaningful conclusions could be drawn.

[7] *"Notice of Proposed Rulemaking"* (FCC 03-224), Federal Communications Commission, Released September 15, 2003, para 68
[8] *ibid,* para *50*

**Question 13: What is your view of Ofcom's analysis of this approach? Do you believe that an optimised network using modern technology is an inappropriate basis for informing the valuation of BT's copper access network?**

We agree with Ofcom's conclusions that it would not be appropriate to consider an optimised network based on modern technology (specifically fibre to the PCP with active PCPs). We continue to consider the potential use of such modern technology , and have undertaken limited trials, but, as Ofcom's analysis demonstrates, at this time such an approach is uneconomic. The potential impacts on current Local Loop Unbundling (LLU) products would be particularly problematic.

Also see our response to Q12 above.

**Question 14: What is your opinion of Ofcom's approach to calculating the overrecovery (or under-recovery)?**

We do not accept that there is irrefutable proof of what Ofcom describes as an "overrecovery". Ofcom has provided illustrative justification for their view, but there is great difficulty in applying this simplistic illustration to the real-world attributes of BT's network and its service pricing. In practice, pricing is not of individual network elements but of the services that use them. To date PSTN line rental has been the dominant service provided using access copper and duct, and this service has been loss-making. Ofcom has presented no quantified evidence that BT actually enjoyed higher returns than it was entitled to under the regulatory regime put in place by Oftel from 1997. The returns BT has achieved since the change from an HCA to a CCA basis have been consistent with the regulatory 'contract' in place at the time; BT had a reasonable expectation that returns would be calculated on a CCA basis, and we believe Ofcom is incorrect to assert that there has been an under or over-recovery of any sort.

Furthermore, it is likely that returns prior to the change to CCA amounted to an "under-recovery", since allowed returns were based on HCA asset valuations but using a WACC based on a CAPM approach that requires a method of valuation that is close to or the same as market value. BT's market value prior to 1997 was consistently higher than the HCA valuation of net assets, indicating a systematic understatement of allowed returns.

If it is difficult to conclude on the extent of any under- or over-recovery of costs in the past, then it is still more problematic to base future pricing decisions on the possibility of over-recovery at some point in the future.

**Question 15: What is your opinion of Ofcom's proposal to disallow the over-recovery between 2004/05 and 2009/10?**

As per our response to Question 14 above, we do not believe the concept of an "over recovery" in relation to assets held at the time of the change from HCA to CCA is meaningful. It would be wholly inappropriate to change the basis of regulation in such a way that BT should not be permitted returns on these assets on a continuing CCA basis. Regardless of the fact that the regulatory 'contract' was, from 1997, to be on a CCA basis, there is no evidence that BT's local access network assets are valued at anything other than an economic value. Ofcom has not presented any evidence that BT's assets are 'over-valued' in any sense: the desire to reduce the value has no basis in economic fact or evidence that such a reduction in valuation will increase consumer welfare.

At first sight the arguments used by Ofcom to justify the reduction in return appear to have some logic, but this illusory. It is not meaningful to separate out these assets from the whole

set of assets used to provide local access services, and not appropriate to create an artificial "mix and match" approach to asset valuation simply to ensure that the regulatory asset valuation is reduced.

**Question 16: What is your view of adopting a proposal which leaves the existing approach unchanged?**

**Question 17: What is your view of adopting a proposal which applies the adjustments described to the existing approach?**

We continue to support a wholly CCA-based valuation methodology. Of the proposals made, Proposal 1 is the least inappropriate, notwithstanding the fact that there is no evidence that lowering the value of assets is necessary or in the best interests of consumers.

**Question 18: What is your view of adopting a proposal which applies the adjustments described in proposal 1, plus an efficiency adjustment derived from the WIK Consult work, to the existing approach?**

We do not believe this would be an appropriate approach. Any apparent inefficiency identified by the WIK analysis is very likely to grossly overstate the potential for reduction in costs. As we pointed out in our response to the Part 1 consultation, there are many factors that would lead to higher costs in practice, that could not be avoided even using modern techniques and optimised route planning.

