



## SKY'S RESPONSE TO OFCOM'S

### **BUSINESS CONNECTIVITY MARKET REVIEW CONSULTATION DATED 15 MAY 2015 AND BUSINESS CONNECTIVITY MARKET REVIEW CONSULTATION ON LEASED LINES CHARGE CONTROLS AND DARK FIBRE PRICING DATED 12 JUNE 2015**

This is Sky's consolidated response to Ofcom's Business Connectivity Market Review consultation dated 15 May 2015 ("the BCMR consultation") and Ofcom's "Business Connectivity Market Review: Leased lines charge controls and dark fibre pricing" consultation dated 12 June 2015 ("the LLCC consultation")<sup>1</sup>.

#### **1. Executive Summary**

- 1.1 Access to BT's ducts and poles together with dark fibre is necessary to encourage investment in alternative fibre infrastructure and promote competition in the provision of backhaul and other communications services<sup>2</sup>. Without access to this infrastructure, CPs are unlikely to be able to benefit from the requisite economies of scale and scope to invest in alternative fibre networks and compete in the supply of backhaul and other communications services.
- 1.2 Ofcom's proposals in their current form may at best encourage limited fibre investment to address the needs of very high bandwidth (i.e. 1Gbps and above) customers that represent approximately one third of the market. Ofcom's proposals, however, will not enable CPs such as Sky to generate sufficient scale and scope to promote investment in alternative fibre infrastructure and effective competition in downstream markets. Whilst Ofcom needs to strike the right balance in promoting investment and mitigating any risks inherent in proposing passive remedies, it should ensure that the introduction of passive access is not rendered ineffective by service restrictions or pricing that reduce economies of scale and scope.
- 1.3 Backhaul and other leased lines provide the backbone to support the fixed and mobile services upon which consumers and businesses rely. Effective regulation of access to BT's ubiquitous network (for both residential and business services) is essential to ensure the competitive supply of these communications services including business connectivity services. Without such access, competition will be limited and result in poorer outcomes for consumers and businesses.
- 1.4 The increasing demand for bandwidth (with household requirements expected to more than double by 2023) is likely to place greater strain on existing regulation.<sup>3</sup> This growth is shifting demand for LLU (and mobile) backhaul to higher bandwidth circuits, of which BT is likely to remain the dominant provider. Further, over the BCMR review period it is expected that the market will experience greater fixed and mobile convergence which will require flexible backhaul requirements, including small cell networks requiring access to fibre closer to customer premises. Passive infrastructure access will be required to enable CPs

<sup>1</sup> Sky also refers Ofcom to the reports submitted separately on behalf of the Passive Access Group.

<sup>2</sup> Residential, business and wholesale fixed and mobile communications services.

<sup>3</sup> Figure 9, Ofcom Strategic Review of Digital Communications - Discussion Document dated 16 July 2015 ("SRDC") <http://stakeholders.ofcom.org.uk/consultations/dcr-discussion/>

to accommodate these changing needs and deliver competition in the provision of backhaul services. The BCMR consultation provides Ofcom with the opportunity to address these concerns and challenges and promote effective competition, efficient alternative investment, innovation and choice to the benefit of end-users.

- 1.5 One of Ofcom's objectives through the BCMR consultation and the LLCC consultation is to promote effective and sustainable infrastructure based competition in the supply of backhaul and other wholesale leased lines services. To achieve this, Ofcom has proposed to require BT to provide access to dark fibre. However, Ofcom has provisionally concluded that it will not require BT to provide access to its ducts (for business services).
- 1.6 The design of dark fibre access (and duct access should Ofcom be minded to include it) should be unconstrained and flexible to allow CPs to develop a broad suite of services and unlock fully the potential benefits of passive access in terms of innovation and product differentiation. Limitations and inflexibility of design will undermine scale and scope efficiencies and therefore the business case for investment. In particular, restricting the provision of dark fibre to the network configurations that suit BT's active products will limit the usage cases available to CPs and as a result constrain demand for dark fibre. As proposed, the design of the dark fibre product will inhibit the use of dark fibre for backhaul to support multiple FTTx<sup>4</sup> access nodes between the BT local exchange and customer premises.
- 1.7 CP's ability to generate economies of scale and scope underpinned the investment in rival LLU infrastructure to BT's. Infrastructure competition based on LLU has been a key contributory factor to the positive outcomes delivered in the UK telecoms sector over the past ten years. The benefits of LLU investment cannot be underestimated: it provided strong sustainable competition and innovation across a wide range of communications services and delivered substantial benefits to consumers.
- 1.8 Ofcom's concerns that CPs will cherry pick the most profitable customers and thereby undermine BT's ability to recover its common costs, if it introduces duct access in addition to dark fibre, are overestimated and a short term risk to BT. Duct access alongside dark fibre access on the right rights terms and conditions would have very material benefits to CPs and would provide the basis for establishing infrastructure based competition to BT in the long term.
- 1.9 It is Sky's view that cost based pricing, rather than Ofcom's proposed active minus pricing, will better promote competition and deliver the most benefits to consumers. The proposed active minus pricing will significantly limit demand for and the potential benefits of passive remedies compared to cost based pricing. Further, even using Ofcom's framework for assessing potential pricing approaches, the evidence suggests that cost based pricing is the most appropriate approach for dark fibre.
- 1.10 Sky supports the introduction of minimum quality of service standards for Ethernet provisioning and repairs. However, whilst minimum standards are a step in the right direction, Ofcom should: (i) set stricter provisioning standards; and (ii) restrain BT's ability to invoke deemed consent from its customers to change the delivery date in a range of circumstances without incurring SLG payments ("deemed consent") as well as imposing stricter controls on the declaration of MBORCs<sup>5</sup> by BT. Use of deemed consent by BT is common place and material. Industry wide, Ofcom estimates that around 70% of orders were subject to at least one deemed consent. Sky estimates that for around [REDACTED] of its backhaul orders BT avoided SLG liability using deemed consent. This would be higher, if Sky were active in the enterprise business segment.

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<sup>4</sup> FTTx collectively refers to Fibre-to-the-Cabinet (FTTC), Fibre-to-the Distribution Point (FTTdp), Fibre-to-the-Basement (FTTB and Fibre-to-the-Premises (FTTP).

<sup>5</sup> Declarations of "Matters Beyond Our Reasonable Control" which dis-apply SLAs.

1.11 Notwithstanding Ofcom's proposals to introduce passive remedies, it is clear that CPs will continue to rely on active remedies for the foreseeable future. Accordingly, it is essential that Ofcom maintains effective regulation of BT's active products, especially price regulation, ensures that inappropriate costs are removed from the charge control (Group overhead costs and the dark fibre cannibalisation costs appear excessive), resists placing additional costs on CPs for improving Openreach's poor service performance, and estimates a robust cost of capital for each component of the BT Group.

1.12 The remainder of this response comprises the following sections:

**Part I Sky's response to BCMR consultation**

**Section 2: Introduction and market context**

**Section 3: Importance of active products for this review period and beyond**

**Section 4: Unconstrained access to dark fibre and ducts will provide the scale and scope economies to invest in alternative fibre infrastructure**

**Section 5: Complementary duct and dark fibre access will promote greater competition in alternative fibre infrastructure**

