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Response to the
2015 BCMR and LLCC Consultations
by the
Infrastructure Investors Group



Report Compiled by GOS Consulting Limited



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Contents

1	Introduction	1
2	The Infrastructure Investors Group.....	1
2.2	CityFibre Holdings.....	2
2.3	euNetworks	2
2.4	Virgin Media	2
2.5	Zayo Group	2
3	The Structure of this Response	3
4	The Arguments against Ofcom’s Proposals.....	3
4.1	Brief overview of points covered in this section	3
4.2	Introduction.....	3
4.3	Background.....	5
4.4	The Benefits of Infrastructure Competition	5
4.5	The Existing Level of Infrastructure Competition within the UK	9
4.6	Ofcom’s Proposed Price Regulation and its likely effect on competition	15
4.7	Conclusion	18
5	The impact of Ofcom’s proposals on alternative investment providers	19
5.1	Brief overview of points covered in this section	19
5.2	Introduction.....	19
5.3	Ofcom’s Proposals	20
5.4	IIG Impact Analysis	20
5.5	Results of Impact Analysis	21
5.6	Conclusions.....	21
6	The IIG’s proposals.....	23
6.1	Brief overview of points covered in this section	23
6.2	Proposals to address the issues identified	23
6.3	Reconsider and/or postpone the DFA remedy obligation.....	23
6.4	Alternative Pricing Options	26

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1 Introduction

- 1.1.1 On 15 May 2015 Ofcom published a consultation setting out their provisional analysis on the state of competition within the business market for leased lines within the UK. Their analysis stated that in the vast majority of the UK, they had found that BT had significant market power in the leased line market and that outside of London competition was both non-existent and unlikely to arise within the next three years.
- 1.1.2 In order to address the dominant position held by BT and to prevent it using this power to adversely affect competition, Ofcom suggested a series of remedies for the leased lines markets: an aggressive charge control on wholesale leased line products; mandating that BT offers a wholesale dark fibre product; and that the price of this product is linked to the regulated wholesale leased line prices. Ofcom subsequently published their guidance on how it expects to calculate the charge controls for leased lines and for dark fibre access in a consultation on 12 June 2015. This document is a response to those consultations by the newly-formed Infrastructure Investors Group.
- 1.1.3 This response sets out irrefutably that the remedies proposed by Ofcom in their consultations will not only destroy future competition in the UK telecoms infrastructure market, but may also reverse the great strides taken towards competition since the last BCMR.

2 The Infrastructure Investors Group

- 2.1.1 The Infrastructure Investors Group (The IIG) is a collective of alternative infrastructure providers who have built, own and operate fibre networks within the UK, independently of BT. Whilst normally members of the IIG compete intensely with each other, they believe the issues being discussed here have such significant and far-reaching consequences for the future of the industry, that collaboration and solidarity is required to ensure the full weight of their argument is appreciated.
- 2.1.2 This response is submitted to complement the individual responses submitted by the IIG members.
- 2.1.3 The members of the IIG are (in alphabetical order):
- CityFibre Infrastructure Holdings plc
 - euNetworks Networks Group Limited
 - Virgin Media plc
 - Zayo Group LLC

2.2 CityFibre Holdings

2.2.1 CityFibre, the largest independent provider of fibre infrastructure to UK mid-sized cities, enables gigabit connectivity through building, owning, and operating fibre optic network infrastructure for public sector organisations, service providers, mobile operators and businesses. The Group operates 543 route kilometres of local access networks serving 60 towns and cities. To date the Company has launched five Gigabit City projects in York, Peterborough, Coventry, Aberdeen, and Edinburgh. CityFibre is a member of a joint venture with TalkTalk and Sky, delivering Fibre-to-the-Premises (FTTP) networks for homes and businesses. Work is currently underway to connect tens of thousands of homes and businesses in York.

2.3 euNetworks

2.3.1 euNetworks is a Western European provider of bandwidth infrastructure services. It owns and operates 13 fibre based metropolitan city networks in 5 countries, connected with a high capacity intercity backbone covering 45 cities in 10 countries. euNetworks is the leading data centre and cloud connectivity provider in Europe, directly connecting over 260 key data centres, with further data centres indirectly connected. euNetworks was founded in 2002 and has its headquarters in London.