It would be particularly inappropriate to abate value in relation to lines "stranded" by competition: firstly these lines may well come back into use because of normal competitive "churn" and secondly the regulatory regime should not simply remove economic value where competition that the regime itself has encouraged has been successful. There is no evidence of permanent diminution in value of these assets, and it would therefore be wholly inappropriate to eliminate their value from the asset base.

Spare capacity, as Ofcom itself admits in para 4.29, is a complex issue and it is by no means certain that any particular level of capacity is excessive. We do not believe that the WIK analysis has demonstrated that there is a need for an adjustment to the level of spare.

**Question 19: What is your view of adopting a proposal which bases the valuation on that of a hypothetical modern equivalent network using an optimised deployment of duct and copper cables?**

We do not believe this would be an appropriate approach. See our response to question 13 above.

**Question 20: What is your view of Ofcom's proposal to use Proposal 1 as described above?**

We do not believe that a change from the current CCA basis is justified or appropriate, and we therefore support Proposal 0. Proposal 1 is the least inappropriate approach compared with Proposals 2 and 3.

We cannot agree with Ofcom's assertions under paragraph 6.22. Firstly, as we have demonstrated in our answer to Question 4 above, Ofcom's approach and conclusions do not align in any respect to their own criteria. Furthermore, there is no evidence that Ofcom's underlying objectives in relation to this consultation really do "further the interests of

consumers", since the proposals Ofcom makes will reduce incentives to invest in technologies that may ultimately reduce costs and deliver innovative and economically important services.

We do not accept that Proposal 1 "balances the interests of all stakeholders", since it also devalues the investments made on behalf of shareholders in all UK access networks, including cable companies as well as BT. Further, Proposal 1 does not minimise intrusive regulation and regulatory burden - the only way to achieve this is to maintain the current regulatory contract and continue CCA valuation as a sound and consistent basis for asset valuation.

The proposed adjustments for assets held in 1996/7 have no basis in either economic principle or CCA mechanisms, and are entirely inconsistent with the CCA approach that Oftel committed to in 1997. This proposed abrupt change from an agreed approach that has been used for the best part of a decade adds to ongoing regulatory uncertainty (whether implemented or not). Shareholders and other potential investors will be concerned that Ofcom may take a similarly destabilising approach to another aspect of the regulatory regime, with little or no basis in underlying economics.

---

*NB: The following questions were raised in the supplemental document published by Ofcom on 26th April 2005*

**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?**

It is important to clarify terminology here. The RAV referred to in Question 21 is the valuation that Ofcom proposes to attribute solely to the copper and duct assets that were *in situ* at 1st August 1997 (subject to removal of those assets that have been fully depreciated and therefore written out of the Fixed Asset Register as at today's date). Ofcom is proposing that the assets added since that date are to be subject to the same CCA treatment as hitherto. This use of the term RAV is different to that used in other regulated industries, where the RAV refers to the entire group of assets subject to regulation.

We remain of the view that the only correct value for the pre-1997 assets is the CCA valuation, in accordance with the approach introduced by Oftel and validated by the regulator numerous times subsequently. Our arguments against revaluation have been set out elsewhere in this document and in BT's response to the first consultation document on this topic.

However, if Ofcom persists in the adoption of their proposals, we believe that the RAV should be based on the closing HCA net book value of the pre-1997 assets as at 31st March 2005, and that this basis should be used for regulating relevant local access products in the financial year 2005/6 onwards. We explain in our answer to Question 22 (below) our view regarding the inappropriateness of indexation of the net book value as at 31/3/2004.

In other regulated industries the concept of a RAV aims to ensure that the basis for determining allowed returns is consistent with the price equity investors paid for the regulated company. As a result of this regulators have used the flotation (or post-flotation) market capitalisation of the companies as a starting point, on the basis that investors should not expect to be rewarded for anything other than the value they placed on the company. We are not aware of any regulator who has used HCA book values as a basis for the RAV.