**Section 6: Duct access does not pose the risks of price rebalancing and common cost recovery Ofcom suggests**

**Section 7: Dark fibre must be fit for purpose to promote take up: flexible in design and priced on a cost plus basis**

**Section 8: Pricing dark fibre on an 'active minus' basis will constrain demand**

**Section 9: Service quality**

**Part II Sky's response to LLCC consultation**

**Section 10: Ofcom's proposed leased line charge controls appear to include significant inappropriate costs**

**Section 11: Ofcom's proposed cost of capital for Openreach copper, and other UK telecoms, are too high**

**Annex A: The limitations of Ofcom's proposed dark fibre remedy to support fibre investment in backhaul**

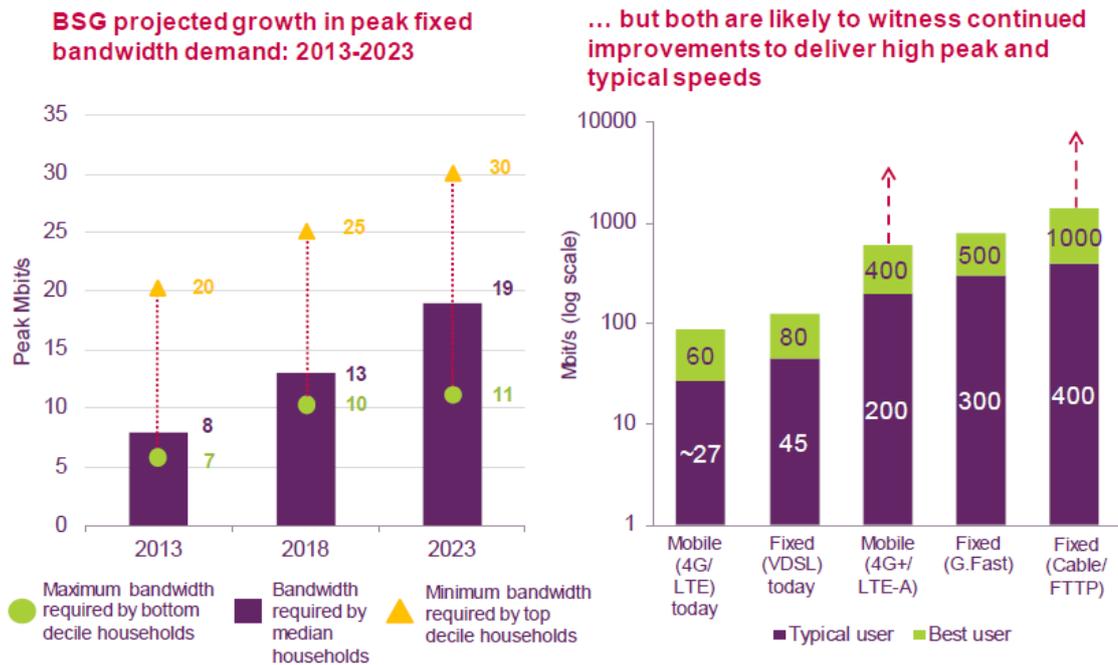
**Part I – Sky's response to BCMR consultation**

**2. Introduction and market context**

2.1 Sky is an LLU operator providing residential broadband and telephony services to over 5.2 million customers and will soon be launching mobile services. As such, has a key interest in the BCMR consultation and the LLCC consultation.

2.2 As data usage over consumer fixed and mobile connections continues to increase, so too does LLU and mobile operator demand for backhaul bandwidth (see Figure 1).

**Figure 1: Potential future bandwidth demand and network capabilities<sup>6</sup>**



2.3 As highlighted in Sky's response to Ofcom's BCMR Call for Inputs (the "CFI response"), over the market review period, Sky anticipates that it will require increasingly higher bandwidth LLU backhaul<sup>7</sup> capacity in order to keep pace with:

- (a) rapid growth in data usage in terms of speeds required by consumers; and
- (b) continued growth in broadband subscriber volumes as a result of both market-wide increasing broadband penetration and growth of Sky's market share.

2.4 Sky expects to continue to upgrade the capacity of its backhaul links [REDACTED]  
[REDACTED]  
[REDACTED]<sup>8</sup>].

2.5 The demand for higher bandwidth means that high capacity fibre is the strategic long term solution to the backhaul requirements of LLU, mobile and increasingly fixed-mobile converged hybrid networks. Sky recognises that passive remedies could allow CPs to:

- (a) expand network capacity in current on-net areas (and develop mobile backhaul) without repeated upgrade costs;
- (b) invest and innovate to expand the scope of services offered, similar to investments in LLU; and
- (c) re-evaluate opportunities to invest in NGA for residential and business customers.

2.6 CPs like Sky face the risk of significantly increasing input costs, given the current pricing structure of Openreach's higher bandwidth backhaul services. As highlighted in Sky's response to the BCMR CFI these rising backhaul costs could have a number of negative implications for consumers, including:

<sup>6</sup> Figure 9 of the SRDC.

<sup>7</sup> And now mobile backhaul. Sky has announced its intention to launch mobile services in 2016 and will rely on its MNO host, Telefonica, for mobile backhaul. Where Sky refers to mobile backhaul does so in the sense that it indirectly relies on mobile backhaul via Telefonica.

<sup>8</sup> Paragraph 2.3, Sky's response of 16 June 2014 to Ofcom's Call for Inputs of 1 April 2014.

- (a) increasing retail broadband prices;
  - (b) receding growth in broadband penetration;
  - (c) weakened incentives for LLU operators to invest in unbundling additional local exchanges, limiting effective choice between broadband services;
  - (d) weakened incentives for CPs to invest through upgrading capacity; and
  - (e) greater incentives for CPs to manage traffic and impose usage caps.
- 2.7 High barriers to entry mean that BT is likely to remain the dominant business connectivity provider for the foreseeable future. Openreach, as the only CP with a national network has a distinct advantage over other smaller providers. BT's market power, in the provision of LLU (and mobile) backhaul links, is entrenched and is likely to endure over the review period, even with the proposed introduction of dark fibre.
- 2.8 Sky and other CPs rely to a significant extent on Openreach for LLU and mobile backhaul and Sky does not expect this to change over the review period. Today, Sky has no effective alternative supply for ██████<sup>9</sup> of its unbundled exchanges. There is limited self-supply and competitive provision from third parties. Due to the ubiquity of its network combined with the benefits achieved from offering single nationwide solutions, Openreach is, and will inevitably remain, the key LLU and mobile backhaul provider for Sky.

### **3. Importance of active products for this review period and beyond**

- 3.1 In Sky's view, the lack of competition on the majority of routes where Sky requires higher bandwidth LLU backhaul, the low likelihood of market entry on these routes and the inefficiencies of procuring LLU and mobile backhaul from multiple suppliers, all point towards Openreach's 'middle mile' fibre and duct network being an enduring economic bottleneck.
- 3.2 As set out above, the demand for higher bandwidth means that high capacity fibre is the strategic long term solution for much of a LLU and mobile operator's backhaul requirements. However, this will require long term investment and any transition to competing products developed using passive access will invariably be a gradual process
- 3.3 Accordingly, as Ofcom rightly acknowledges<sup>10</sup>, during this review period and beyond, CPs will continue to rely heavily on active remedies. As such, whilst the focus on passive remedies for the future is important, active products are currently, and will remain for the period of the market review and beyond, the most important business connectivity market products for CPs. This is also due in part to the fact that:
- (a) CPs have long term contracts with Openreach;
  - (b) Dark fibre access is not a substitute for low bandwidth products; and
  - (c) CPs/businesses may not have the required scale for deeper infrastructure investment using passive access inputs, or may not be able to invest in passive access at this point in time.
- 3.4 With this in mind, it is crucial that active product regulation remains strong both as regards applicable charge controls and service quality. Sky addresses issues specifically related to the regulation of active products in sections 9 and Part II below.

<sup>9</sup> Paragraph 3.3, Sky's response of 16 June 2014 to Ofcom's Call for Inputs of 1 April 2014.

<sup>10</sup> Paragraph 1.28 of the BCMR consultation.

#### **4. Unconstrained access to dark fibre and ducts will provide the scale and scope economies to invest in alternative fibre infrastructure**

- 4.1 Ofcom's objective<sup>11</sup> in the BCMR consultation is to promote effective and sustainable competition, innovation and choice based on alternative fibre infrastructure. Ofcom recognises that the level of investment required by a third party to deploy alternative fibre infrastructure is a significant barrier to entry<sup>12</sup>. Given the economic challenges, it is unlikely that CPs will duplicate BT's network and build new ducts to lay fibre networks at sufficient scale. Access to BT's ducts, poles and dark fibre are necessary therefore for investment in competing alternative fibre infrastructure. Without access to BT's infrastructure, it will be challenging for CPs to make the case to invest in alternative fibre networks and contrary to Ofcom's objective effective infrastructure based competition is unlikely to emerge.
- 4.2 A viable business case for investment in alternative fibre infrastructure depends on using the most cost efficient and flexible deployment method. In some geographic areas, access to ducts and poles will be the appropriate means of delivering fibre to consumers, whereas in other areas, new construction or use of dark fibre may be preferable. Access to BT's ducts, poles and dark fibre are therefore essential inputs to any business case for investment in alternative fibre infrastructure. Such a mixed investment approach would provide CPs with the flexibility to build business models using a variety of available wholesale remedies and foster greater innovation and competition.
- 4.3 The economics of network investment are challenging. They depend to a considerable extent on the ability of alternative network providers to generate sufficient demand to justify the substantial costs of the investment. The ability to generate sufficient demand will depend on the type of services that will use the alternative fibre infrastructure and the size of the customer base. Restrictions on the type of downstream application and customer types serviced by the alternative fibre network infrastructure are likely to render unviable an alternative fibre infrastructure investment case. . Increased economies of scale and scope via unconstrained use of its own fibre network and for services at all bandwidths and to all customers, will enable competing CPs to generate revenue to justify the substantial costs of investment in alternative fibre infrastructure.
- 4.4 LLU demonstrates the benefits of an unconstrained, fit for purpose, passive access remedy and offers a roadmap for the design of passive access remedies in business connectivity markets. While Ofcom introduced LLU primarily to address competition concerns in residential broadband markets, it placed no constraint on its usage in terms of the downstream products that consume LLU. As a result, LLU is the wholesale upstream input to services that sit in different downstream wholesale and retail markets, i.e. both traditional broadband or superfast broadband, fixed voice telephony and high capacity symmetric Ethernet services ("Ethernet in the first mile") which are identical to Ethernet leased lines (although reliance on the copper line limits service capability). The unconstrained use of LLU has enabled LLU operators to maximise their scale and scope efficiencies and accordingly has been instrumental in the take up of the remedy. This has in turn delivered greater infrastructure based competition in the provision of multiple communications services across different markets.
- 4.5 Sky therefore considers that unconstrained access to duct, poles and dark fibre in terms of downstream application is required to provide the greatest opportunity for CPs to realise the economies of scale and scope needed to justify business cases for investment in alternative fibre infrastructure. Sky sets out in the following sections how Ofcom's proposals in respect of passive remedies reduce potential economies of scale and scope. Specifically Sky discusses:

<sup>11</sup> Paragraph 1.25 of the BCMR consultation.

