

# Leased lines charge controls – legacy services

A report prepared  
by DotEcon for BT

NON-CONFIDENTIAL

August 2015

---

# Contents

1 Background .....	1
1.1 Terms of reference .....	1
1.2 Ofcom’s proposed charge controls .....	1
1.3 A declining market.....	2
1.4 Continuing to regulate TI services .....	4
2 Ofcom’s profitability assessment .....	6
2.1 Choice of depreciation schedule and assessment of profitability.....	8
2.2 Alternative metrics and adjustments.....	9
3 Impact of the proposed charge control on migration to new services.....	14
3.1 Prices as a signal .....	15
3.2 Managing migration through flexibility in the TI basket .....	18
4 Impact on investment incentives.....	20
4.1 Impact on market development and investment in non-TI services.....	21
4.2 Policy expectations and investment incentives.....	23

# Tables & Figures

Table 1: Return on mean capital employed (ROCE) TISBO (up to and including 8Mbit/s) .....	7
Table 2: BT's income from ISDN30.....	7
Table 3: NRC/GRC ratio for the TI basket services .....	11
Figure 1: Ofcom's forecast of TI services to 2018/19 (number of local ends).....	3

## Executive summary

On 12 June 2015, Ofcom published a consultation on its proposals for leased lines charge controls and dark fibre pricing.<sup>1</sup> This outlined Ofcom's provisional views on the form and duration of the charge controls for leased lines, the products to be included within the baskets, and sub-caps and sub-baskets; it also included a proposal for dark fibre pricing.

*TI services are in decline as customers migrate to newer Ethernet technologies*

The leased lines market includes Traditional Interface (TI) services, which are a legacy technology with rapidly declining volumes as customers migrate to newer Ethernet technologies. In other markets with migration from legacy to newer technologies, such as the wholesale broadband access market, Ofcom has adopted a technology neutral approach to regulation based on an 'anchor product' to ensure efficient migration to newer technologies. Under this approach Ofcom has applied a charge control on the legacy technology, forecasting costs on the assumption that all services are provided over a single hypothetical on-going network (HON).

*Ofcom is proposing large changes to the TI charge control*

However, in the 2015 LLCC consultation, Ofcom proposes to continue to apply a charge control for TI services and Ethernet services. For TI services, Ofcom is proposing a negative X (CPI-12.25%) together with a starting price adjustment of -7.75%. This represents a significant reduction in the X proposed by Ofcom in the previous charge control (RPI+2.25%). Given the significant size of the price adjustments we understand that BT expects that the price of TI services will halve from current levels by the end of the charge control period.

---

<sup>1</sup> See "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing – consultation", Ofcom, 12 June 2015. (Referred to hereafter as the 2015 LLCC consultation)

*The decision to apply a negative X is driven by Ofcom's profitability assessment... however, where assets are almost fully depreciated one cannot credibly rely on ROCE figures*

Ofcom's decision to continue to apply a charge control on legacy TI services and its decision to impose a negative X on the charge control basket appears to be significantly influenced by its claim that BT's profits are excessive.<sup>2</sup> However, this assessment is solely based on ROCE, an accounting measure of profitability.

If a product or service were always in a steady state then using ROCE may be helpful for profitability assessments. However, for services such as TI, nearing their terminal date and where an accounting depreciation rule is unchanging, accounting ratios such as ROCE cannot be a reliable indicator of profitability.

ROCE is based on accounting returns, which are sensitive to the accounting depreciation applied to assets and which may not reflect the true economic value of those assets. In the case of legacy assets, the accounting value of the asset base will typically be below its economic value (or its value in steady state after HON adjustment); as a result ROCE will likely be inflated, showing accounting profitability exceeding the true economic profitability of the asset.

*HON adjustments should be made to increase asset lives to 'steady state' levels*

Ofcom should account for this by making appropriate adjustments for heavily depreciated assets to make their valuation more consistent with that it would expect of a firm in a steady state condition. For example, in other cases with legacy services and depreciated assets, Ofcom has considered alternative profitability metrics less susceptible to these biases, such as the internal rate of return (IRR) or truncated IRRs instead because they capture these specific circumstances. 'Hypothetical On-going Network' (HON) adjustments such as increasing the NRC/GRC ratio have also been applied to correct for heavily depreciated assets<sup>3</sup> and asset lives have been increased to reflect the fact that they may have to be used for longer than originally planned.

<sup>2</sup> Ofcom provides the following reasons for continuing to apply a charge control on TI services: Ofcom's proposal to withdraw retail regulation for BT's very low bandwidth leased line services together with its proposal to allow BT to close the sub-2Mbit/s platform provides a clear signal to customers that they need to migrate to alternatives; BT's profits on these services are currently high and will remain high absent a charge control; and given the excessive profits BT itself may have an incentive to artificially extend the life of the network if these high profits were not eroded. See Paragraphs 8.177 – 8.179 of the 2015 LLCC consultation.

<sup>3</sup> For example in the ISDN30 case.

*Ofcom rejects such adjustments on the basis that the benefits would be small*

Ofcom has concluded that a HON adjustment for BT's TI services would not be appropriate in this case, as it considers that there are insufficient benefits to warrant the higher prices. Ofcom considers that customer migration would be unlikely to be undermined by lower prices resulting from the lower X and starting price adjustment.<sup>4</sup>

However, Ofcom is understating the likely impacts of its proposals. Even if Ofcom considers these services to have been profitable to date, Ofcom must consider the trade-off between the static and dynamic impacts of its proposed charge control, recognising the longer-term impacts on both the migration decision and investment incentives more generally.

*It is implausible that there will be little or no impact on migration away from legacy TI services*

Ofcom has not provided any evidence to back up its claim that the starting price adjustments and large reduction in X will have little effect on migration incentives. Indeed, Ofcom's position in this regard is implausible, as there are good reasons – which Ofcom have not considered - to expect large price reductions of the scale proposed to significantly slow migration of customers away from legacy services such as TI to alternatives such as newer Ethernet services.

When assessing migration incentives, Ofcom must consider how business customers are likely to make their decisions to migrate from current legacy TI services to modern alternatives. When renewing equipment there will typically be a *forward-looking* consideration of the prices of connectivity services over the lifetime of that equipment, so the X in the charge control is important. If consumers are guaranteed to receive steep and sustained falls in the prices of legacy services, they are less likely to consider switching to next generation services. Migration incentives depend not just on short-term changes in relative prices, but are also affected by the anticipation of how TI prices will change over the relevant investment horizon of complementarity assets using connectivity services.

Further, the 'flexibility' provided by Ofcom in the charge control to encourage efficient migration to newer Ethernet technologies is not sufficient to offset the incentives provided by the significant drop in prices in the first year and every-year over the charge control period.