The fact that BT's flotation was many years ago is not, as Ofcom implies, a reason to ignore the market value of BT in the context of setting a RAV. Indeed current and recent market values are highly relevant as a means of testing whether the outcome of Ofcom's proposals is logical and fair to investors. Whilst we accept that the value the stock market places on a company is subject to many complex factors, there is undoubtedly valuable evidence concerning the economic value that investors believe the underlying assets have.

In BT's case at no point in the period from 1993 to the present day has the market capitalisation been less than either the HCA or CCA net asset values. Ignoring the effects of the "dot-com boom" between 1998 and 2000, the Market to Asset Ratio (MAR) has been considerably above one. This contrasts with the other regulated industries, which had asset book values considerably higher than their flotation values. Although in most other industries regulators made reference to flotation valuations in determining RAV, the MMC's investigation into BG in 1993 made use of more recent market values, recognising the relevance of the current economic value shareholders put on the underlying assets. In particular the MMC considered the MAR in 1991 and 1992 - although they referred in their report to the MAR at privatisation, their conclusion regarding the RAV in 1993 was linked to these more recent MAR values.

The impact of Ofcom's proposals is that the carrying values of BT's local access network assets would fall considerably, further increasing the gap between the market capitalisation and the value of the underlying assets. Our view is that this confirms that Ofcom's approach is flawed and inconsistent with other regulators.

**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?**

The following comments should not be taken to mean that we accept that Ofcom's proposals are appropriate - in particular we do not accept that there is any justification for reducing the value of the local access network assets.

**Determining the starting point**

If Ofcom insists on implementing its proposals, we believe that the starting point for the price control of local access network services should be the actual asset valuation at the end of 2004/5 - ideally in accordance with the finalised, audited financial statements for the year ended 31st March 2005. This information is scheduled to be finalised by the end of May 2005 (the audit of these figures will be complete by August 2005). Ofcom should use actual data for setting the starting point of any price control.

In the absence of finalised data, Ofcom may wish to estimate the data and work forwards on that basis, but if this is done a correction mechanism should be built in to adjust the cost stack, and any prices based on it, once actual data becomes available. Indexation forward from 31st March 2004 is not only unnecessary but to do so could also result in inappropriate and confusing "holding gains", which are not relevant to setting a RAV.

We do not therefore believe it is appropriate to index forward the RAV to determine the starting point. Only actual year end figures should be used.

**Future indexation**

Going forward, we recognise that in other UK regulated industries a general inflation index (in practice RPI) has been used to index the RAV, and that using a relatively stable and predictable index has some advantages in the context of setting periodic price controls. However, there are several reasons why RPI would not be appropriate for BT's local access

network assets, and we strongly believe that all local access network assets should be indexed forward using CCA indices.

Copper is a highly significant factor in the valuation of BT's local access network. The total asset valuation should continue to give appropriate signals to potential investors in local access infrastructure, and should therefore reflect the MEA of the assets. Therefore the relevant index to use for the copper assets (whether pre- or post-1997 assets) should continue to be the copper-specific index. Other regulated industries have not been exposed to such significant and volatile inputs in their RAV, and regulators have not had to consider the impact on potential competitors in distribution/access networks.

The other main element of the local access network valuation is labour rates, which affect the duct valuation. Average labour rates do not follow RPI - wage inflation has tended to be higher than RPI. As for copper, to ensure the right signals continue to be given for potential local access investors it is therefore important that the labour rate index continues to be used.

Finally, the RAV for the pre-1997 assets is only part of the total value of assets for the local access network. Using different indices (say RPI for the pre-1997 assets and input-specific indices for the post-1997 assets that continue to be valued on a CCA basis) would introduce unwelcome and unnecessary complexity and inconsistency. Ofcom has made their support for the ongoing use of CCA very clear, and the only consistent approach is to use CCA indexation for all the local access network assets, including the pre-1997 assets.