2.4 Virgin Media

2.4.1 Virgin Media is the second largest provider of broadband infrastructure within the UK. Its cable network – the result of multi-billion pound private investment – already delivers ultrafast broadband to over half of all UK homes, with speeds of up to 152Mb, as well as connectivity to thousands of public and private sector organisations across the country. Virgin Media is a part of Liberty Global plc, the world's largest international cable company, together serving 24 million customers across 14 countries.

2.5 Zayo Group

2.5.1 Zayo Group is a global provider of bandwidth infrastructure services, including dark fibre, Ethernet and IP services. Zayo operates in the United States, France and the United Kingdom. Its UK fibre optic network spans more than 450,000km and connects over 130 data centres via unique routes alongside the national gas pipeline and within London's sewer system. Zayo was founded in 2007 and is headquartered in Boulder, Colorado, with European headquarters in London and Paris.

3 The Structure of this Response

3.1.1 Our (the IIG's) response is divided into three distinct sections, summarised below:

- **The arguments against Ofcom's proposals**
This section includes concerns with Ofcom's approach, the flaws in its analysis, the economic arguments against its proposals and the academic, empirical and precedential evidence to support our view.
- **The impact of Ofcom's proposals on alternative investment providers**
This section includes an analysis of the impact that Ofcom's proposals will have on existing, competitive, alternative infrastructure providers within the UK.
- **The IIG's proposals**
This section discusses the merits of either postponing or discontinuing the imposition of mandated dark fibre access and, failing that, alternative methods for setting the price of such access which will not cause such irreparable harm to competition.

4 The Arguments against Ofcom's Proposals

4.1 Brief overview of points covered in this section

4.1.1 In this section we present analysis and data to demonstrate clearly that:

- Ofcom have made significant errors in their analyses and in several places contradict their own analysis;
- Ofcom have made arbitrary changes to criteria used to define geographic markets, changes which contradict academic analysis, empirical analysis and economic principles and experience;
- Ofcom's proposals risk significant damage to efficient investment in UK telecoms networks; and
- Ofcom's proposals would be a self-fulfilling prophecy resulting a near-monopoly by BT in access networks.

4.2 Introduction

4.2.1 In their recent Business Connectivity Market Review (BCMR) consultation and accompanying Leased Lines Charge Control (LLCC) consultation, Ofcom set out their view of the state of competition within the UK market for leased lines, along with proposed remedies to tackle the problems identified. We agree that there are areas in the UK where BT still holds market power and that charge control remedies may be an appropriate solution in the medium term. However, we believe that Ofcom have seriously misjudged the current (and prospective) state of competition within the wider market and that their proposed remedies have the potential not only to undermine the significant progress made towards competition since the last BCMR, but actually to reverse many of the positive outcomes arising since then.

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- 4.2.2 We welcome Ofcom's intention to make the market more competitive. However, our view is that Ofcom have made a number of significant analytical errors. Collectively, the errors made by Ofcom will have a severely detrimental effect on the emerging wholesale market at the physical, passive level where a number of investors are making significant investments in their own fibre access networks. In fact, it is our view that the regulated price, that Ofcom propose BT should charge for Dark Fibre Access, will have the consequence of foreclosing the market to efficient competitors, resulting in the market becoming a near-monopoly. We cannot believe that this is the result Ofcom desire.
- 4.2.3 There is nothing inevitable about investment in fibre networks. Large international investors, such as Liberty Global, Zayo and euNetworks are at liberty to invest in countries that most support independent infrastructure competition. Our concern is to ensure that the UK is an investment destination of choice for such firms and that effective competition between independent infrastructure providers delivers benefits to customers, citizens and the UK economy.
- 4.2.4 This response sets out the areas where we believe that Ofcom have misjudged their approach and the effects it would have on competition within the broadband market.
- 4.2.5 Our concerns with Ofcom's approach are:
- Ofcom have placed too much emphasis on the largely unevidenced benefits of Dark Fibre Access (DFA) and have largely ignored the more significant benefits of competition between independent infrastructure providers at both wholesale and retail level.
 - Ofcom have set a threshold for competition in a given geographic area that is very high and wholly inconsistent with academic research findings, other regulatory bodies and even with Ofcom's own previously stated thresholds for effective competition in relevant markets. The result is that SMP has been found in cities that are already fully competitive or are heading towards effective competition. In fact Ofcom have completely dismissed the potential for competition to develop outside the CLA.
 - Ofcom have not acknowledged the level of infrastructure investment that is taking place throughout the country by members of the IIG and other CPs. Ultimately such investment creates truly sustainable long-term competition with its attendant benefits.
 - Ofcom's proposed pricing for DFA will, at the very least, discourage further investment in independent infrastructure in prospectively competitive areas and could result in efficient competitors being forced to exit the market. DFA may be a reasonable remedy in areas where competition is unlikely in the longer term. However, in many cities across the UK, sustainable competition between independent providers of infrastructure and BT is developing. Any remedies imposed on BT as a result of SMP should not have the outcome of discouraging such competition. In particular, it is essential that regulated prices do not have the effect of disincentivising efficient investment by other operators, which is what Ofcom's proposal will certainly do.
- 4.2.6 We elaborate further on the above points in the sections that follow.