*The impact on investment incentives could be wide reaching*

The declining charges for TI services will also have an impact on BT's investment incentives and Ofcom must ensure BT can recover its efficiently incurred costs. Whilst Ofcom has made some adjustment to cover BT's efficient cost of continuing to provide TI services, there is a strong expectation that underlying levels of demand will

<sup>4</sup> See paragraph 7.66 and 7.67 of the LLCC consultation.

continue to decline. However, if migration is slowed, BT may face greater costs to maintain its network (especially where old equipment cannot be repurposed and new equipment is expensive) and costs must be incurred for a longer period.

*Ofcom must consider the impact on incentives to invest in replacement technologies*

Furthermore, Ofcom must consider the longer-term impacts on incentives to invest in non-TI services such as Ethernet and other competitive alternatives, which are arguably more important. Slower migration to Ethernet services and other alternatives may undermine recent investment in these services, given that demand may be lower than otherwise expected. Furthermore, there may be cost savings that are not realised, or would be delayed, because of insufficient scale on the new platform.

*Expectations of future policy may undermine investment incentives*

If the charge controls do not fully capture the costs incurred by BT, or BT anticipates that Ofcom is likely to make similar proposals in future (for example the misapplication of profitability metrics) such that the expected profitability of the service towards the end of its lifetime will be reduced, BT's expected future returns on current investments will be reduced. There may also be an incentive for BT to try to depreciate assets less rapidly to better manage migration to alternative services given the anticipated regulatory approach; this potentially increases investment risks by deferring recovery of initial costs, which again may discourage the initial investment.

*Ofcom needs more evidence to justify the radical change in X*

Given that the large swing in the X is likely to have significant implications for migration from legacy TI to new services and on the investment incentives, not only for TI, but for non-TI services and more generally on market development, Ofcom's justification for applying a charge control with a significant negative X does not stand up to scrutiny. Given the significant potential downsides, Ofcom's proposals for a radical change in X needs an appropriate degree of justification, which has not been provided in the LLCC consultation. Simple accounting ratios are arguably not sufficient to support of themselves such a considerable change.

# 1 Background

## 1.1 Terms of reference

On 12 June 2015, Ofcom published a consultation on its proposals for leased lines charge controls and dark fibre pricing.<sup>5</sup> This outlined Ofcom's provisional views on the form and duration of the charge controls for leased lines, the products to be included within the baskets, and sub-caps and sub-baskets; it also included a proposal for dark fibre pricing.

BT has asked DotEcon to provide a report to be submitted to Ofcom alongside its response to the 2015 LLCC consultation. BT has asked us to focus on Ofcom's decision to change the X in the TI charge control. In particular, in this report we consider Ofcom's assessment of profitability in the TI markets and explain why the metrics Ofcom has used to assess profitability may be biased as a result of some of the assets being close to the end of their depreciation lives, giving rise to a low capital employed and possibly a lower than normal depreciation charge.

## 1.2 Ofcom's proposed charge controls

Ofcom has previously adopted a positive X (RPI+2.25%) in the charge control for TI services, which is "*what we might expect in a declining market*".<sup>6</sup> However, in the 2015 Leased Line Charge Control (LLCC) consultation, Ofcom proposes a significant negative X (CPI-12.25%), which represents a substantial step change.

*Baskets, sub-baskets and sub-caps*

Ofcom proposes a single "broad" TI basket for the following services:

- wholesale low bandwidth TISBO up to and including 8Mbit/s;
- Radio Base Station, NetStream 16 Longline and SiteConnect;
- Interconnection services;
- TI Equipment and Infrastructure; and

---

<sup>5</sup> See "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing – consultation" Ofcom, 12 June 2015. (Referred to hereafter as the 2015 LLCC consultation)

<sup>6</sup> Paragraph 7.103 of the 2015 LLCC consultation.

- TI ancillary services (excluding ECCs and TRCs).

The TI basket would be controlled at CPI-12.25% with sub-cap and sub-basket controls, including:

- 2Mbit/s Radio Base Station, NetStream 16 Longline and SiteConnect services sub-basket (CPI-12.25%); and
- sub-cap on all charges (CPI-CPI on each charge).

*A one-off adjustment*

In addition to these changes to the price cap, Ofcom also proposes a one-off adjustment at the beginning of the charge control of -7.75% on the TI basket.

## 1.3 A declining market

*The TI market is in decline*

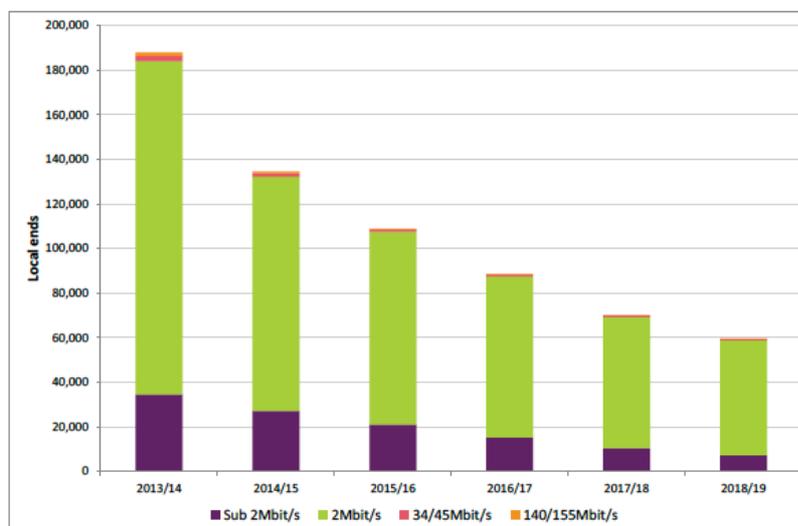
Ofcom acknowledges that the TI market is a declining market. It is expected to continue to decline, based on volume forecasts from BT, as well as from OCPs and industry analysts.<sup>7</sup> On average sub-2Mbit/s and 2Mbit/s TI local ends are expected to decline by around 20% per annum, which cumulatively would lead to a 68% fall in volumes by the end of the charge control period.

The volume forecasts are represented in Figure A8.8 of Ofcom's LLCC consultation (provided as Figure 1 below). This figure also shows that *"sub-2Mbit/s and 2Mbit/s local ends currently make up the vast majority of all TI local ends, and this is forecast to continue as the higher speed TI services (34/45 Mbit/s and 140/155 Mbit/s) migrate to Ethernet-based services."*<sup>8</sup>

<sup>7</sup> Paragraphs 6.77 and 6.78 of the 2015 LLCC consultation.

<sup>8</sup> Paragraph A8.36 of the 2015 LLCC consultation.