<sup>12</sup> Paragraph 8.29 of the BCMR consultation.

- (a) how complementary access to dark fibre, poles and ducts is crucial in order to maximise the benefits of passive remedies;
- (b) how Ofcom overstates the risk of a complementary duct access remedy;
- (c) how restrictions on the proposed dark fibre remedy reduce the potential benefits the remedy can offer; and
- (d) how cost based pricing is more appropriate than active minus pricing for dark fibre, which will constrain demand and limit investment.

**5. Complementary duct and dark fibre access will promote greater competition in alternative fibre infrastructure**

5.1 Ofcom itself has identified the significant additional benefits duct access can deliver when provided alongside dark fibre. For example Ofcom accepts that duct access would:

- (a) *“allow CPs to deploy infrastructure for additional services alongside leased lines; and*
- (b) *provide an infrastructure component which could help a CP to assemble fibre networks in cities in the form of rings rather than in BT’s “tree-and-branch” architecture.”*<sup>13</sup>

5.2 Sky considers that whether dark fibre or duct access (or a mixed deployment) is more suitable and efficient will depend on the specific usage case<sup>14</sup>. Duct access is, however, a prerequisite to promote investment in alternative fibre infrastructure.

5.3 As set out above, and acknowledged by Ofcom<sup>15</sup>, the business case for investment in alternative fibre infrastructure depends on CPs’ ability to achieve economies of scale and scope in order to recover the considerable up-front costs associated with building networks to provide leased lines. Sky considers that such investment requires access to both BT’s dark fibre and ducts. This will enable CPs to make efficient investment decisions and unlock the potential for CPs to achieve the requisite economies of scale and scope economies.

5.4 

5.5 It is Sky’s view that fit for purpose passive access to BT’s ducts and poles alongside dark fibre would likely reduce the cost of deployment and increase the opportunity for investment in alternative fibre infrastructure.

5.6 Sky also notes Ofcom’s objective as recently set out in its SDRC – to ensure sustainable competition and efficient incentives to invest in communications services. As part of its SDRC, Ofcom is debating the model of competition it should promote to achieve its stated objective. Two of the three models of competition put forward are variations of infrastructure investment in alternative fibre network: (i) to promote end-to-end competition by promoting CPs’ own network build; or (ii) to promote infrastructure competition based on passive access<sup>16</sup>. The BCMR consultation provides Ofcom with an

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<sup>13</sup> Paragraph 7.44 of the BCMR consultation.

<sup>14</sup> For further information on these usage cases please see Annex 1 to Sky’s response to Ofcom’s consultation on passive remedies.

<sup>15</sup> Paragraph 8.29 of the BCMR consultation.

<sup>16</sup> Paragraph 9.5-9.7 of the SRDC.

early opportunity to promote infrastructure based competition through the provision of effective passive access – a fit for purpose dark fibre product combined with duct access will promote greater investment in alternative fibre infrastructure and promote competition in backhaul supply and other communications services.

- 5.7 Separately, Sky does not consider that the EU Civil Infrastructure Directive (“CID”)<sup>17</sup> will provide CPs with the requisite certainty in relation to duct access. Whilst the CID will enable CPs to request duct access, it will not provide certainty up-front on the terms for such access and any disputes arising under the CID will need to be resolved (potentially by Ofcom) on an ex post basis. Ofcom ought to instead take this opportunity to address those issues by mandating duct access and regulating the associated terms of access.

**6. The risks of price rebalancing and common cost recovery are overstated and do not outweigh the benefits of duct access**

- 6.1 In considering the potential risks of duct access, Ofcom focuses on the potential negative impact on BT’s ability to recover common costs due to: (i) “arbitrage”; and (ii) price rebalancing. Sky considers that Ofcom overestimates both of these risks. Sky also considers that Ofcom’s assessment of the incremental risk posed by duct access as compared to dark fibre does outweigh the benefits of a complementary duct access remedy.

*The risk to common cost recovery from “arbitrage” opportunities and concerns relating to price rebalancing are overstated*

- 6.2 Ofcom is concerned that the introduction of passive remedies would hinder BT recovering its efficiently incurred costs due to CPs cherry picking opportunities. This, however, fundamentally ignores: (i) the benefits of passive access in network investment; and (ii) the success of, and lessons learned from, LLU.
- 6.3 CPs prioritise investments that are most economically viable. In the case of LLU, CPs have in the first instance invested in unbundling the most profitable exchange. Less profitable exchanges being subsequently unbundled with the benefit of the CPs’ prior experience and service innovations. Although there was arbitrage, it ultimately facilitated the further roll out of LLU in less profitable exchanges and currently to around 95% of UK premises.
- 6.4 Moreover, despite such phased investment, LLU did not prevent BT to recover its common costs. Common cost recovery should not stand in the way of passive remedies as this is a short term risk that can be addressed through the setting of appropriate charges. The process by which Ofcom forecasts future usage of active and passive remedies may result in short term variance in cost recovery. However, it should be recognised that this can result in both over and under recovery of common costs. In any event, this short term risk is significantly outweighed by the potential long term benefits of passive remedies in promoting investment in alternative fibre infrastructure and strong and sustainable competition in the supply of communications services.

*Access to both remedies will mitigate any incremental risks presented by duct access over dark fibre*

- 6.5 Ofcom highlights a number of incremental risks posed by duct access as compared to a dark fibre remedy, which it suggests result in potential arbitrage opportunities that could reduce BT’s ability to recover its common costs. Sky considers that Ofcom has overstated these incremental risks.

Geographic density of network usage

<sup>17</sup> Article (3), Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks.

- 6.6 Ofcom is concerned that a duct access remedy could enable CPs to take advantage of BT's current geographically averaged pricing structure (i.e. uniformity of circuit prices irrespective of intensity of usage), such that CPs would only take up the remedy in areas of above average utilisation. Ofcom considers that this would allow CPs to rent a single portion of duct and provide multiple active circuits to customers.
- 6.7 In Ofcom's view, if there was a single unit charge for duct access, BT could stand to lose multiple active line revenues (and their associated common cost contribution), instead receiving a single duct revenue (with lower common cost contribution)<sup>18</sup>. Ofcom suggests that this risk is lower for dark fibre as the same opportunities to offer multiple active circuits on the basis of one unit of fibre do not exist.
- 6.8 Sky considers that Ofcom overstates the risk in relation to duct access, as this risk can be mitigated through the applied pricing structure. Single unit charges for duct access are not the only available pricing option<sup>19</sup>. A usage based charge, which increases the contribution to common costs based on the number of active lines provided by CPs using a single duct would mitigate this risk.

#### Bandwidth gradient

- 6.9 Ofcom argues that both dark fibre and duct access is likely to lead to some rebalancing of prices for active services. This would be as a result of passive remedies cannibalising the use of high bandwidth active services that make a greater contribution to common costs.
- 6.10 As set out at section 8, Sky and Frontier Economics do not consider that the current active pricing gradient reflects efficient pricing decisions by BT to increase demand. This is due to both the inelastic demand for leased line services and BT's incentives to maximise profit as opposed to output.
- 6.11 Price rebalancing is unlikely to result in a negative impact on output for market participants.
- 6.12 It is also not evident that the introduction of duct access, with usage based pricing, alongside a dark fibre product would lead to a greater risk of price rebalancing, than with a dark fibre remedy alone.

#### Risk of stranded assets

- 6.13 Ofcom argues that a duct access remedy poses a greater risk of stranded assets than a dark fibre remedy. In particular, Ofcom is concerned that duct access would result in less use of the existing BT infrastructure and therefore lead to a greater risk of inefficient use of existing fibre.<sup>20</sup> Whilst this argument may have merit if duct access and dark fibre were mutually exclusive remedies, it carries less weight in circumstances where duct access is considered as a necessary and complementary remedy to dark fibre.
- 6.14 Sky does not agree that there is a risk of duplication of fibre along routes that would lead to stranded assets. Where CPs have access to appropriately priced duct and dark fibre products (and there is fibre available on the route that a CP wishes to connect) there should be little reason for duplication of fibre along that route. CPs would purchase the appropriately priced dark fibre product and avoid the cost of installing additional fibre. In circumstances where there is no fibre available within the duct, or the dimensions or specifications required by the CP are not met by the available fibre, duct access will allow CPs to invest in their own fibre. Any such investment would be a positive step in the roll out of alternative fibre networks and will not result in stranded assets. Duct access in this way would afford CPs significantly greater flexibility in product design.