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4.3 Background

- 4.3.1 Ofcom have determined that the Business Connectivity market consists of two technology based markets: Traditional Interface Symmetric Broadband Origination (TISBO) and Contemporary Interface Symmetric Broadband Origination (CISBO). They also find that there are three geographic wholesale markets (excluding the Hull area): Central London Area (CLA), London Periphery (LP) and Rest of UK (RoUK). In this response we focus on the wholesale CISBO market.
- 4.3.2 Ofcom find that no firm has SMP in the CLA and that BT has SMP in both LP and RoUK and so apply *ex ante* obligations at the active level to BT to ensure that it cannot distort competition. Ofcom also propose that BT should provide DFA where it has SMP. Ofcom argue (in Annex 23 to the BCMR consultation) that DFA will bring many dynamic and static efficiency benefits to the market.
- 4.3.3 Ofcom acknowledge that pricing of DFA will be critical to ensuring the market works effectively¹. In the Leased Line Charge Control (LLCC) consultation document, Ofcom propose that DFA will be priced on an "Active Minus" basis, taking 1Gbit/s EAD as the benchmark product and removing the LRIC costs of the active components to establish the DFA price. Ofcom further propose an aggressive price cap on the active wholesale products that will flow through to the price BT can charge for DFA.

4.4 The Benefits of Infrastructure Competition

- 4.4.1 Mandating DFA within the leased lines market may be a valid remedy to increase competition in areas where infrastructure competition is limited and/or unlikely to emerge. However, infrastructure competition² provided by independent competitors that covers the *entire* value chain would bring about far superior outcomes to that of DFA alone, especially when some or all of the competing infrastructure providers offer dark fibre access on a commercial basis. Wholesale and retail customers then benefit from both infrastructure competition *and* from the availability of dark fibre access.
- 4.4.2 This section discusses the evidence that supports this view.
- 4.4.3 **Academic Evidence**
- 4.4.4 The advantages of infrastructure competition between independent providers over service-level competition (where Communications Providers access the network provided by a dominant owner of an essential input) have long been recognised by academic and other researchers.
- 4.4.5 Many academic studies have explored the relative benefits of infrastructure-, or facilities-, based competition compared with service-based entry. For example, as Glen Woroch explained in 1998: "... entry by facilities based competitors ... is seen as a particularly effective

¹ BCMR (2015) Paragraph 7.39

² In this paper when we refer to 'infrastructure competition', we are referring to competition provided by alternative network operators that covers the entire value chain and does not, at any point, rely on any part of the incumbent's network. The alternative is 'service-level competition' whereby some part of the product must be purchased on a wholesale level (e.g. dark fibre access) from the incumbent.

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means to support the efficient capital investment and adoption of advanced technologies.”³ Woroch also says that “vigorous competition among network owners is also believed to safeguard consumers against incumbents' attempts to extend their monopoly power into adjacent markets”⁴. This is an important benefit of infrastructure competition where the incumbent operator has SMP in the upstream, wholesale market.