Figure 1: Ofcom's forecast of TI services to 2018/19 (number of local ends)



Source: Ofcom forecasts

Source: Figure A8.8 of the LLCC consultation

Ofcom considers that the decline in volumes is driven by three trends in the market:

- *“BT has signalled to end-users that it is ending support for the PDH platform that supports sub-2Mbit/s services due to obsolescence of the equipment;*
- *a large number of TI users are increasing their bandwidths above 10Mbit/s or higher, where Ethernet is the cheaper technology; and*
- *the availability of NGA broadband and EFM services to support higher upload and download speeds using Wholesale Local Access remedies (i.e. LLU and VULA) continues to increase.”<sup>9</sup>*

*Some TI customers will migrate yet some will stay*

Ofcom considers that many customers will migrate from TI to higher bandwidth services delivered using Ethernet.<sup>10</sup> However, Ofcom also considers that *“a significant proportion of customers will remain on TI services over the charge control period”*, especially those customers with special requirements, large legacy networks and large switching costs.<sup>11</sup>

<sup>9</sup> Paragraph A8.16 of the 2015 LLCC consultation.

<sup>10</sup> Paragraph 7.78 of the 2015 LLCC consultation.

<sup>11</sup> Paragraph 7.79 of the 2015 LLCC consultation.

## 1.4 Continuing to regulate TI services

*Ofcom proposes to continue to regulate legacy TI services...*

Despite declining TI volumes and migration to newer Ethernet services Ofcom has decided to maintain charge controls on both legacy TI services and newer Ethernet services rather than adopting an approach analogous to the anchor pricing approach used in other markets i.e. only applying a charge control on one of the services with a safeguard cap on the other.

*...using a charge control including negative start price adjustments and a negative X*

In addition to applying a charge control on both the TI and AI baskets, Ofcom has decided to apply a negative starting price adjustment on the TI basket plus a negative X representing a substantial change to the previous position. Ofcom states that its decision to impose a negative TI X is based on two factors:

- *"BT's returns at the start of the control period ... were significantly in excess of its cost of capital in 2013/14. Although we forecast the returns to fall over the 2013 LLCC period, we expect them to remain over 30% at the start of the 2016 LLCC period. Therefore we forecast there to be a significant gap between revenues and costs to be closed over the 2016 LLCC period; and*
- *efficiency – as set out in Annex 8, we are proposing an efficiency target for TI of 5% per annum for both operating expenditure and capital expenditure. We would expect efficiency improvements over time to offset, to some extent, increases in unit costs from loss of scale."*<sup>12</sup>

Ofcom acknowledges that without these two factors the X for TI services would have been positive (around +4.5%), which would have been broadly consistent with previous charge controls (indeed, higher than the previous charge control X of 2.25%) and consistent with what is normally expected in a declining market.<sup>13</sup>

Ofcom's decision to continue to apply a charge control on TI services and its decision to impose a negative X on the charge control basket appears to be significantly influenced by its claim that BT's profits are excessive. In Section 2 below we will explain that BT's reported profitability is likely to be explainable, at least in part, by measurement issues such as the approach to accounting depreciation and accounting asset lives. The accounting ratios that

<sup>12</sup> Paragraph 7.102 of the 2015 LLCC consultation.

<sup>13</sup> Paragraph 7.102 and 7.103 of the 2015 LLCC consultation. For example, Ofcom accepts that in a declining market such as TI we *"might typically imply a positive X, all else being equal, as unit costs might typically be expected to rise where volumes are in decline and the firm incurs fixed costs in providing the regulated services."*

Ofcom takes as evidence of excessive profitability are not reliable in situations where assets are largely depreciated, as Ofcom has itself acknowledged on previous occasions.<sup>14</sup>

---

<sup>14</sup> For example, in the ISDN30 case Ofcom recognised that “Openreach’s key ISDN30 assets (line-cards and access electronics) are heavily depreciated. As a result, the reported return of capital employed (ROCE) may appear relatively high... because the accounting value of the asset base is below its economic value, or its value in steady state”. See paragraph 3.2 ‘of Price controls for wholesale ISDN30 services’, Ofcom, April 2011,

## 2 Ofcom's profitability assessment

*Ofcom's decision to apply a charge control on TI service and with a negative X is driven by its profitability assessment*

In the BCMR, when considering whether BT has Significant Market Power (SMP), Ofcom followed a cautious approach in which it relied on a number of indicators, acknowledging the fact that profitability analysis is subject to measurement and interpretation limitations:

- *“First, the treatment of holding gains/losses as costs in BT's accounts has an impact on ROCEs observed, and in particular, introduces a volatility reflecting changes in asset values.*
- *Second, the high proportion of common costs in leased lines markets has an important consequence for accounting measures of profitability which necessarily reflect a particular common cost allocation which may not be uniquely correct. We note that BT has some discretion in the way it recovers common costs (it is subject to fair and reasonable pricing rules), and is also affected by the design of the regulatory regime.*
- *Third, financial data might apply to groups of services which do not correspond to our proposed market definitions.*
- *Finally, the economic lives of some assets may exceed their accounting lives. This means that the assets used to provide some services (more likely for low bandwidth TISBO than for CISBO services) may be heavily depreciated, tending to reduce the accounting value of capital employed and raise measured ROCEs without necessarily indicating the exploitation of market power.”<sup>15</sup>*

However, in the LLCC, Ofcom take a less cautious approach when making a decision to continue to apply a charge control on TI services and its decision to impose a negative X on the charge control basket. Its decision is influenced significantly by its claim that BT's profits are excessive, based solely on its assessment of ROCE figures.<sup>16</sup> This raises a number of issues.

First, we note that the TI market is in decline and ROCE for TISBO (up to and including 8Mbit/s) has only increased significantly in recent

<sup>15</sup> See paragraph A13.88 of Ofcom's 2015 BCMR consultation.

<sup>16</sup> In paragraph 2015 LLCC consultation Ofcom explains that the negative X is driven by “BT's returns at the start of the control period – as explained in Annex 5, BT's returns in TI markets were significantly in excess of its cost of capital in 2013/14.” Ofcom has not conducted any other profitability analysis or considered other metrics of profitability in the LLCC and basis its decision to impose a negative X on the analysis provided in Annex 5 – ‘Analysis of BT's 2013/14 financial performance’ – in which it compares BT's reported return on MCE (ROCE) in 2013/14 with those that it forecast when setting the previous charge control.

years, leading to concerns about profitability that were absent in earlier years (see Table 1 below).

*Table 1: Return on mean capital employed (ROCE) TISBO (up to and including 8Mbit/s)*

	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15
<b>ROCE</b>	1.9%	3.4%	2.9%	1.9%	8.3%	8.8%	13.7%	18.5%	19.3%	24.5%	30.6%
<b>WACC</b>	12.1%	12.1%	11.4%	11.4%	11.0%	11.0%	9.7%	9.7%	9.9%	9.9%	10.8%

*Source: Data provided by BT based on BT's Regulatory Financial Statements (as published).*

Even where BT's reported 2013/14 ROCE is above its WACC of 9.9%<sup>17</sup> it remains modest relative to other examples of declining markets, such as ISDN30 where ROCE was above 50% and increased to 74% in two of the years between 2007-2012 (see Table 3 below). Furthermore, in earlier years BT's reported ROCE for TISBO (up to and including 8Mbit/s) was significantly lower than its WACC.