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<sup>18</sup> Paragraph A24.53 of the BCMR consultation.

<sup>19</sup> The current PIA charging structure implements a usage based charging scheme, with "lead in link" products used for individual customer connections charged separately from the "spine" duct carrying shared cable.

<sup>20</sup> Paragraph A24.65 of the BCMR consultation.

## 7. Dark fibre must be fit for purpose to promote take up: flexible in design and easy to use

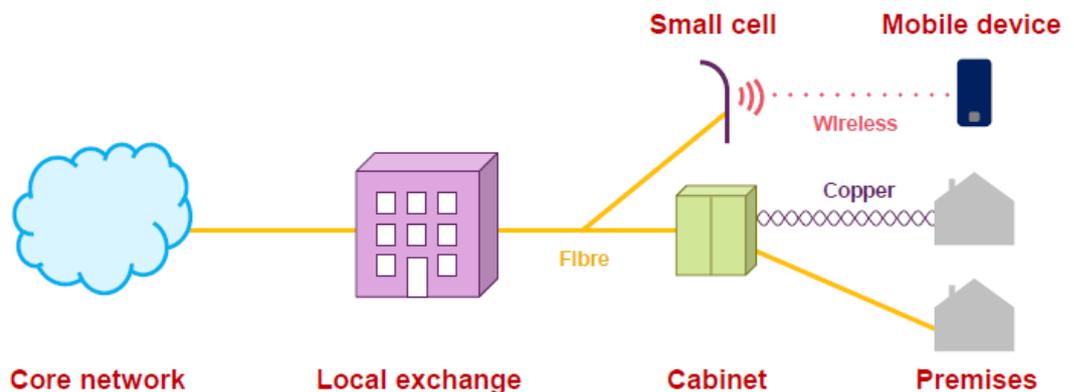
7.1 In order to promote take up of passive remedies and accordingly infrastructure based competition for the benefit of consumers, any passive remedy must be fit for purpose. Sky considers that a fit for purpose dark fibre remedy would be one that is: (i) flexible in design; and (ii) easy to use.

7.2 Sky sets out below why Ofcom's proposed design of the dark fibre remedy does not support the investment case for alternative fibre network roll out.

### *Flexible in design*

7.3 The boundary for aggregation of business and residential traffic is shifting. It is no longer the case that BT's local exchange is the sole aggregation point at which traffic is handed over to a competing network provider. As recognised by Ofcom in the SRDC, convergence of fixed and mobile networks is resulting in changing backhaul requirements, with mobile networks, in particular due to the increased use of small cells, requiring access to fibre backhaul closer to customer premises<sup>21</sup>. Similarly, the development in superfast and ultrafast broadband (for example G.Fast deployment) services may also strengthen the need for contestable backhaul supply in BT's access network closer to customer premises (see figure 2).

**Figure 2: Convergence of fixed and mobile networks<sup>22</sup>**



### Mirroring the Ethernet Access Direct (EAD) configuration

7.4 Ofcom's proposal is that dark fibre must mirror the Openreach EAD design. Accordingly, each intermediary aggregation point must have its own dark fibre access, rather than cascading the aggregation points along a single fibre (pair).

7.5 In order for the dark fibre remedy to be fit for purpose, CPs should be able to backhaul traffic between the intermediary points of aggregation before the BT local exchange in the specific distance combinations that they require. The dark fibre design should therefore be sufficiently flexible to allow connection of any two intermediary aggregation points (whether to each other or to the BT local exchange) without requiring that each intermediary point is linked to the BT local exchange in a mirror image of Openreach's EAD design (i.e. where every backhaul link irrespective of its length ends at / is routed via the serving BT local exchange).

<sup>21</sup> Paragraphs 8.19-8.21 of the SRDC.

<sup>22</sup> Figure 23 of the SRDC.

7.6 EAD Local Access (“LA”) is priced at a fixed price, irrespective of the distance between customer premises and the serving BT local exchange. If, therefore, a CP chooses to backhaul traffic from three intermediary aggregation points served by the same serving BT local exchange, the CP would be obliged to purchase three dark fibre services priced at the same fixed price (i.e. ignoring the distance from the serving exchange).

7.7

*The dark fibre remedy must be easy to use*

7.8 The dark fibre remedy should be easy and transparent to use in order to encourage take up and provide CPs with greater certainty to invest. The difficulty in identifying available resources/network capacity under the PIA remedy<sup>23</sup> explains to some degree the disappointing level of take up compared to LLU.

7.9 BT provides an infrastructure discovery tool for EAD services via the Openreach customer portal. Assuming that all passive remedy usage restrictions are removed, an augmented version of this tool could be integrated with online infrastructure discovery for PIA. This would enable CPs to choose the most appropriate infrastructure out of ducts, poles and dark fibre, for example, to enable requirements for short distances of dark fibre to be delivered more efficiently using duct.

**8. Pricing dark fibre on an ‘active minus’ basis will constrain demand**

*The price of dark fibre must enable CPs to compete*

8.1 Sky considers that to encourage take up and enable CPs to compete downstream, dark fibre should be priced on a cost plus basis. Ofcom, however, is proposing an active-minus pricing approach with a single reference product. The price of dark fibre is therefore proposed to be set at the prevailing price for the relevant active EAD 1 Gbit/s service, less the estimated avoidable Long Run Incremental Cost (LRIC) of the active components used in providing the service.

8.2 In this section, Sky explains why it considers, even using Ofcom’s framework of analysis, cost based pricing is the preferable pricing approach for dark fibre. It then outlines how Ofcom’s proposed active-minus pricing approach for dark fibre with a single reference product of EAD 1 Gbit/s will severely constrain demand for dark fibre in approximately two thirds of the market for leased lines. Sky then explains why this problem is compounded by the lack of transparency in the way the LRIC “minus” component will be calculated. These deficiencies in Ofcom’s approach risk undermining the objectives of Ofcom’s proposed dark fibre access remedy and may fail to promote effective competition in the provision of business connectivity services and other communication services.

*A cost based pricing approach delivers significantly greater benefits than an active-minus approach*

8.3 Sky sets out below why cost based pricing is the preferred approach for pricing dark fibre based on Ofcom’s framework of analysis of the potential pricing options. In particular, Sky highlights the fact that under Ofcom’s proposed active minus pricing approach, dark fibre will deliver significantly fewer benefits to consumers than could be realised under a cost based pricing approach.

<sup>23</sup> This was imposed on BT in the wholesale local access market as part of the Fixed Access Market Review.

- 8.4 Ofcom evaluates two pricing approaches for dark fibre, an active minus approach (as explained above) and a cost based approach (where the price is set with reference to the costs of providing the dark fibre service). Ofcom assesses the relative merits of each approach with respect to the following:
- (a) economic efficiency (allocative, dynamic, and productive);
  - (b) compatibility with active remedies/risk of arbitrage;
  - (c) risk of gaming; and
  - (d) ease of implementation.

Ofcom concludes that an active minus pricing approach with a single reference product is more appropriate than a cost based approach.

- 8.5 Sky, however, does not agree with the conclusion Ofcom draws from its analysis. In particular, Sky considers that:
- (a) Ofcom's analysis of the allocative efficiency benefits relies on the incorrect assumption that the current active pricing gradient is efficient, and should therefore be maintained;
  - (b) Ofcom's analysis of the allocative efficiency ignores the potential for active minus pricing to lead to active price rebalancing, similar to cost based pricing;
  - (c) Ofcom underestimates the significant benefits that cost based pricing can provide with respect to dynamic efficiency; and
  - (d) Ofcom overstates the difficulty of implementing cost based pricing while ignoring the significant complexities of monitoring an active minus pricing regime.

#### *Allocative efficiency*

- 8.6 Ofcom concludes that active minus pricing is more attractive in terms of allocative efficiency (i.e. maximisation of demand at consumer level) than cost based pricing. This conclusion is based on an assumption that the current tariff gradient (which active minus pricing will help to maintain) is efficient. Ofcom also considers that a cost based approach would perform poorly in comparison as it would drive the market towards a relatively flat pricing structure, with minimal scope to account for consumer demand in price setting<sup>24</sup>. Sky does not agree with this assessment.
- 8.7 As set out in Sky's response to the Preliminary Consultation on Passive Remedies, Sky does not consider the current tariff gradient to be efficient<sup>25</sup> because:
- (a) demand for leased line circuits is relatively inelastic as it is driven by end-user data usage. There is no evidence that the current tariff gradient has therefore been set in response to changing demand for leased lines. Indeed if leased line prices were to change in response to dark fibre, there is no evidence that demand would be significantly affected; and
  - (b) Openreach's incentive as a network operator is to maximise profits from leased lines, not necessarily total output.
- 8.8 Ofcom's assessment in the BCMR consultation presents no evidence to indicate that the current tariff gradient is efficient and should be maintained.
- 8.9 Furthermore, even if the current tariff gradient were currently efficient, it is unlikely to remain efficient in the future due to changes in demand for bandwidth, as customers

<sup>24</sup> Paragraph A26.106 of the BCMR consultation.