- 4.4.6 More recently, Johannes Bauer suggests that the benefits of infrastructure competition include innovation and investment “as well as the associated longer term user benefits”⁵. Similarly Martin Cave suggests that an over-reliance on service-based competition would deny consumers the benefits of infrastructure competition⁶.
- 4.4.7 One of the key features of any market where a vertically integrated firm is dominant upstream but faces competition downstream is that the firm can leverage its dominance into the downstream market, as suggested by Woroch. The presence of independent competition makes this much more difficult, if not impossible. A major contributing factor to BT’s investment in its own infrastructure has been the development of large-scale infrastructure competition, via cable network investment, now operated by Virgin Media. In a 2012 paper, Nardotto, Valletti and Verboven⁷ use data sets for the UK on broadband penetration and speeds to analyse the impact of inter-platform competition (cable networks vs. traditional telecoms providers) and intra-platform competition (whereby entrants access BT’s network). They find that intra-platform competition through LLU entry has not significantly raised total broadband penetration. In contrast, inter-platform competition (between networks) has had a more significant impact and “always leads to market expansion”.⁸ LLU has had a positive impact on the quality of service provided, but infrastructure competition has a positive impact on both penetration and quality.
- 4.4.8 Similarly, Bouckaert, van Dijk and Verboven (2010)⁹ analysed the effects in the broadband market of, what they referred to as: a) inter-platform (facilities-based or infrastructure) competition; b) facilities-based intra-platform (LLU) competition; and c) service-based intra-platform competition. Using a sample of OECD countries, they found that inter-platform competition has been the main driver of broadband penetration and that the two types of intra-platform competition have a “considerably smaller effect on the broadband penetration”.
- 4.4.9 The final two papers cited above refer to competition between the incumbent’s copper and the entrant’s cable network. However, there is no reason to think that these findings would

³ Woroch, G. ‘Facilities Competition and Local Network Investment: Theory, Evidence and Policy Implications’ in *Industrial and Corporate Change* Vol. 7 No. 4 1998 pp601 - 614

⁴ op cit, footnote 11

⁵ Bauer, J. ‘Regulation, Public Policy and investment in communications infrastructure’ in *Telecommunications Policy* Vol. 34, 2010 pp. 65 - 79

⁶ Cave, M. ‘Encouraging infrastructure competition via the ladder of investment’ in *Telecommunications Policy* Vol. 30, 2006 pp223 - 237

⁷ Mattia Nardotto, Tommaso Valletti and Frank Verboven; Unbundling the Incumbent: Evidence from UK Broadband. Centre for Economic Policy Research, Discussion Paper No. 914, October 2012.

⁸ op cit, p.28

⁹ Jan Bouckaert, Theon van Dijk, Frank Verboven; Access regulation, competition, and broadband penetration: An international study. *Telecommunications Policy* 34 (2010) pp 661 – 671.

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not apply to different networks of the same type, i.e. between independent fibre networks. The benefits come from independent entities competing to provide broadband products to customers. How this is achieved from a technical standpoint is not important. What is important is that independent rivals can compete across all levels of the value chain including, for example, network design and topology.

4.4.10 Empirical Evidence

4.4.11 Empirical evidence of the positive effects of competition between independent networks can most clearly be illustrated using data from broadband markets where competition is between copper and cable. However, again, it is our view that these lessons apply equally to business services offered on the same network type but by different operators. In essence, where there is competition between different networks, whether they use the same technology or not, then customer outcomes are superior to where competitors all use the same network. The networks become involved in a competitive “arms race” to offer better service levels than their rivals and whether one is copper and one is cable, or both are fibre, is not important.

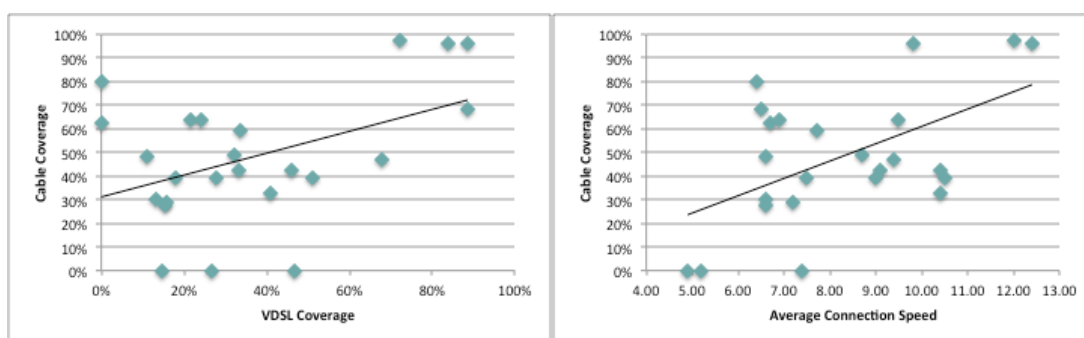
4.4.12 Another significant advantage of infrastructure competition over service-level competition is that it causes the incumbent to invest and innovate at the deepest level of its network. Allowing access to BT’s dark fibre gives competitors the opportunity to compete in providing the active elements of the network, but does not provide competition at the final infrastructure level. BT is therefore under no competitive pressure to expand its infrastructure to more premises, improve the efficiency of its infrastructure or lower its infrastructure build costs.