*Table 2: BT's income from ISDN30*

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Sales (£m) (internal and external)	281	325	325	334	339	348	320	319	305
Operating costs (£m)	206	180	191	156	149	124	110	134	129
Operating profit (£m)	75	145	134	178	190	224	210	185	176
Capital employed (£m)	566	473	398	336	295	301	302	274	240
Return on capital employed	13%	31%	33%	53%	64%	74%	70%	67%	74%

*Source: BT Regulatory Financial Statements*

*Source: reproduced from Table 17.1 of Ofcom's Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30, volume 1, June 2014.*

Second, ROCE as a measure of profitability must be approached with caution. ROCE is an accounting measure of profitability, which does not necessarily reflect economic profitability. ROCE is based on accounting returns, which are very sensitive to the accounting depreciation applied to assets, whose accounting value may not reflect their current economic value. In the case of legacy assets, such as for TI services, the accounting value of the asset base can be expected to be below its economic value or its value in steady state, as we explain in more detail below.

<sup>17</sup> BT pre-tax nominal WACC of 9.9% for 2013/14 as estimated by Ofcom – see Table A5.2 of the 2015 LLCC consultation. In this charge control Ofcom proposes to use a pre-tax nominal WACC for UK telecoms services – which would include leased lines – of 10.1% - see paragraph A9.4 of the 2015 LLCC consultation.

## 2.1 Choice of depreciation schedule and assessment of profitability

### *Economic versus accounting depreciation*

When BT invested in the TI market it made a number of sunk investments with the view that it would recoup these costs over a certain period. BT, like most investors, has some discretion over how it recovers these costs over time by applying an appropriate depreciation scheme.

A fundamental choice is between an economic or an accounting depreciation scheme. With an economic depreciation scheme, depreciation is calculated by considering the loss of economic value of the asset. However, measuring true economic depreciation requires re-valuation of assets on a forward-looking basis at each point in time, which is onerous. Therefore, for practical convenience, accounting depreciation schedules are typically used instead. Hence, depreciation schedules are an accounting construct, not an economic rule about how investment costs should be efficiently recovered over time.

### *Accounting depreciation often outstrips economic depreciation*

It is often the case that accounting depreciation outstrips economic depreciation. There are often sound business reasons for using faster accounting depreciation to control investment risk (especially in regard to sunk assets)<sup>18</sup> by requiring faster payoff from investments, much like companies typically using hurdle rates above their cost of capital or other means of internal control to filter investment decisions and limit managerial discretion. However, this then means that accounting ratios often give a misleading impression of profitability late in the life of the product because the assets become heavily depreciated, thus reducing the accounting value of assets below their true economic value. Indeed, in proportion terms the biases can be very severe, in that accounting depreciation will eventually reduce an asset value effectively to zero, when that asset could still have significant economic value. If that asset value is then used as the denominator in accounting ratios such as ROCE, results will at best need to be carefully interpreted and at worst may be nonsensical.

This is the case in the TI market, where BT has adopted accounting depreciation, which does not take into account the fact that services are nearing their terminal date. If no further adjustments are made, the depreciation charge in later years may be too low. As the

---

<sup>18</sup> Such risks may be diversifiable within the usual terminology of the Capital Asset Pricing Model (i.e. averaged out by a well-diversified shareholder, but will still have real effects if investments are sunk).

*Profitability metrics based on accounting depreciation rates are unreliable where life-cycle considerations are important.*

terminal date approaches, depreciation will need to increase to account for the shorter accounting life of later investments.

This implies that snapshot analysis of profitability, which relies on accounting depreciation rates, cannot be a reliable indicator of the true profitability of products and services subject to life-cycle considerations, particularly at later years of a product's life.

Ofcom itself has acknowledged the issues with such measurements where assets are heavily depreciated. However, despite its recognition of the issue elsewhere, and despite the fact that TI services are made up of a number of legacy assets that are almost fully depreciated, Ofcom has not made any allowances for further adjustments or corrections when assessing the profitability of TI services in this LLCC consultation.

## 2.2 Alternative metrics and adjustments

*In the ISDN30 case Ofcom considered a number of metrics and suggested some adjustments*

Given that assets in the TI market are largely depreciated, it is reasonable to expect Ofcom to encounter methodological problems with the measurement of long-term profitability in the TI market. For services approaching the end of their lifecycle, Ofcom should consider the need for adjustments to snapshot profitability metrics such as ROCE, as it has done in other reviews.

For example, in Ofcom's 2011 ISDN30 charge control consultation it considered the relative merits of a number of different profitability metrics including more robust metrics such as Internal Rate of Return ("IRR") and truncated IRR considering profitability over longer periods, as well as other accounting ratios such as return on sales, ROCE and adjusted ROCE.

Ofcom acknowledged that *"(ROCE) may appear relatively high... because the accounting value of the asset base is below its economic value, or its value in steady state"*.<sup>19</sup> However, it considered that a Hypothetical Ongoing Network (HON) adjusted ROCE was *"a simple alternative to the IRR approach which addresses the issues caused by the use of heavily depreciated assets without the drawbacks of IRR."*<sup>20</sup> A HON model has been used to assess likely asset lives and thus depreciation rates in a number of charge control determinations, especially where there were uncertain costs and

<sup>19</sup> Paragraph 3.2, 'Price controls for wholesale ISDN30 services' Ofcom, April 2011.

<sup>20</sup> Paragraph 3.29, 'Price controls for wholesale ISDN30 services', Ofcom, April 2011.

where technology change and migration from legacy to new services was of importance.<sup>21</sup>

In particular, although the HON adjustment might itself be considered rather *ad hoc*, Ofcom considered that the IRR would require it to “*make assumptions about cost and revenues in the far future or distant past*” which would not be required when calculating an adjusted ROCE.<sup>22</sup> Ofcom instead made an adjustment to uplift the net replacement cost (NRC)<sup>23</sup> to 50% of the gross replacement cost (GRC)<sup>24</sup> to reflect a steady-state equilibrium (if a product was in a steady state with investment equal to depreciation over a long period, one would expect ratio to be around 50%).<sup>25</sup> Whilst ROCE for wholesale ISDN30 services in 2010/11 was reported as 67.1% in BT's regulatory financial statements, this HON adjustment made by Ofcom reduced ROCE to 25%. Ofcom then used this adjusted ROCE (25%) to set the appropriate X for the ISDN30 charge control.

---

<sup>21</sup> The HON model has been used by Ofcom to help set charge controls in line with its main objectives of providing efficient network investment signals, and by protecting end users and competing Communications Providers (CPs) in downstream markets from excessive pricing, as well as to avoid risks of inefficient parallel running costs being passed on to consumers during the migration between the legacy and new generation services. The model relies on assumptions on appropriate asset lives for a hypothetical on-going network and the relevant depreciation charges.