<sup>25</sup> Paragraph 2.3 of Sky's response to Ofcom's Preliminary Consultation on Passive Remedies, 5 November 2014.

migrate to higher bandwidth services. Price rebalancing would be necessary to avoid over-recovery of common costs.

- 8.10 A flattening of the tariff gradient is unlikely to have a significant impact on demand for large consumers due to the inelastic nature of the services it is used for (connections for large corporates, LLU and VULA backhaul, and mobile backhaul). Indeed, the charge controls on active products mean that a flattening of the gradient is likely to materialise as an accelerated decline in the price of active services at 1 Gbit/s and above as opposed to any increases in price. This will benefit leased line customers and consumers.
- 8.11 Further, even if allocative efficiency required maintenance of the current tariff gradient, Ofcom's active minus approach is not significantly better than a cost based approach at achieving this. The charge controls on active products at and below 1 Gbit/s mean that a flattening of the tariff gradient through an accelerated decline in the price of active services at 1 Gbit/s and above is likely to arise under an active minus approach, as BT aims to maintain the competitiveness of its services above 1 Gbit/s with dark fibre based services. This is similar to the likely rebalancing under a cost based pricing approach for dark fibre, given the same charge controls on active products.
- 8.12 Sky therefore considers cost based pricing is similar to active minus based pricing in terms of allocative efficiency.

*Dynamic efficiency in active products*

- 8.13 Ofcom evaluates the merits of the different pricing approaches with respect to both investment in improving or developing the suite of backhaul and other active business connectivity services and alternative fibre network investment (i.e. dynamic efficiency).
- 8.14 With respect to investment in the supply of competing leased lines, Ofcom recognised that the active minus pricing approach is qualitatively half as good as cost based pricing in promoting investment, based on the lower opportunity to invest under an active minus approach as fewer lines are contestable<sup>26</sup>.
- 8.15 Although Sky broadly agrees with the assessment, Ofcom appears to over-estimate the dynamic efficiency benefits of the active minus approach. Specifically:
- (a) Ofcom's proposed approach will significantly limit the scope for the promotion of competition in the provision of leased lines, as Ofcom estimates that dark fibre will only be economically viable to provide competing circuits at 1 Gbit/s and above (one third of the leased lines by 2019).<sup>27</sup> Given that the 'minus' component of the price will be LRIC based (discussed in more detail above), CPs may not even be able to compete for the supply of 1 Gbit/s lines.
  - (b) There will also be greater uncertainty with respect to dark fibre pricing under an active minus regime compared to a cost based one, as prices will be dependent on both BT's decisions on active pricing and annual data on LRIC avoidable costs and could be subject to gaming. This could deter efficient investment.

*Dynamic efficiency in passive infrastructure*

- 8.16 In evaluating pricing approaches with respect to dynamic efficiency in passive infrastructure, Ofcom assesses cost based prices to be significantly worse than its proposed active minus approach. This is primarily due to a perceived risk of cost based pricing lowering prices and therefore reducing expected returns on competing CPs' existing investments in alternative fibre network infrastructure by stranding the assets of competitive CPs that build their own networks.

<sup>26</sup> Table A26.3 of the BCMR consultation.

<sup>27</sup> Figure 6.1 of the LLCC consultation.

- 8.17 As set out in the Frontier Report “it is not clear why any of the investment of alternative infrastructure-based providers of active services should be stranded as the overall level of prices will not be reduced, only the structure of prices altered. There is nothing preventing existing infrastructure operators from rebalancing active prices, to minimise any net loss of its active customers following the introduction of dark fibre access on BT’s network.”<sup>28</sup>
- 8.18 Further cost based dark fibre pricing would provide operators with greater levels of transparency and certainty on future pricing. This would provide CPs with more appropriate build or buy decisions.
- 8.19 Sky therefore disagrees with Ofcom’s assessment with respect to dynamic efficiency in passive infrastructure, and considers that cost based pricing offers significant benefits over active minus pricing.

#### *Ease of implementation*

- 8.20 When assessing the ease of implementation of pricing approaches, Ofcom favours an active minus approach. In its assessment, Ofcom both overstates the difficulty of a cost based pricing approach and understates the complexity of an active minus approach.
- 8.21 Ofcom states that it would be impractical to set prices based on a bottom up approach that involves modelling the cost of the passive network infrastructure and sharing the cost between CPs using the infrastructure.<sup>29</sup> However, as set out in the Frontier report, cost based prices could be calculated relatively simply using the same cost data used to set active service charge controls. The difficulty of this approach is therefore overstated.
- 8.22 Ofcom states that active minus price setting would be a mechanical exercise once the benchmark product is specified.<sup>30</sup> This appears to ignore the additional complexity and resource that would be required for BT to estimate and set the LRIC based avoidable costs on an annual basis, compared to simply adhering to cost based charge controls.
- 8.23 It also ignores the complexity and resources required by BT, competing CPs, and Ofcom, in the event of any disputes as to the estimated LRIC component of dark fibre charges given the substantial scope for gaming and errors. This would be avoided by cost based pricing.

#### *Summary*

- 8.24 In summary, Sky considers that Ofcom’s assessment of potential approaches to pricing dark fibre overstates the risks of cost based pricing and the benefits of an active minus approach. Sky considers that the evidence suggests that cost based pricing is the most appropriate approach for dark fibre access and will increase the likelihood of more effective backhaul competition.

#### *Proposed dark fibre pricing ensures that most of the market is not contestable*

- 8.25 Sky set out in its response to Ofcom’s preliminary consultation on passive remedies that the benefits of appropriately priced passive access include promoting effective and sustainable competition across more of the value chain which could lead to greater investment in alternative fibre infrastructure and more innovation. This could in turn result in higher levels of product differentiation, price competition, cost minimisation and service quality to the benefit of all end users of leased line products.
- 8.26 Under the current pricing proposal, it would be more expensive for CPs to use dark fibre to self-supply or provide competing Ethernet products at bandwidths below 1 Gbit/s, than to take BT’s active product, rendering the remedy unviable for these uses. The impact of this is that that dark fibre will not be a viable alternative for two thirds of the market (see Figure 3).

<sup>28</sup> Frontier 5.2.4

<sup>29</sup> Paragraph A26.138 of the BCMR consultation.

<sup>30</sup> Table A26.7 of the BCMR consultation.

**Figure 3: Ofcom forecast of Ethernet circuit volumes (installed base)<sup>31</sup>**

- 8.27 The proposed active minus approach therefore risks not only precluding any investment in dark fibre to compete for services below 1 Gbit/s, but also removes potential economies of scale and scope that CPs could benefit from if able to address the whole market. This could therefore reduce the ability of CPs to compete for services at and above 1 Gbit/s.
- 8.28 Furthermore, the active minus pricing approach will remove any potential for the benefits of increased competition to be enjoyed by users of services below 1 Gbit/s as CPs will not be able to use the dark fibre input to provide competitive active services in this market (two thirds of the market by circuits in 2018/19).<sup>32</sup>

***Setting the 'minus' element at LRIC may additionally make 1 Gbit/s services uncontestable***

- 8.29 Ofcom proposes that BT calculates the 'minus' element based on a LRIC cost standard. This means that the difference in price between the active 1 Gbit/s product and the dark fibre product will be equal to the estimated efficiently incurred costs avoided by BT in providing dark fibre, namely active electronics and installation costs. This will be recalculated on an annual basis.
- 8.30 Sky is concerned that the LRIC costs avoided by BT in providing dark fibre may be lower than the costs that Sky and other competing CPs would incur in using dark fibre to provide competing 1Gbit/s services. For example:
- the increased economies of scope afforded to BT through its opportunity to make unconstrained use of its own network, and for services at all bandwidths, may enable BT to achieve lower unit costs than equally efficient competing CPs; and
  - BT may be incentivised to game the LRIC estimate to include as few costs as possible, to limit the economic viability of the dark fibre product.

<sup>31</sup> Figure 6.1 of the LLCC consultation

<sup>32</sup> The users of these services are likely to be smaller businesses with lower bandwidth requirements that could benefit significantly from greater competition.