4.4.13 Infrastructure Competition and Product Benefits

4.4.14 The positive effect on consumer outcomes of competition between independent service providers is most clearly seen in the European broadband markets. Figure 1 illustrates a strong correlation between the presence of cable infrastructure and both the presence of VDSL and increased broadband access speeds. The left hand panel shows the correlation between cable and VDSL coverage and the right hand panel between cable coverage and average connection speed. The markers in each graph represent different European countries.

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Figure 1: Correlations between Cable and Speed and Cable and DSL



Source: European Commission¹⁰, Akamai, SPC Network

4.4.15 Investment in VDSL is positively associated with the presence of cable networks. The right hand panel shows an even stronger correlation between the coverage of cable and the average connection speed enjoyed by consumers. The two countries with the highest broadband access speeds in Europe (the Netherlands and Switzerland) also have nearly 100% cable and over 70% DSL coverage. As always it should be remembered that correlation does not mean a cause and effect, but it is clear that two technologies from separate firms tend to go together and access speeds are higher where cable is present. A reasonable interpretation of this correlation is that investors in cable and VDSL have responded to the presence of each other through investing more in their own technology.

4.4.16 Such an interpretation is supported by the findings of a report by Bain & Company in 2009, which noted:

In European markets where a second wireline access infrastructure is widely available (most frequently cable in residential households), telecom and cable operators are increasingly competing in one another's traditional markets. This competition is also spurring momentum for the upgrade of wireline networks, pushing them to provide higher broadband speeds. In countries such as the Netherlands, Belgium and Switzerland which have two competing fixed infrastructures covering more than 80 per cent of the population, consumers already experience higher average broadband speeds of 5.3 Mbit/s compared with 4.0 Mbit/s in other Western European markets. In addition, in these three countries broadband penetration is at 32 per cent of the population compared with 25 per cent in other Western European countries.¹¹

4.4.17 This comment is at least as true today as it was in 2009, although the average speeds and household broadband penetration are substantially higher today.

4.4.18 Infrastructure Competition and Quality of Service

4.4.19 Infrastructure competition allows for substantially different quality of service (QOS) performance between platforms. If all CPs used the same network then they would all have

¹⁰ European Commission 'Broadband Coverage in Europe 2013' Prepared by IHS Ltd and VVA Consulting

¹¹ Bain & Company 'Next Generation Competition: Driving Innovation in Telecommunications' (2009). Prepared for Liberty Global.

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similar QOS levels simply because the underlying network is the same. Where there are competing networks then the network providers can offer different service levels.

4.4.20 Ofcom complaints data illustrates the difference in quality offered by different networks. The data shows that Virgin Media, which does not use the BT network, has been consistently the best performing broadband supplier with complaints per 1,000 customers some one third of the industry average. Service providers using the BT network are to some extent limited by the QOS offered by BT Openreach. However, an independent competitor is able to offer substantially different quality of service because it is not dependent on BT: a feature that would be the same regardless of the network type involved.

4.4.21 Additionally, the existence of alternative infrastructures to service the business connectivity market based on modern, up-to-date network topologies with a high fibre count offers products and quality of service differentiation that BT alone cannot provide.

4.4.22 Conclusions on the Advantages of Infrastructure Competition over DFA

4.4.23 From the studies shown, it is clear that independent access infrastructure providers competing with BT of their own accord would be superior to service-level competition, even if that service-level reached as deep as the dark fibre network. Without the incentive to invest in its base infrastructure, dark fibre access would provide no incentive to BT to expand its network as competition would only be present in the areas where BT's network already reaches.