<sup>22</sup> Paragraph 3.29, 'Price controls for wholesale ISDN30 services', Ofcom, April 2011.

<sup>23</sup> NRC is defined by Ofcom as: “*Gross replacement cost less accumulated depreciation based on gross replacement cost. An alternative is Depreciated replacement cost (of tangible fixed assets other than property:-The cost of replacing an existing tangible fixed asset with an identical or substantially similar new asset having a similar production or service capacity, from which appropriate deductions are made to reflect the value attributable to the remaining portion of the total useful economic life of the asset and the residual value at the end of the asset's useful economic life.*” See Ofcom, April 2011, 'Price controls for wholesale ISDN30 services'

<sup>24</sup> GRC is defined by Ofcom as: “*The cost of replacing an existing tangible fixed asset with an identical or substantially similar new asset having a similar production or service capacity.*” See 'Price controls for wholesale ISDN30 services' Ofcom, April 2011.

<sup>25</sup> Paragraph 3.40, 'Wholesale ISDN30 price control', Ofcom, April 2012.

*Ofcom also applied HON adjustments in WBA, revaluing SDH assets*

Ofcom also acknowledged and applied a HON adjustment in the WBA Charge Control Models in 2011,<sup>26</sup> 2013 and revisited it again during Ofcom's 2014 review of WBA.<sup>27</sup> In its review of the Wholesale Broadband Access market, Ofcom acknowledged that "[a]ccounting lives are generally quite cautious" and made adjustments to increase the asset lives to a 'steady state level'.<sup>28</sup> In the WBA case, this involved revaluing the SDH assets, which are also relevant for the TI market given that the SDH platform supports 2Mbit/s and higher TI bandwidths.

These examples demonstrate that Ofcom has previously accepted the principle of making adjustments to account for largely depreciated assets for other legacy services and there are good reasons to suggest that Ofcom ought to apply similar adjustments in this case.

*Adjustments may be justified when assessing profitability of TI services*

As shown in Table 3 below, figures provided to us by BT show that assets in the TI market are now much more depreciated than they were at the time of previous charge controls<sup>29</sup> and the NRC/GRC ratios are significantly lower. The NRC/GRC ratio for the total TI basket is currently [✂ CONFIDENTIAL], significantly below the levels we would expect in a steady state with investment equal to depreciation (50%).

*Table 3: NRC/GRC ratio for the TI basket services*

[✂ CONFIDENTIAL]

*Ofcom is proposing not to make similar adjustments for TI services*

Despite obvious shortcomings associated with profitability metrics, the similarities with previous cases and the significantly smaller NRC/GRC ratios for the TI basket services for this charge control period, Ofcom does not propose to make HON adjustment for BT's TI services. However, Ofcom's decision not to impose an adjustment for the 2016 LLCC period is based on its view that there

<sup>26</sup> See "Wholesale Broadband Access (WBA) Charge Control Model", Ofcom, 15 February 2011. Available at: <http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/charge-control-model/>

<sup>27</sup> See for example, "Review of the wholesale broadband access markets - Update on the impact of fibre roll-out and further consultation on the proposed charge control", Ofcom, 27 January 2014.

<sup>28</sup> Paragraph 7.224, 'Review of the wholesale broadband access markets Statement on market definition, market power determinations and remedies', Ofcom, June 2014, available at: <http://stakeholders.ofcom.org.uk/binaries/consultations/review-wba-markets/statement/WBA-Statement.pdf>

<sup>29</sup> For example, in the 2009 LLCC, Ofcom considered that: "The NRC/GRC ratio in our model across the TI and AI Baskets is around 45% in 2006/07 and 44% in 2012/13. We have therefore not made any further adjustments to the NRC/GRC ratio of the assets in our model." See paragraph 4.129 of the 2009 LLCC Statement, 2 July 2009.

are not good reasons to warrant the higher prices, considering both customer migration incentives and investment incentives benefits are insufficient.<sup>30</sup>

However, there are good economic reasons for allowing BT to maintain prices above costs (whether through a HON adjustment or maintaining current nominal prices) even if Ofcom expects that BT's return over the lifetime is above its WACC. In fact with incentive based regulation one would expect returns to be above the WACC. Ofcom should instead consider the forward-looking impact of its proposals to significantly lower prices, on migration away from legacy TI services and the general impact on investment incentives in other markets.

Significantly lower prices will at the very least slow down the rate of migration, encouraging customers to stay on the legacy network for longer than they might have otherwise done so there will still be a need for on-going investment in the network, and BT should be able to recoup the costs of maintenance. Perhaps more important is the impact on investment incentives for the newer technology for which volumes will be smaller than anticipated.

*There is a trade off between short-term and longer-term impacts of Ofcom's proposals*

Ofcom must recognise that there is a trade-off between static and dynamic impacts of its proposals. Although Ofcom has focused on short-term considerations when assessing the impact of its proposals, implying that prices should fall so that BT does not over-recover costs, falling prices may impede efficient migration and investment decisions and so have dynamic aspects.

Ofcom has recognised such trade-offs in other markets. For example, given BT was achieving high returns on capital employed for the period from 2004 to 2013 for ISDN30 services, Ofcom considered that BT should have been able to recover efficiently incurred costs and allowing BT to increase prices for ISDN30 could not be justified on that basis. However, Ofcom also considered whether it was appropriate to apply a simple price control that would cap BT's prices at current nominal prices rather than reducing them to the cost of capital, as it is proposing in the TI charge control. Ofcom considered that a reduction in prices could actually have negative long-term efficiency impacts. For example Ofcom acknowledged that materially lower ISDN30 charges may undermine investment in newer technologies (IP-based services) *"which could create a perception of regulatory uncertainty (which may again damage investment incentives in the longer term, harming*

<sup>30</sup> See paragraphs 7.66 and 7.67 of the 2015 LLCC consultation.

*efficiency). Ultimately, this could be against consumers' interests.*<sup>31</sup>  
Ultimately Ofcom put more weight on the later, forward looking impacts, and did not propose a negative X.

However, in the current review of charges for TI services, Ofcom puts little weight on the dynamic efficiency impacts, focussing more on the short-term impact. We consider the likely impact of Ofcom's proposals on the migration incentives and investment incentives in more detail in sections 3 and 4 respectively.

---

<sup>31</sup> Paragraph 17.63 of Ofcom, June 2014, 'Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30', Volume 1.