# Annex 1: A rejoinder by Dr Eileen Marshall CBE

*Please note that the rejoinder document written by Dr Marshall is in a separate portable document format (PDF) file.*

# Annex 2: The Economics of asset valuation in competitive and regulated environments

- Ofcom has said that it expected competition to act as a long term restraint on BT's prices, but that as this has not happened it needs to act to stop an "over-recovery" of costs by BT.
- This Annex explains why a regulator should either **always ignore** the implications of unanticipated events on asset values *or* should **always a**ct in an ex-post way to correct for events which lead to an over-recovery or under-recovery on incurred costs. If adjustments are only going to be applied when there are unanticipated gains then, on average, there will be an under-recovery of efficiently incurred costs.
- If, however, regulation is only to act when there is an over-recovery of costs, then the standard rate of return needs to exceed the cost of capital so that *ex-ante* there is the expectation of cost recovery. We provide a simple example of this effect.

**Introduction**

*"…if investment and innovation are important for the development of the sector, ways must be found to reassure investors that returns will not be 'regulated away' after the investment is made.* ***Commitment*** *by the regulator and* ***consistency of regulatory actions*** *are important in this context"* [9]

1. In its Consultation Document "Valuing copper access: Part 2 – Proposals", Ofcom argue that BT would over-recover its costs from the switch from HCA to CCA accounting in 1997 unless it intervened and reduced the regulatory valuation of copper loop assets. It therefore proposes to revalue these assets in order that the future component of this gain is removed. No longer would the Regulatory Value of the assets be equated to their replacement cost.

2. In BT's view the existing body of consultations, arguments and conclusions do not meet the evaluation criteria set out in paragraph 3.39 of the Ofcom Part 2 consultative document in that they are:

   - not simple and transparent,
   - do not minimise regulatory uncertainty moving forward, and
   - not underpinned by a sound economic rationale.

3. In this Annex, we concentrate on the third of these criteria. We do not consider, however, that this consultation has been "simple and transparent", a view which is confirmed by changes in the approach between the Part 1 and Part 2 consultations and that, even now, there is a divergence between the factual statements on quantification made by Ofcom and the purely illustrative evidence provided to support the statements made.

**The determination of value**

4. The value of an asset in a competitive or monopoly market is determined by the prices obtained from the services, or products, supplied by the asset. Asset valuation is therefore price reflective rather than asset values being a determinant of prices.

5. In a competitive market the value of assets only has a direct relationship to costs at the time the decision to invest is being made. Once the asset has been sunk, then valuation is determined by the market, not the actual costs incurred.

[9] Paragraph 4.7, Ofcom Phase 1 Consultation Document, emphasis added

6. In a regulated monopoly market the value of assets may relate to what was paid for them if this is the basis on which regulated prices are set (and therefore prices and returns are determined). However, the key determinant of an asset's value is what the regulator allows the asset to earn.

***Value in a competitive market***

7. Investors in a competitive market will invest until the *expected* returns just exceed the current (replacement) cost of the asset. Having invested, the market value of the asset will not always (indeed seldom) equal its initial cost (that is, its initial replacement value) because actual returns will not turn out as expected. Deviations between initial expected net income (and therefore asset value) and current expected net income (and therefore asset value) are likely to be common - indeed the rule. Asset values will then not correspond to their (depreciated) incurred cost.

8. At the time of investment, an investor will take a view on the possibility of gains and losses that diverge from the expected value. If he or she considers that there is a risk that a loss is more likely than a gain, he or she will require a higher price for the services of the asset than would otherwise be the case. If gains are more likely than losses, investors will invest even if current prices for the services of the asset are below those implied by replacement costs – the carrot of some good news about future asset valuations will justify the investment.

9. 'Economic accounting' will take account of these changes in the value of existing assets through incorporating capital gains and losses. If economic (market) values are to be reflected in Current Cost Accounts, inter alia, such gains and losses must be recorded as accruing to the asset holder.