- 8.31 The dark fibre service may not be economically viable therefore as a wholesale input to 1 Gbit/s active services. This would significantly reduce the benefits of dark fibre for the market as a whole, effectively making even less than a third of the leased line market contestable.
- 8.32 Sky also considers that Ofcom's guidance which sets out how the LRIC estimate of the 'minus' component should be estimated by BT is insufficiently clear to enable Sky and other CPs confidently to estimate the price set by BT. This risk of gaming is exacerbated by the fact that the price will require annual recalculation means such that Sky (and other CPs) will not be in a position to know in advance what the dark fibre pricing will be. This inherent uncertainty may further limit investment in the dark fibre product and reduce the overall market benefits.

## 9. Service quality

- 9.1 As recognised by Ofcom, Openreach is the largest wholesale provider of telecommunications services in the UK and Openreach's service performance underpins to a significant extent the level of service received by consumers and businesses.<sup>33</sup> Sky agrees with Ofcom's analysis of Openreach's poor and deteriorating performance as set out in the BCMR consultation. Similarly, Sky concurs that Openreach has insufficient existing incentives to make any material changes that would lead to improved service. For these reasons Sky supports Ofcom's proposal to regulate Openreach's quality of service in the BCMR consultation.
- 9.2 Sky supports Ofcom's proposed introduction of minimum quality of service standards underpinned by penalties in the event Openreach does not meet such standards. However, Sky considers that the proposals do not go far enough. In order to deliver real benefits to consumers and competition, Ofcom should set higher minimum standards. In particular, the proposals ought to be improved by:
- (a) **imposing more demanding performance targets** - Openreach and the industry are working hard to implement a new approach to provisioning<sup>34</sup> and are already achieving material improvements for a large number of orders with expectations that even greater improvements will follow. Given that it is expected that Openreach can achieve improved performance relatively quickly, a conservative period of transition such as that suggested by Ofcom is not appropriate. It is a retrograde step, therefore, to base the minimum standard through to 2017 on Openreach's lowest level of achievement recorded in 2014 and to have to wait until 2018 for a return to the acceptable levels of 2011. Ofcom should not accept that any improvements to quality of service can only be delivered with greater resources but should consider the potential for Openreach to deliver improvements in service quality with existing resources (see further section 10 below); and
  - (b) **including OSA<sup>35</sup> and OSEA<sup>36</sup> in the product set covered by the minimum standards** - by excluding OSA and OSEA services from products covered by the minimum standards, there is a significant risk that these services will be deprioritised and subject to even worse provisioning.

<sup>33</sup> Figure 37 of the SRDC.

<sup>34</sup> Known as the Differentiated Order Journey (DoJ), the initiative is accompanied by improvements to, amongst other things, Openreach's work practices and management of third party contractors, which has already delivered performance improvements. We would however, offer a note of caution that there is still significant work to be done and differences of view to be agreed between Openreach and the industry.

<sup>35</sup> Optical Spectrum Access transports optical circuits of 1 – 10 Gbit/s over DWDM covering a maximum route distance of 103km.

<sup>36</sup> Optical Spectrum Extended Access removes the distance limitation from Optical Spectrum Access. It also adds support for rings, chains and transport of 40 and 100 Gbit/s wavelengths.

- 9.3 Ofcom considers that Openreach's performance in repairing faults on Ethernet lines is currently acceptable and that Openreach's performance in meeting the repair SLA of 5 hours is acceptable. [REDACTED]
- 9.4 In addition, Sky considers that Ofcom needs to address:
- (a) **MBORCs** - Openreach's ability to unilaterally call MBORCs without a fully explained rationale or opportunity to challenge. At a minimum Openreach should be required to report regularly its use of MBORCs, providing a full explanation as to the reason for it being invoked; and
  - (b) **Openreach's use of deemed consent** - Ofcom's clarification as to what events are attributed to the customer or non-customer is welcome. However, Ofcom will need to monitor carefully the use of the codes. A requirement for Openreach to regularly report its use of the codes will greatly facilitate monitoring. Additionally, Sky is concerned that Openreach may choose to define new reasons (new codes) to invoke deemed consent and attribute the cause to the customer. We suggest Ofcom explicitly prescribes when and how new events can be defined as a cause for deemed consent.
- 9.5 Ofcom has proposed a new set of KPIs that Openreach must publish in order to evidence its performance in relation to the regulated minimum quality standards. Sky considers that the proposed set of KPIs will provide comprehensive evidence of Openreach's performance against the regulated minimum quality standards. However in addition to these KPIs, Openreach should also be required to publish KPIs covering Mean Time Between Failure (where failure is caused by Openreach or its contractors) for each individual Ethernet and OSA circuit. These circuits are expected to be high performing and this needs to be evidenced. Additionally, the stats for each circuit should be aggregated for each CP so that their average may be compared to the industry average.
- 9.6 Generally transparency and monitoring as a means of encouraging improved quality of service could be significantly improved if Openreach was required to report regularly to its customers. Such reporting should cover Openreach's the industry performance as a whole, and across a range of operational matters such as showing faults, causes of the faults, the SLA/SLG for each event or class of event, with summaries. This would permit a CP to compare the performance of their estate and Openreach's service against the industry average.

## **Part II – Sky's response to LLCC consultation**

- 10. Ofcom's proposed leased line charge controls appear to include significant inappropriate costs**
- 10.1 As set out in section 3, active remedies will remain the most important and widely used products in the business connectivity markets ("BCMs"), for Sky and other CPs/businesses, over the period of the market review. It is therefore important that charge controls, which affect both active and passive prices, are set at appropriate levels.
- 10.2 In setting cost based charge controls for active leased line products, Ofcom forecasts the unit costs of providing the services in the final year of the charge controls, taking into account the estimated development of active product usage over time.
- 10.3 Where forecast unit costs are below current costs, Ofcom reduces charges using a combination of one off price reductions at the start of the charge control (starting adjustments), and incremental price reductions over the period of the charge control such that the price in the final year equals the estimated costs (glide path).

- 10.4 This section outlines three instances where Sky considers that Ofcom's treatment of costs in setting the charge controls for active products is inappropriate and may lead to BT making excessive returns. Specifically:
- (a) Ethernet charge controls should include, as a starting adjustment, all of the attribution changes for BT's General Overheads proposed in its Review of BT's cost attribution methodology (£37m for Ethernet) instead of including only a subset (£22m) as proposed by Ofcom;
  - (b) Ofcom's forecast cannibalisation of active products by dark fibre appears optimistic, and the treatment of additional costs appears to afford BT excess returns; and
  - (c) CPs should not pay for Openreach resource uplifts to meet minimum service quality standards.
- 10.5 Each of these arguments is discussed in more detail below.
- Ofcom's proposed amendments to Group Overheads should be included as a starting adjustment in their entirety***
- 10.6 During the course of the BCMR consultation, Ofcom has carried out a review of BT's cost attribution methodologies for its Regulatory Financial Statements.<sup>37</sup> As part of this review, Ofcom has identified a number of calculation errors in BT's methodologies for allocating costs, as well as allocation approaches that are inappropriate. Although Sky will submit a separate response to Ofcom's cost attribution review consultation, certain issues raised there are relevant for setting leased line charge controls in the BCMR.
- 10.7 In its cost attribution review, Ofcom identified attribution methodologies relating to Group Overheads that it considered inappropriate, as they do not reflect the activities that cause the costs to be incurred. Ofcom therefore proposes to redistribute Group Overheads on a more causal basis. This leads to Ofcom redistributing £226m of costs from regulated to unregulated markets, including £55m from BCMS.<sup>38</sup> This means that BT's previous methodology may have led to customers paying approximately £55m per annum more for Business Connectivity products than they should have under cost based pricing. These significant excess returns represent a poor outcome for customers that face inflated charge controls as a result of inappropriate cost allocation methodologies. Sky would expect Ofcom to remedy these issues as soon as practicable.
- 10.8 When outlining its methodology for considering whether to make starting adjustments to charge controls, Ofcom clearly states that for excessively high or low margins driven by *"changes in cost allocations (and accounting errors) between regulated and unregulated markets - we propose to impose a starting charge adjustment"*.<sup>39</sup>
- 10.9 Ofcom sets out that of the £55m inappropriately allocated to business connectivity markets, £35m were allocated to Ethernet services.<sup>40</sup> Sky would therefore expect Ofcom to make a starting adjustment to charge controls on Ethernet products that reflects this £35m of excess cost.
- 10.10 However, Ofcom proposes to make a starting adjustment of only £22m to Ethernet costs, by making a starting adjustment only for a subset of the inappropriately allocated costs<sup>41</sup>. The remaining excess costs appear to be removed using a glide path over the remaining period of the charge control.

<sup>37</sup> Ofcom, Review of BT's cost allocation methodologies, 12 June 2015.

<sup>38</sup> Ofcom, Review of BT's cost allocation methodologies, 12 June 2015, paragraph 1.12 and Table 1.1.

<sup>39</sup> Paragraph 6.120 of the LLCC consultation.