### 3 Impact of the proposed charge control on migration to new services

*The negative X and starting price adjustment will hamper migration to new services*

Ofcom's 2015 LLCC consultation does not consider that there are sufficient benefits in terms of migration incentives to warrant the higher prices resulting from a HON adjustment. Ofcom makes the following arguments:

- *"TI services remain open to new supply and, as we understand it, BT intends to continue to provide TI services for at least the period of the 2016 LLCC; and*
- *over recent years a considerable proportion of TI customers have migrated to alternative services, such as broadband and Ethernet. This implies that although price differentials are significant, the current pricing of TI services, which does not involve a HON adjustment, does not appear to be significantly undermining customer migration incentives."*<sup>32</sup>

On the first point, whether a service is open to new supply is irrelevant to the decision of whether or not to apply a HON adjustment. For example, BT's ISDN30 services were also open to new supply and Ofcom still chose to apply a HON adjustment.<sup>33</sup> To be clear, remaining open to *potential* new supply does not mean that it is efficient to provoke that new supply. Assets will fail and need replacement. With declining demand this can be accommodated by repurposing equipment. However, if demand is declining at a slower rate may not allow this and may eventually require new investment (which could be expensive or even infeasible).

Therefore, Ofcom should instead be considering whether the lower prices will:

- induce inefficient new supply because it may not provide efficient price signals to customers; and/or
- allow BT to recoup the cost of any new investments it makes to meet new supply/maintain the legacy platform for longer than it expected.

<sup>32</sup> See paragraph 7.66 of the 2015 LLCC consultation.

<sup>33</sup> Ofcom noted that *"Openreach will be able to serve new demand without significant capital outlay, using current and returned equipment."* Paragraph 3.20, 'Price controls for wholesale ISDN30 services Consultation of the form and level of price controls on Openreach wholesale ISDN30 services, Consultation', Ofcom, April 2011.

Ofcom admits that “most new data connections are based around Ethernet or business broadband connections.”<sup>34</sup> Those new connections that are based on TI services are the “few exceptions”, not the norm. However, there is a risk that Ofcom’s decision to impose a negative X and price adjustment on the TI market could increase new supply beyond the current efficient level (i.e. where new TI connections are more the norm than the exception). Even if there is no significant new demand for TI services, if the rate of migration is slowing there may still be the need for new investment.

In regards to Ofcom’s second point, it may be true that to date the X=2.25% cap on TI services without an explicit HON adjustment may not have discouraged migration to more future-proof alternatives. However, we cannot assume that migration will continue in the same manner under an X=-12.25% cap. Doing so would imply that the direction of change of TI prices to date have not had a significant influence on demand. However, as we discuss below, changes to prices provide an important signal to customers that influences decisions to migrate to newer services.

### 3.1 Prices as a signal

Ofcom must consider the need for prices to be technology-neutral to provide better long-term incentives for customers to make efficient decisions between legacy and new services. Lower and falling prices will embed inertia and distort the migration decision, leading to inefficient decisions to remain on the legacy network for longer, which is ultimately against consumer interest when they could be moving to new, higher quality and more efficient technologies.

*Prices are an important signal to customers and influence decisions to migrate to modern alternatives*

In order to consider what impact the proposed charge control might have on demand and migration incentives we need to consider how business customers make their decision to migrate from current legacy TI services to modern alternatives. Business users are likely to review their business connectivity services on an intermittent basis and/or when their demand for higher bandwidth services becomes apparent. They will purchase complementary equipment alongside these connectivity services.

When making such intermittent choices, there are two separate points to consider. First, when a customer is renewing equipment, there will be a *forward-looking consideration* of the prices of the connectivity services used by that equipment, so the X of those services is relevant. Second, if prices of connectivity services are

<sup>34</sup> Paragraph 5.13 of the 2015 BCMR consultation.

falling, re-evaluation of telecoms needs and swapping out of equipment is likely to be *less frequent*.

A customer is more likely to review its services more frequently if it observes that its current charges (for TI services) are increasing and are expected to continue to increase, whilst the price of modern alternatives, such as Ethernet services, is expected to decrease. In this case the business user is likely to review its service requirements at an earlier date and decide to switch to the cheaper, newer technology and possibly at a higher bandwidth (taking into consideration its future requirements). However, if the price of the TI service is expected to fall, and to do so on a forward looking basis (given the negative X) then the opposite may occur.

*Customer response to a change in relative prices*

The services available do not need to be in the same market at present for a reduction in the prices of TI services to impede switching. We understand that when defining the TI and Ethernet markets Ofcom already considered whether customers would switch in response to a small price increase in TI services (i.e. a SSNIP). To do so it analysed *“the sensitivity of demand for TI services over time to large changes in the relative prices of CI services as compared to TI.”* Ofcom concluded that *“the rate of migration from TI to CI services is unlikely to be strongly influenced by movements in relative prices”*.<sup>35</sup> However, Ofcom’s conclusion is based on the observation that *“the gap between Ethernet rental charges and 2Mbit/s TI rentals initially widened and then narrowed as Ethernet prices initially rose then fell, then were stable for a while before falling again. Despite these changes in relative prices the trend in TI volumes has been consistently and steadily downwards and there is no clear sign that the rate of migration away from TI has responded to the changes in relative charges that have occurred.”*<sup>36</sup>

*Expectations of future prices play an important role in the migration decision*

As explained above, an important distinction needs to be made between what we have observed in the past and what we expect to happen to prices in the future. The changes observed by Ofcom in its analysis may be far less material than the *forward-looking, sustained* impact of a much lower X on prices over the lifetime of the complement equipment being used by the customer. If consumers see prices of legacy services continuously falling they are less likely to consider switching to next generation services. Therefore, it is not a matter of undertaking only a short-term assessment of changes in relative prices but the general direction of TI prices over the investment horizon.

<sup>35</sup> Paragraph 5.19.2 of the 2015 BCMR consultation.

<sup>36</sup> Emphasis added. Paragraph A10.33 of the 2015 BCMR consultation.

*Timing of migration to higher bandwidth services*

On the other hand, where a business decides to switch because it requires higher bandwidth services, it will have two options:

- switch to newer Ethernet services which are currently relatively cheaper than TI services at higher bandwidths; or
- stay on the legacy TI infrastructure but at a higher speed.

When doing so it will take a forward looking approach, given that there are likely to be significant switching costs and associated equipment using the connectivity services will endure for their lifetime. If it considers that TI services are going to continue to increase in price whilst Ethernet services will fall over the long term then it is more likely to incur the switching costs now to reap the rewards of lower costs in the future.

However, if prices in the TI market are also falling then the firm will be less prepared to incur the significant cost of switching now.<sup>37</sup> It may take a more cautious approach by switching to higher bandwidth TI services in order to avoid the high cost of switching from a legacy TI platform and/or delay the decision to switch. It is more able to wait and see. In this case, there is an additional potential inefficiency arising from this 'two-step' or 'double' migration, first to higher bandwidth TI and onto Ethernet at a later date.