***Value in a regulated monopoly market***

10. In a regulated monopoly market, value is again determined by prices, but as the regulator determines those prices it is effectively determining both value and prices simultaneously. (In a partially competitive market, which is nevertheless regulated, there will be market constraints on the extent to which the regulator can determine prices and vice versa.) In effect, in a regulated monopoly market it is the regulator who determines "economic value" of an asset to its owner.

11. To illustrate this point, if the regulator decides to focus solely on the short term interests of consumers, *reductio ad absurdum,* the value of sunk assets could be driven to zero without necessarily incurring any immediate costs, while delivering considerable immediate benefit to consumers. What then should be the bounds of reason and reasonableness on the regulator's discretion?

12. The answer implicit in the Ofcom quote at the start of this Annex is that it is the consequential impact of such a regulatory action which bounds such a decision. Setting regulated prices which do not permit the recovery of sunk costs would not lead to discontinuation of service, as the assets are sunk, but it will discourage any further investment. Even the possibility that such action *might* be taken has to be addressed if investors are to have assurance. Good regulation must therefore address the dynamic effects of its interventions, or the externalities of one regulatory decision on other investment decisions which may be altered as a result.

### *Regulatory value and the "competitive standard"*

13. Regulation normally by design attempts to mimic the outcome of a competitive market and the notion stated by Oftel and Ofcom in the past is that CCA valuation represents such a competitive standard. In particular, CCA-based charges give appropriate signals for investment as they reflect the costs which a new entrant would incur. However, life is not as simple as this. David Mandy (2002) has noted:

    *"it is erroneous to think of a competitive equilibrium price as the minimum of some long-run average cost curve, because the cost curve will shift before the capital costs are fully recovered. In such a dynamic environment, the concept of competitive equilibrium prices must be modified to the notion of a dynamic price sequence with the property that a price-taking firm exactly recovers its costs over the life of the* asset."[10]

14. That is, anticipated price dynamics – how prices will move in the future - enter into decisions about investment and hence how current market prices are derived. Current prices depend on the future and on expectations of the future. The often cited notion that entrants' costs determine prices is overly simple in these circumstances if only a static ("certainty") view is taken or if the "dynamic price sequence" is not accurately forecast. In particular, the risk of a future price fall (or increase) within an asset's life, due say to a change in competitive conditions, must be offset by an increase (decrease) in prices now to ensure that investment in the asset is profitable over the life of the asset. We provide an example of this effect later in this Annex.

15. Putting it another way, "windfall" gains (and losses) are therefore routine in competitive markets, and arise whenever circumstances change relative to the basis on which initial depreciation charges were set. A rise in the price of an input required for investment (say copper), or a "surprise" development in terms of technology, can result in an upward or downward revaluation of existing assets in a competitive market. In Ofcom's terminology there might then be an "over-recovery" or an "under-recovery" against the actual costs incurred. These ought therefore be expected to occur in a situation in which the regulator is applying a competitive standard.

### *Possible regulatory regimes*

16. The regulator should seek a regime that takes into account the need to preserve investment incentives mindful of the fact that regulatory valuation will always be an imprecise art. All regimes centre on providing, by whatever means possible, a credible commitment not to expropriate sunk investment. The regulator has two broad options:

    - either "fix and stick" with a regulatory value that always allows cost recovery but no more; or
    - periodically revalue existing assets according to a rule that assures investors of cost recovery *in expectation*.

[10] David Mandy. March 2002. "Pricing network elements when costs are changing". *Telecommunications Policy* 26.

These alternatives are now considered. In this paper we concentrate on how these different approaches provide appropriate investment incentives while meeting a requirement to control prices in markets in which competition is not yet developed.