<sup>40</sup> Table A7.7 of the LLCC consultation.

<sup>41</sup> Paragraph 6.135 of the LLCC consultation.

- 10.11 This contradicts Ofcom's stated approach when adjusting for changes in cost allocations between regulated and unregulated markets. It is difficult to assess Ofcom's reasoning for only including a starting adjustment for a proportion of the excess costs, as this reasoning is not explained.
- 10.12 By using a glide path to remove approximately £13m of costs from the business connectivity markets that Ofcom has deemed inappropriate, Ofcom will ensure that customers continue to pay inflated prices for Ethernet products.
- 10.13 Sky therefore considers that the entire £35m of excess costs that were previously allocated to the business connectivity markets should be removed from the Ethernet charge controls as a starting adjustment.

***Ofcom's forecasts of dark fibre cannibalisation seem unrealistic, and could lead to over-recovery of common costs***

- 10.14 Ofcom's proposed charge control calculations include a forecast of the volumes of active leased lines purchased each year up to 2018/19. These forecasts take into account Ofcom's estimates of the impact of the availability of dark fibre on active leased lines.
- 10.15 Ofcom assumes 50% cannibalisation of new active connections by dark fibre (and associated rentals) for EAD, EAD LA, and OSA circuits at 1Gbit/s in the second year of the charge control, and 100% cannibalisation in the final year of the charge control.<sup>42</sup>
- 10.16 Ofcom's forecasts for dark fibre cannibalisation seem optimistic. Sky considers it unrealistic to assume that all CPs and businesses that require new leased line circuits at and above 1 Gbit/s in 2018/19 would use the dark fibre product for all new circuits. Cannibalisation would likely be less than 100% for a number of reasons, including:
- (a) it may be less economically viable to purchase dark fibre for certain circuits, compared to active circuits, for example in rural areas;
  - (b) smaller CPs may not be able to achieve the required economies of scale to make the purchase of dark fibre economically feasible; and
  - (c) business customers that require new leased lines at and above 1 Gbit/s may not have the technical expertise, or inclination, to self-supply active products using dark fibre, as opposed to simply purchasing active products.
- 10.17 The impact of overestimating the level of cannibalisation of active products by dark fibre is to understate forecasts for volumes of active leased lines, which will in turn lead to inflated prices for both active and passive remedies, to the detriment of CPs and end-users. This negative outcome would be further exacerbated if, as set out in section 8, the estimated LRIC value of avoidable costs used in setting dark fibre prices results in dark fibre not being a viable alternative to 1 Gbit/s active services.
- 10.18 Ofcom goes on to argue that the cannibalisation of active circuits at and above 1Gbit/s by dark fibre will lead to the risk that BT may fail to recover some efficiently incurred costs, currently recovered from active services. As a result, Ofcom proposes to account for this risk by uplifting the estimated Ethernet basket costs in the final year of the charge control by £4.6m, thereby increasing the Ethernet charge controls<sup>43</sup>.
- 10.19 It is unclear to Sky, why this transfer of costs is necessary, or how it has been estimated. Under the CPI-X approach adopted by Ofcom, the X should be set such that revenues converge with the Fully Allocated Costs of the Ethernet basket at the end of the charge control. The basket services should therefore contribute to common cost recovery in proportion to the number of circuits. Any additional allocation of common costs appears to lead to the risk of over-recovery of common costs.

<sup>42</sup> Paragraph 6.83 of the LLCC consultation.

<sup>43</sup> Paragraph 6.103 of the LLCC consultation.

*CPs should not pay for Openreach resource uplifts to meet minimum service quality standards*

- 10.20 In setting charge controls, Ofcom increases Openreach's base year costs by £4.2m<sup>44</sup> to reflect the additional resources BT has hired to help it meet its Service Level Agreements ("SLAs"). Ofcom's analysis appears to be predicated on the assumption that better service quality can only be delivered by adding more resources which results in higher costs and higher wholesale charges.
- 10.21 This assumption is inappropriate as it fails to recognise the scope for Openreach to deliver better quality services through efficiency improvements (i.e. at existing or even lower levels of resources). As Sky set out in its engagement in the last FAMR<sup>45</sup>, transformation programmes among firms similar to Openreach (where the core task is the effective and efficient management of (a) a large field force and (b) network assets) have become relatively common, both in the UK and other countries. These firms must deliver high quality services to end-users, often under significant time and cost pressures. The focus of such programmes normally is to improve service delivery significantly, while at the same time reducing costs.
- 10.22 From Sky's experience in undertaking efficiency programmes, and from interactions with Openreach, it is very likely that Openreach could make service quality improvements and meet its SLAs through efficiency improvements, without the need for additional resources.
- 10.23 Under Ofcom's proposed approach, customers will pay the additional costs of Openreach meeting its SLAs (which also will not improve Openreach's performance beyond levels experienced by CPs in 2011) through higher regulated charges. Such an outcome provides limited or no incentives on Openreach to improve service quality through efficiency gains.

**11. Ofcom's proposed cost of capital for Openreach copper, and Other UK telecoms, are too high**

- 11.1 Ofcom estimates the Weighted Average Cost of Capital (WACC) for BT Group and its component parts, in order to set the appropriate rate of return BT is allowed to achieve on regulated products. In the leased lines charge control consultation document Ofcom disaggregates the BT Group WACC into:
- (a) Openreach copper network WACC – relating to fixed access market copper products and used in the fixed access market review;
  - (b) Other UK telecoms assets WACC – relating to both leased lines and other UK telecoms products (not including Openreach copper access), and used directly in setting leased line charge controls and the VULA margin test; and
  - (c) Rest of BT WACC – relating primarily to BT Global Services, and not used for regulatory charge setting.
- 11.2 It is important for Ofcom to consider that although during the current review the BT WACC is only used directly for setting leased line charge controls, the WACC for different components of the BT Group are important inputs to other regulated markets, such as LLU and WLR charge controls, and the VULA margin test. As such, each component WACC should be robustly estimated and suitable for its purpose.
- 11.3 Sky considers that Ofcom has been too cautious in two key aspects of WACC estimation for BT. Specifically:

<sup>44</sup> Table A7.1 of the LLCC consultation.

<sup>45</sup> Sky's response of February 2014 to the Fixed Access Market Review.

- (a) the asset beta for Openreach copper network is too high, as Ofcom’s benchmarking does not give enough weight to the most appropriate benchmark companies; and
- (b) Ofcom should estimate a separate asset beta for leased lines and the rest of the UK telecoms assets.

11.4 The rest of this section discusses these arguments in more detail.

***Ofcom’s estimate for the Openreach asset beta is too high, given the evidence presented***

11.5 Ofcom’s first step in estimating the relevant asset beta to apply to leased line services is to estimate the asset beta for Openreach’s copper network. The Openreach asset beta, and Openreach WACC that it informs, are not direct inputs to the leased line charge controls, but they are important inputs for the LLU and WLR charge controls, and are essential for the rigour of the overall WACC estimate. It is essential therefore that in setting the Openreach asset beta, Ofcom draws the appropriate conclusions based on the available evidence.

11.6 To set the Openreach asset beta, Ofcom considers a range of evidence to assess whether 0.5 (the figure used in the last FAMR statement) is still an appropriate estimate, including:

- (a) asset betas of UK network utilities;
- (b) asset betas of UK, European and US telecoms operators; and
- (c) Ofcom’s a priori expectation that *“Openreach asset beta should not be higher than that of the UK telecoms operators that are large users of wholesale access services from BT.”*<sup>46</sup>

11.7 Ofcom provisionally concludes that 0.5 remains an appropriate estimate as it *“lies between the average network utility asset beta of 0.4 and the current BT Group beta of 0.74. In addition it lies below the average asset beta for UK fixed telecoms companies”*.<sup>47</sup>

11.8 Sky considers that Ofcom’s estimate of the Openreach asset beta is too high, as it places too much implicit weight on evidence for the comparable companies that are of less relevance (UK fixed telecoms operators and US telecoms operators). The average asset betas for the comparable companies assessed by Ofcom are set out in Table 1 below.

**Table 1: Average asset betas for Ofcom comparable companies<sup>48</sup>**

	<b>UK network utilities</b>	<b>European telecoms operators</b>	<b>UK fixed telecoms operators</b>	<b>US telecoms operators</b>
Average 2 year asset beta	0.40	0.44	0.65	0.54

11.9 Sky considers the most relevant comparable companies to the Openreach copper network are the UK network utilities. Ofcom’s approach in setting disaggregated asset betas is to reflect variations in systematic risk between different activities.<sup>49</sup> The systematic risk

<sup>46</sup> Paragraph A14.218 of Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30, 26 June 2014.

<sup>47</sup> Paragraph A9.44 of the LLCC consultation.

<sup>48</sup> Tables A9.6 – A9.9 of the LLCC consultation.