Furthermore, this particular issue may be compounded in the next charge control period, as it is highly likely that the price of lower bandwidth Ethernet services, which are a more likely substitute for TI services, will increase in price because of the imposition of dark fibre due to BT's need to re-balance prices in response, flattening the existing pricing structure based on the bandwidth gradient. If the price of lower bandwidth Ethernet services increases, and the price of TI services falls and can be expected to continue to fall throughout the charge control period, this will strengthen incentives for customers to delay switching away from TI services. The report by Plum Consulting submitted alongside BT's response to the 2015 LLCC consultation discusses the impact of collapsing the Ethernet price gradient on migration.<sup>38</sup>

Because of the underlying decline in demand for TI (20%), it seems unlikely that Ofcom's proposals would provoke significant new demand (i.e. an increase in the quantities). However, given the swing in the charge control X from a positive value to a significantly

<sup>37</sup> As noted by Ofcom "it is likely a significant proportion of customers will remain on TI services over the charge control period, particularly those with large legacy networks and/or specialised requirements as there are likely to be significant switching costs involved." Paragraph 7.79 of the 2015 LLCC consultation.

<sup>38</sup> See section 4.2 of "Leased line pricing in the context of "all-IP" transition – A report for BT", Plum, July 2015.

negative value and the negative starting price adjustment it is realistic to expect the profile of demand over time to be higher than it would otherwise have been with a positive X and or no changes in the nominal prices due to the reduced incentives to migrate to modern alternatives.

## 3.2 Managing migration through flexibility in the TI basket

In a number of places Ofcom claims that the broad TI basket will enable BT to manage migration incentives through the flexibility it is afforded in terms of price reductions on 64kbit/s services relative to 2Mbit/s services:<sup>39</sup>

*TI basket  
"flexibility" is not  
sufficient to  
encourage  
migration away  
from TI circuits  
altogether*

The issue is that BT would ultimately like customers to migrate from the SDH platform (which supports 2Mbit/s and higher TI bandwidths) to Ethernet services through price adjustments. For sub-2Mbit/s services, the migration decision will be influenced by BT's plan to close the platform that supports these services. Therefore, the decision to migrate from sub-2Mbit/s services is based on these facts rather than the relative prices. Indeed, Ofcom has acknowledged that flexibility is not required to entice switching because BT has already said that it plans to close the platform that supports sub-2Mbit/s services and the change in the PPC direction allows for this.<sup>40</sup>

Given this, the 'flexibility' allowed by Ofcom does not provide BT with any significant power to manage migration of 2Mbit/s and higher more quickly. Furthermore, BT's migration management is not made much easier by additional flexibility between sub-2Mbit/s

<sup>39</sup> "Allowing BT flexibility to impose fewer price reductions on 64kbit/s services relative to 2Mbit/s services is consistent with incentivising customer migration from very low bandwidth leased lines to Ethernet or, alternatively, higher bandwidth TI lines (which do not use the DPCN platform or other services such as broadband. We therefore consider it appropriate to include all low bandwidth PPCs in a single basket and we do not propose to impose a specific sub-cap on PPC 64kbit/s charges. Instead they will be subject to a cap of CPI-CPI, which will apply to all services in the TI basket... we believe this strikes an appropriate balance between giving BT some flexibility to promote efficient migration while ensuring that downstream competition is not distorted by prices which do not reflect costs." Paragraph 7.28 of the 2015 LLCC consultation.

<sup>40</sup> "we are proposing an amendment to the PPC Direction to facilitate the withdrawal of sub 2Mbit/s PPCs. The effect of the amendment is to misapply the requirement for BT to supply sub 2Mbit/s PPCs, on condition that BT gives notice of withdrawal of not less than one year. The PPC Direction would continue to apply to PPCs at higher bandwidths. This would complement our proposal to withdraw regulation from the retail VLB TI market." See paragraph 11.21 of Ofcom's 2015 BCMR consultation.

and 2Mbit/s. It is clear to see that if BT was to use this “flexibility” to reduce the price of sub-2Mbit/s less than 2Mbit/s this would actually lead to further problems for BT in the longer term because it would have to cut prices of 2Mbit/s by more than X hampering migration to Ethernet services further.

Indeed “*stakeholders generally seem to be of the view that most of the installed base of TI users are more likely to migrate to Ethernet.*”<sup>41</sup> Therefore any impediment to switching from TI to Ethernet services will have a greater impact than impediments to switching from TI to other services (such as broadband or EFM).

Finally, the lower prices on the 2Mbit/s may actually encourage customers migrating from sub-2Mbit/s services to switch to 2Mbit/s services further delaying the switch to Ethernet technologies. On the other hand if the price of 2Mbit/s services were increasing customers would have instead switched from sub-2Mbit/s directly to Ethernet. Therefore, Ofcom’s proposed charge control risks encouraging inefficient double migration.

---

<sup>41</sup> Paragraph 5.20.2 of the 2015 BCMR consultation.

## 4 Impact on investment incentives

Ofcom has made a decision to set a charge control to significantly reduce prices for TI services based on its assessment that these services are profitable so BT should have already recovered its efficiently incurred costs, and that without curtailing this profitability BT may have incentives to artificially extend the life of the network given high on-going returns.<sup>42</sup>

However, this is a very short-term view and (as discussed above) is based on potentially distorted profitability metrics. Even if the services are currently profitable, Ofcom must recognise the dynamic efficiency impact of its proposals, including the impact of its decision to adopt a negative TI X on the incentives for on-going investments to maintain legacy services during the transition period, and the impact on BT's (and its competitors') incentives for future investments and the development of the market in general.

*In the short-term, maintaining the legacy network will be costly and BT should be able to recoup the costs of such investments*

Where it is likely that the large price reductions required under the charge control will significantly delay migration from the legacy services, there will be significant additional costs for BT. Even for certain TI services where there may not be significant new demand (for example for the PDH platform which supports sub-2Mbit/s services where because BT has signalled that it will be closing the platform) it remains likely that BT will have to maintain the SDH platform and other TI services for longer than it would have anticipated at the time of the initial investment. If BT is not able to recoup its efficiently incurred investments in the TI market then it will be discouraged from making such investments.

Ofcom needs to consider whether BT will have the opportunity to recoup investments it makes in meeting new supply/maintaining the legacy platform for longer than it would absent regulation. If Ofcom does not make a HON adjustment (such as uplifting NRC to the steady state level) then BT may not be able to recoup the costs of investments it makes to replace legacy assets.

Ofcom has already included some allowances within its approach to modelling BT's efficient costs of providing TI services for BT to undertake activities, such as capital expenditure, to continue to run the network.<sup>43</sup> However, Ofcom has not fully captured additional, dynamic efficiency impacts of its proposals to impose a charge control with a negative X on TI services.

<sup>42</sup> For example, see paragraph 8.179 of the 2015 BCMR consultation

<sup>43</sup> Paragraph 7.67 of the 2015 LLCC consultation.