**The "utility" approach to revising regulatory value over time**

17. The standard UK "utility" approach to asset valuation (also used in may other regulatory jurisdictions) is designed to encourage good industry investment decisions without requiring continuously updating asset values. The approach never requires revising the (real) regulatory value of assets already in existence. Additions to the asset stock are made by adding in the cost of approved investments and subtracting depreciation. Asset values are updated each year by the rate of inflation. There are no revaluations. The method and its application are described in the associated Annex by Dr Eileen Marshall.

18. This rule has the very desirable property that it assures investors of cost recovery irrespective of the assumed depreciation profile (ie David Mandy's dynamic price sequence). The only conditions needed for this result are that the assumed cost of capital is the correct opportunity cost of capital and that market demand does not constrain prices below those allowed by regulation at any point in time. There is thus no possibility of an upside "windfall" gain although a downside loss may still be possible if there is a prospect of competition within the assumed economic life of the assets involved.

**Example 1**

19. In the UK water industry this rule has increased in importance as the regulatory capital value (RCV) has become enshrined in bond covenants. From 2002, Ofwat began publishing the future regulatory capital value (following the precedent established by Ofgem in 1999).[11] Based on interviews with investors, Smith and Hannan (2003) found that:[12]

> *"Both investors and rating agencies attach strong importance to the stability of cashflows in the sector and their predictability. The RCV is seen as representing the NPV of future cash flows."*

20. Stability and predictability come about via a commitment not to make one-off changes to the RCV.

21. The utility approach also applied in many instances in the US where utility investors are to a considerable extent protected from regulatory pressure to deny cost recovery by the US Constitution, and consequential interpretations of the Constitution by the Courts. A central feature of the regulatory system is based on the 1944 Hope Natural Gas Company decision which assured investors of an adequate return after operating costs and depreciation.[13]

11 Ofwat. 2002. "Regulatory capital values 2001-05." RD08/02.
12 John Smith and Duncan Hannan. November 2003. "Structure of the Water Industry in England: Does it remain fit for purpose?" Report for DEFRA and OFWAT.
13 Federal Power Commission vs. Hope Natural Gas Company, 320 US 591 (1944).

22. The key element of this approach to updating the regulatory asset value is that, after progressive incorporation of new investment less depreciation, the cumulative real value of existing investments remains constant. [14]

23. What the above approaches to establishing a regulatory value share in common is an element of consistency – consistency with a prior agreement, with shareholder expectations, or with stable regulated prices.

***Consistency not surprises***

24. This is not to suggest that consistency of treatment over time has always characterised regulatory decisions involving regulatory asset values in the UK. However, consistency and various efforts to credibly commit to the consistent treatment of the regulatory asset value has emerged as a means of assuring investors that their investments will not be expropriated. In other words, regulators use their support for a stable and predictable approach to regulatory asset valuation as a means of constructively fettering their discretion.

**Example 2**

25. This principle was given priority, for example, by Ofgas when it decided not to change the basis on which the regulatory value of British gas was carried forward:

> *"Although there are strong arguments in favour of adopting [a new] focused approach, Ofgem has decided to adopt the unfocused approach used by the MMC to set Transco's current price control. Ofgem believes that the benefits of maintaining consistency with the approach used at the last price control review outweigh the arguments in favour of adopting a focused approach. In particular Ofgem would expect the greater regulatory consistency implied by this decision to be reflected in a relatively lower cost of capital."* [15]

26. Ofgem also chose to explicitly fetter its future discretion in relation to future decisions over the regulatory asset base by confirming that, not only would it not adopt a new methodology in the review then underway, but that it would also retain the unfocussed approach in future Transco price control reviews. Consistency and commitment are therefore built into the regime.

**Replacement cost valuation**

27. An alternative to updating the regulatory asset value based on investment and depreciation alone – the utility model - is to consider the replacement cost of existing assets and update this estimate from time to time. This is precisely what happens in a competitive market but, consistent with an expectation of cost recovery, the value of assets may depart from actually incurred costs.