<sup>49</sup> Paragraph A9.35 of the LLCC consultation.

faced by Openreach is closest to the risk faced by network utilities for a number of reasons.

- 11.10 First, the annual revenues of both Openreach and the network utilities exhibit low volatility compared to other sectors (including retail fixed line telecoms). This is due to:
- (a) stable network demand – wholesale copper subscribers on the Openreach network have historically been stable and forecastable, similar to network utilities; and
  - (b) stable pricing – wholesale copper prices for Openreach are charge controlled and known in advance, similarly network utility prices are heavily regulated.
- 11.11 Second, the annual operating costs and capital expenditure for both the Openreach copper network and the network utilities are largely fixed, with variable elements that can be materially forecasted. Earnings for both Openreach’s copper network and the network utilities therefore exhibit low levels of volatility compared to the wider economy.
- 11.12 It could be argued that, because the pricing of and returns on Openreach’s copper network are largely known in advance, and less subject to input cost fluctuations than some network utility prices (such as wholesale gas prices), Openreach copper network earnings could be more stable than some network utilities and exhibit lower systematic risk. The true asset beta of the Openreach copper network could therefore in principle lie below the asset betas of network utilities.
- 11.13 Conversely, each of the other comparable company classes considered by Ofcom exhibits characteristics that suggest that less weight should be applied to them as benchmarks for the Openreach asset beta. This section considers each asset class in turn.

#### European telecoms operators

- 11.14 The European telecoms operators considered by Ofcom primarily include the fixed line incumbents of eleven European markets.<sup>50</sup> Aside from the UK network utilities, the systematic risk of these companies is likely to most closely resemble the Openreach copper network, as each group owns significant fixed access telecoms infrastructure.
- 11.15 However, the asset betas of each of the European telecoms operators will also include the impact of the retail fixed and mobile business of each operator. Retail telecoms services exhibit significantly greater systematic risk than is faced by the Openreach Copper network, as retail operations are subject to greater volatility in subscriber volume and price competition. As a result, Sky would expect the asset beta of Openreach to be below those of other European telecoms operators (an average asset beta of 0.44)<sup>51</sup>.

#### UK fixed telecoms operators

- 11.16 The UK telecoms operators considered by Ofcom include Sky, TalkTalk, and Colt.<sup>52</sup> The asset betas of these companies are less relevant as benchmarks for the systematic risk for Openreach’s copper network.
- 11.17 Both Sky’s and TalkTalk’s business models reflect a heavy skew towards retail subscriber relationships and include very little fixed access network assets. As such, the returns earned by the two businesses could be subject to significantly greater volatility than Openreach’s copper network due to greater cost inflation, price uncertainty, and competition for subscribers.
- 11.18 Colt focuses narrowly on business grade fibre data services for large corporate customers. In addition it continues to roll-out its fibre network. Sky therefore considers Colt to be less relevant as a benchmark for Openreach.

<sup>50</sup> Table A9.8 of the LLCC consultation.

<sup>51</sup> Table A9.8. of the LLCC consultation.

<sup>52</sup> Table A9.70 of the LLCC consultation.

11.19 Ofcom's a priori expectation that the Openreach copper network asset beta should not be higher than that of the UK telecoms operators that are large users of wholesale access services is correct. However, the significant differences in systematic risk between UK operators and Openreach mean that they should be given little weight in setting the Openreach asset beta.

US telecoms operators

11.20 Similar to the European, telecoms operators considered by Ofcom, asset betas of US telecoms operators will include the impact of the retail fixed and mobile business of each operator which are likely to exhibit significantly greater systematic risk than is faced by Openreach Copper. As such, Sky does not consider the US telecoms operators to be appropriate benchmarks for the systematic risk of Openreach's copper network.

11.21 In summary, Sky considers the closest comparator group to the Openreach copper network, in terms of systematic risk, are the UK network utilities and, to a lesser extent the European fixed telecoms operators. Sky would therefore expect an appropriate asset beta for Openreach copper to lie in the range 0.40-0.44.

***Ofcom should estimate a separate asset beta for leased lines and the rest of the BT Consumer business***

11.22 In previous charge controls, Ofcom has split the BT Group WACC into two separate component WACCs, the Openreach copper network WACC, and the Rest of BT (RoBT) WACC. In the leased line charge control consultation, Ofcom proposes a further disaggregation of the RoBT WACC into a "UK telecoms" WACC relating to leased lines and other BT Consumer services, and a "RoBT" WACC relating only to BT Global Services.

11.23 While Ofcom's proposed disaggregation is a step in the right direction, in order to achieve the aims set out in its consultation document it should go further, and estimate separate WACCs for leased lines (to be used in the leased line charge control) and for other UK telecoms assets to be used in VULA margin regulation.

11.24 Ofcom's analysis of whether it is appropriate to disaggregate the asset beta for RoBT focuses on the expected difference in systematic risk between leased lines and the other parts of the BT business.

11.25 Ofcom outlines the possible reasons for the increase in BT Group asset beta from 2010 to 2014 (which implies an increase in the asset beta for the non-Openreach copper network part of the business). These include<sup>53</sup>:

- (a) Profit growth in BT Global Services - which increased from 5% of BT Group EBITDA to 15% between 2009 and 2014;
- (b) BT's investment in pay TV and content rights;
- (c) BT's investment in fibre to the cabinet (FTTC); and
- (d) changes to BT's defined benefit pension scheme.

11.26 Ofcom states that it "*would not expect the improvement in the performance of Global Services and investment in pay TV and sports rights to affect the asset beta of leased lines services.*"<sup>54</sup>

11.27 Further, Ofcom outlines how there are "a priori" reasons why the systematic risk of leased lines is different from the risk faced by BT Group, and would warrant a separate WACC estimate.<sup>55</sup>

<sup>53</sup> Table A9.57 of the LLCC consultation.

<sup>54</sup> Table A9.58 of the LLCC consultation.

<sup>55</sup> Table A9.63-A9.81 of the LLCC consultation.

- 11.28 Sky agrees in principle with Ofcom's assessment that leased lines are likely to have lower systematic risk than the rest of the BT Group, however Sky disagrees with the application of the assessment, i.e. that Ofcom should estimate a single WACC to cover both leased lines and the rest of the BT Consumer business.
- 11.29 In its assessment of the difference in systematic risk between leased lines and other parts of the BT business, Ofcom identifies the likely influence of riskier parts of the BT Consumer portfolio, FTTC and pay TV. However Ofcom's proposed beta for "UK telecoms assets" will implicitly cover leased lines, FTTC and pay TV services.
- 11.30 Furthermore, the same WACC estimate will be used as a regulatory input for both the leased line charge controls, and the VULA margin test. This creates the risk, by aggregating leased lines with the other UK telecoms assets (that Ofcom has noted could have higher systematic risk), that the WACC estimate used in leased line charge controls is too high, and that the estimate used in the VULA margin test is too low.
- 11.31 Sky considers a more appropriate approach would be to further disaggregate the proposed "UK telecoms assets beta" to a specific beta for leased lines, and a beta for the rest of the UK telecoms assets, covering primarily unregulated products and FTTC.
- 11.32 Sky considers that the most appropriate benchmark for setting the asset beta for BT's unregulated products and FTTC may be the betas of other fixed telecoms operators, as they offer the most similar services and face similar levels of systematic risk.
- 11.33 The appropriate asset beta for leased lines would then lie between the asset beta for BT's unregulated products and FTTC, and the asset beta for the Openreach copper network.
- Ofcom's total market return approach ignores long term risk free rate decline*
- 11.34 It is important to comment on Ofcom's approach to the total market return (TMR) - the sum of the real risk free rate (RFR) and the equity risk premium (ERP).
- 11.35 In its assessment of the RFR, Ofcom notes that in the March 2015 MCT statement it opted to reduce the RFR from 1.3% to 1.0% "in line with the reduction in long term average yields."<sup>56</sup> It also states that in setting the ERP it raised its estimate from 5.0% to 5.3% to maintain a constant TMR of 6.3%. Ofcom states that "there may be an inverse relationship between the RFR and ERP", it "preferred to maintain a relatively stable TMR", and "the move from an ERP of 5% to an ERP of 5.3% reflected a rebalancing of the real RFR and ERP as components of the TMR".<sup>57</sup>
- 11.36 Sky does not disagree with maintaining a stable TMR in principle; however the impact of this approach is that it can ignore permanent reductions in the RFR that lead to reductions in the TMR.
- 11.37 It is important for Ofcom to note that if the long term decline in RFR is not permanent, then a stable TMR approach should be maintained if spot rates on index linked gilts (Ofcom's proxy for the RFR) increase in the short term, i.e. any increases in index linked gilt rates should not lead to immediate increases in Ofcom's estimate of the TMR.

Sky

7 August 2015

<sup>56</sup> Table A9.10, first bullet of the LLCC consultation.

<sup>57</sup> Table A9.10, second bullet of the LLCC consultation.

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