*Dynamic-  
efficiency impacts  
must also be  
considered*

When assessing the impact on investment incentives, Ofcom must take a forward-looking approach including an assessment of the impact not only on on-going investment in TI, but also the longer-term impacts on non-TI services (e.g. Ethernet). For example, where migration from TI to Ethernet services and other competitive alternatives (including NGA) is slow, the volumes of these services will be lower than otherwise expected, potentially reducing investment incentives in these services and thus market development.

Given the costs associated with maintaining the legacy network, BT has an incentive to encourage migration away from TI to services provided over new technology, which are higher quality and can be provided at lower overall costs. The quicker the migration, the sooner BT can 'switch off' the legacy service for which on-going costs are high (and as demand for legacy services falls the average incremental costs per customer will begin to rise<sup>44</sup>) and the greater the number of customers moving to the new network, the more BT will be able to benefit from economies of scale associated with focussing on a larger Ethernet customer base, resulting in lower overall costs.

We explore these forward-looking considerations in more detail below.

## 4.1 Impact on market development and investment in non-TI services

By applying a negative X and starting price adjustment Ofcom could hamper efficient migration to new services, undermining BT's incentives to continue to invest in the new, more efficient technology.

*Taking into  
account BT's  
investment in new  
technologies*

Ofcom acknowledges that if BT had plans to undertake significant investments in new technologies for providing TI services then it would have considered applying an anchor pricing/technological neutral approach to charges (which entails a HON adjustment) as it has done in other markets with significant technological change. However, Ofcom provides as a reason for not applying a HON adjustment in the TI case, it is "*unaware of any plans BT has to*

---

<sup>44</sup> Ofcom accepts that in a declining market such as TI "...unit costs might typically be expected to rise where volumes are in decline and the firm incurs fixed costs in providing the regulated services." See paragraph 7.102 and 7.103 of the 2015 LLCC consultation.

*undertake significant investments in new technologies for providing TI services....”<sup>45</sup>*

In presenting this argument, Ofcom is failing to recognise that whilst Ethernet services are not in the same market as TI services (i.e. it is a slightly adjacent market), BT is undertaking significant investments in Ethernet services which it would ultimately like all of its TI customers to migrate to. Therefore, there are still strong reasons to apply an approach that is analogous to the anchor pricing approach Ofcom has used in other markets with significant technological change. If prices are distorted, and not technology-neutral then BT’s long-term goal of turning off TI services will be delayed and shifting across to the Ethernet services will be slower.

If, as a result of Ofcom’s proposed price changes, migration slows at a time when BT would like customers to move to the more efficient Ethernet services, development of the Ethernet market will also be damaged. Dampening of migration may undermine recent investment in Ethernet and EFM technology, in that demand for these new services may be lower than it might otherwise have been. Therefore there may be cost savings on the Ethernet platform that are not realised, or would be delayed, because of insufficient scale on this platform.

*Competition from efficient operators*

There are further, wider reaching impacts of Ofcom’s proposal to significantly reduce the price of TI services potentially having an impact on competition from other operators in the market. BT and its competitors will have made their investment decisions in alternative services based on the expectation that costs and prices are increasing in the legacy TI market and an expected rate of migration. However, if prices start to fall this will dampen migration away from legacy TI services and therefore lead to lower volumes for alternative services supplied by BT and its competitors. Thus Ofcom’s proposals act as a regulatory shock, giving rise to uncertainty, possibly having wider reaching adverse impacts on the market.

Furthermore, if the price control is based on implicit rate of return regulation with unadjusted costs, the prices of wholesale leased line services will be unduly depressed. An alternative efficient operator with higher costs than BT (arising from the fact that its assets are not fully depreciated) will not be able to compete with BT’s lower prices. Indeed, in the ISDN 30 case *“C&WW stated a preference for assessing the costs of ISDN30 services using an efficient operator based approach. However, it acknowledged that making an adjustment to reflect the steady state was a suitable approach as it led to directionally the same outcome (i.e. the cost base is increased to reflect the fact that*

<sup>45</sup> Paragraph 7.67 of the 2015 LLCC consultation.

*Openreach's ISDN30 assets are heavily depreciated*).<sup>46</sup> Therefore, in addition to maintaining BT's incentives to invest, a steady state model can go some way to ensuring that an alternative efficient operator (other than BT) is able to continue to compete with BT's leased line services and invest in alternative technologies.

## 4.2 Policy expectations and investment incentives

Ofcom's decision in this market, and any impact on BT's ability to recoup its efficiently incurred costs in the TI market will also have a negative impact on BT's investment incentives in general. For example, to the extent that BT anticipates that Ofcom's is likely to make similar proposals in future (for example the misapplication of profitability metrics) such that the expected profitability of the service towards the end of its lifetime will be reduced, BT's expected future returns on current investments will be reduced.

Reductions in the expected return and/or increases in risk may discourage initial investment in new services that may at a later date become legacy products (in a similar manner to TI). Furthermore, there may also be an incentive for BT to try to depreciate assets less rapidly to better manage migration to alternative services given the anticipated regulatory approach; this potentially increases investment risks by deferring recovery of initial costs, which again may discourage the initial investment. As such, policy expectations based on Ofcom's approach in this charge control review could have a negative impact on BT's incentive to invest more generally.

*BT's ability to recover efficiently incurred costs is an important factor when assessing investment incentives*

Ofcom has recognised this additional impact of policy expectations on investment incentives in other charge control decisions. For example, Ofcom considered these incentive issues in its most recent review of the ISDN30 charge control. When deciding whether to continue to use the HON model it had adopted in the previous market review Ofcom acknowledged that *"the question of whether BT would have a reasonable opportunity to recover its efficiently incurred costs if charges were not allowed to rise as being important"* to its consideration of how to set charges.<sup>47</sup> Whilst the impact on BT's incentive to invest in the ISDN30 market was minimal because

<sup>46</sup> Paragraph 3.26 of ISDN30 charge control

<sup>47</sup> Paragraph 17.59 of 'Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30', Volume 1, Ofcom, June 2014.

it could serve new demand by re-using existing equipment stocks, Ofcom still considered the question of whether BT could recover its efficiently incurred costs to date as important. This is because Ofcom acknowledged that not allowing BT to recoup its efficiently incurred costs could have negative implications for BT's incentive to invest in *general*.

In this instance, Ofcom's assessment of BT's ability to recover efficiently incurred cost involved a consideration of ROCE over an eight-year period rather than focusing on recent ROCE figures only. Even with the ROCE figures provided in the ISDN30 case, which demonstrate that the uncorrected ROCE was much higher than it is in the case of TI in the current LLCC consultation, Ofcom still accepted that it was reasonable to make the HON adjustment and chose not to impose a negative X in the charge control. This is further evidence of the inconsistency with Ofcom's previous practice.

The relatively lower ROCE figures in the TI market coupled with the fact that ROCE has only risen in recent years suggests there is a greater risk that a reduction in prices would not allow BT to recoup its costs. This would have severe implication for BT's investment incentives both in the TI market and more generally.