28. Unlike the utility approach, a unique depreciation profile is consistent with cost recovery when assets are periodically revalued. William Baumol (1971) proved this result, noting:

> *"we show that… is the only depreciation rule that (a) permits payments to decrease in proportion with the rate of fall of the replacement cost of the asset,*

14 The problem of deciding an opening regulatory value for the capital base has received much attention, especially in industries where the initial market value of the company was well below their CCA vale. This issue does not arise in telecommunications.

15 June 2001. Ofgem. "Review of Transco's Price Control from 2002 – Draft Proposals." Page 3. http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/308_27june01.pdf

*and (b) permits the original cost of the asset to be recouped by depreciation payments over its life."*[16]

29. Where assets are periodically re-valued a great deal of care must therefore be taken to correctly identify economic asset lives and economic depreciation. The complexity of implementing a replacement cost methodology without bias has recently become clearer to regulators based on experience and developments in the academic literature. It has led to a questioning by the FCC in particular as to whether computed LRIC prices do actually represent a competitive standard for the pricing of regulated services.

30. Markets revise asset valuations automatically, but the process is difficult for regulators as to amount of information needed to "mimic" this process is large.

**Rationale for asset revaluations**

31. Ofcom explains the reasons for its decision to revalue copper assets in paragraph 5.8 in Part 2 of the consultation:

> *"Because prices [in 1997 to 2001] would be the same under HCA or CCA, Oftel concluded that there was no over-recovery by BT in access during the period under review for the price control as a result of the change in accounting. Oftel's view at the time was that, beyond the current price control period, any excess or over-recovery which might arise in the longer term would be eroded through the process of competition and new entry to the market.* ***Oftel expected that competition could be expected to act as a long term restraint on BT's charges."***

32. The argument is thus that insufficient competition has developed, and that this is a reason to revisit the original "regulatory compact" and revalue the copper loop downwards. The "news" which has created a gain to BT. Ofcom is proposing "breaking the rule of consistency" on the basis that unanticipated events have occurred which warrant over-riding what has become established orthodoxy for all other UK regulators.

33. Under the methodology employed by other UK regulators, "news" does not affect regulatory value. Shareholders in the regulated company do not gain from good news or lose from bad news as the regulatory value of the assets is calculated independently of news. Uncertainty has been taken out of the system by the structure of regulation. A relative failure of competition to exert a strong price discipline would not, therefore, be a reason for intervention.

34. We believe that, in circumstances where unanticipated events do occur, eg the relative failure of competition to exert price discipline, then the use of such discretion by the regulator must be to leave returns unchanged in *expected value* terms. This might achieved in two ways:

    - Consistently permitting gains and losses to occur, or
    - Consistently acting to appropriate gains for consumers and to recompense the supplier for losses.

16 William J. Baumol. 1971. "Optimal depreciation policy: pricing the products of durable assets." *The Bell Journal of Economics and Management Science* Vol 2(2). Page 651.

35. In both cases, intervention needs to be symmetric - consistently ignoring news, or consistently adjusting for it – if the regulator is not to introduce bias into the regulatory system. If both the regulator and the investor have a common view of the future, they will be indifferent between the two schemes. It would be normal (and in keeping with the logic of price cap regulation) for investors to prefer that gains and losses are allowed to stand when they occur[17].

36. A critical question for a regulator contemplating "correcting" for a gains is therefore to state how it will respond to a losses. For example, what regulatory intervention would be made if asset lives are assumed to be 10 years but widespread entry occurs in a previously non-competitive market within this timescale? If only corrections are made for upsides then, on average, regulation will not be permitting cost recovery.

**Numerical Example**

37. Suppose a regulated company is allowed to earn a rate of return of 15% on its incurred costs, a rate assumed to be equal to its cost of capital. Any increase in the value of the assets is to be disallowed on the basis that it would represent an unearned gain and thus constitute “over-recovery”.

38. There is a 10% chance that technological change will occur which will mean that the earning capacity of the company’s assets will fall in value to half their current level. For example, this might result from widespread competitive entry via a new technology which reduces market prices.

**Table 1: The effect of obsolescence risk**

| Scenario | 1 (business as usual) | 2 (technical obsolescence) |
|---|---|---|
| Asset value | 1.15 (ie 1 plus 15%) | 0.50 |
| Probability | 90% | 10% |

39. The expected return in this case is 8.5%, a 6.5 percentage point shortfall from the fair rate of return.

    Expected return = 0.9*1.15 + 0.1*(-)0.50 = 1.085

40. There are two possible regulatory responses to this situation. The first is to allow a rate of return in the ‘business as usual’ scenario that is apparently higher than the fair rate of return. Returns might look generous, in the example a return of 22% is needed in Scenario 1, and there will be an apparent cost ”over-recovery” but these effects only come about because they represent the “good” state of the world for the supplier of the sunk asset. One time in ten, the allowed higher rate of return cannot be obtained by the supplier because it will be unable to price to the ceiling allowed for by the regulator because of entry from the rival platform.

    Expected return = 0.9*1.22 + 0.1*(-0.50) = 1.15

17 In telecommunications, “error correction mechanisms” have not been favoured and constant adjustment of gains and losses would complicate the regulatory process. This will be the more so if it is difficult to agree whether “over-performance” is the result of efficiency or of a “windfall”.

41. The second regulatory responses is only to permit a normal rate of return of 15% but to use mechanisms which provide for cost recovery even in the event of technical obsolescence.

42. The second approach has been adopted outside the UK. In the US in particular, the realisation of entry in the electric power generation industry led to the stranding of assets which could no longer be recovered. In many instances, but not all, regulators made explicit arrangements to abide by previous regulatory agreements and allow recovery of such stranded assets via levies on all operators.[18]

43. Alternatively, more rapid depreciation allowances – shorter asset lives - reduce investors exposure to the threat of entry. Longer asset lives do the opposite. In some instances in the UK regulators have allowed companies to expense investment – amounting to immediate and full depreciation - to reduce uncertainty and promote investment.

**Conclusions**

44. The value of a sunk asset is determined by the earning potential of the asset, and hence the prices at which it can be leased out. Value is therefore price reflective. In a competitive market, the value of an asset is determined by forces of demand and supply. For a regulated monopoly, prices and asset valuations are determined by the regulator.

45. In both competitive and regulated markets, prices must be consistent with recovery of efficiently incurred investment costs for investment to be sustained. This places constraints on feasible prices over time. In competitive markets "news" and "surprises" are the norm and existing assets are constantly "revaluated" by the market. Gains and losses in asset valuations are the norm.

46. There is no hard and fast economic basis on which to set regulatory value. The replacement cost of assets is often considered, on the basis that in certain circumstances this provides a good measure of "economic value". The regulator then has a choice over whether to allow fluctuations in value analogous to those which occur in a competitive market.

47. Given the discretion open to regulators in determining value some bounding principles are essential to shape market expectations. We propose that Ofcom be guided by consideration of the consequences of the valuation decision. A recurring principle that emerges in relation both to establishing an initial regulatory value and updating it over time is consistency and, in particular, consistency with a reasonable assurance of cost recovery for existing and new investment.

48. A commitment to a *consistent* approach that assures investors of a *reasonable prospect of cost recovery* is required to appropriately shape investor expectations. In seeking to provide this, a regulator has two broad options:

    - either "fix and stick" with a regulatory value that allows cost recovery (the standard 'utility' model whereby the regulatory asset value is updated for investment and depreciation only); or

18 Compensation for stranded costs has also been implemented outside the US. For example, see Oscar Arnedillo. September 2001. "Investment-related stranded costs in Europe." NERA Energy Regulation Brief 11.

- periodically revalue existing assets according to a rule that provides investors with cost recovery in expectation.

49. The latter rule requires a credible commitment to behave symmetrically over time and across assets in response to symmetric treatment of upside and downside news. This might involve ignoring gains and losses symmetrically, or taking gains and recompensing for losses symmetrically.