4.4.24 The crux of this argument is that whilst infrastructure competition leads to significantly improved outcomes for consumers, it requires that alternative providers make the decision to invest and actually build competing networks. In their analysis, Ofcom have stated that outside the CLA, such competition does not exist and therefore DFA is the best solution. The evidence, however, does not support Ofcom's conclusion.

4.4.25 In the next section we show that infrastructure competition does exist outside the CLA and that competition is increasing in intensity. It is therefore vital that regulations applied to BT do not harm the further development of a competitive market for business connectivity services based on independent infrastructure.

4.5 The Existing Level of Infrastructure Competition within the UK

4.5.1 The BCMR Consultation Document contains contradictions concerning the existing and prospective level of investment in competing infrastructure within the UK, but ultimately justifies the DFA remedy on the basis that "it is unlikely to be economically viable or efficient to build competing infrastructure access networks on a sufficient scale to provide effective constraint on BT's SMP in downstream markets" (Para. 9.50). Ofcom go on to justify a network access remedy on the basis that it "facilitates competition in downstream markets by enabling CPs to compete without the need to invest in a network, an investment which we consider, on the basis of our market analysis, represents a structural barrier to entry and expansion in the leased line markets" (Para. 9.51).

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4.5.2 This section looks at two arguments against Ofcom’s position:

1. That Ofcom’s criteria for what they deem to be “effective competition” are not in-line with academic research on the subject, guidance from the European Commission and other regulators and even its own criteria from previous BCMR consultations.
2. That Ofcom have not recognised or acknowledged the level of existing and planned investments by members of the IIG and other CPs to provide competing infrastructure across the country.

4.5.3 The Definition of Geographic Markets

4.5.4 Since the last BCMR, Ofcom have fundamentally changed their view on what constitutes effective competition. Ofcom now use an extremely high threshold for what they consider to be competitive areas in defining the relevant geographic markets. This definition is at odds with Ofcom’s previous market reviews and is not supported by robust evidence.

4.5.5 Ofcom’s definition of geographic markets is based primarily on the competitive effects of the average number of OCPs within 100m of business premises. Unfortunately Ofcom base the boundary between what they consider to be fully effective competition and other areas on conjecture only and provide no hard evidence of why the number of OCPs they have chosen is appropriate. Further, Ofcom have changed the definition of a competitive market radically since the last BCMR, when they found the WECLA area to be competitive on the basis of two alternative operators within 200m, without justification or explanation. This change exacerbates the proposed increase in the average number of OCPs from two to five and increases the proximity requirements.

4.5.6 Ofcom identify three levels of competition in the market, based on network presence:

Level of competition	Criteria	Reference
Fully effective competition	BT plus 5 OCPs on average within 100m <i>Or:</i> BT plus 4 OCPs on average within 100m and 90% of business premises have two OCPs within 100m	4.91 – 4.92
At least some potential for competition	BT plus on average 2 OCPs within 100m	4.105
Not competitive	BT plus 0 or 1 OCP within 100m	Implied from definitions above

4.5.7 We are particularly concerned about the boundary between areas with “some potential for competition” and areas where Ofcom consider competition to be fully effective, as this is where Ofcom have drawn the line separating the CLA from the rest of the UK. Ofcom’s

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justification for this boundary is based entirely on conjecture about decisions that businesses and infrastructure providers could make. Ofcom's justification is set out in 4.92 in which it claims that its requirement:

- "Allows for at least two competing offers (i.e. offers that compete with BT's)..."
- Increases the likelihood that BT is constrained by competition...; and
- Minimises any risk of tacit collusion."

4.5.8 Later in footnote 10 (para. 4.106) Ofcom say that "...we cannot presume that all OCPs with network infrastructure within the assumed build distance of businesses are able or willing to compete for supply of leased lines."

4.5.9 Ofcom's reasoning may or may not be correct but, as it is based on conjecture, there is no way of knowing. Ofcom do not draw on any economic or econometric analysis of the effect of the number of firms present in a market on competitive outcomes. Such evidence is available in academic literature, even if it does not refer specifically to the business connectivity market.

4.5.10 Perhaps the most relevant academic article is by Xiao and Orazem¹², which examines the effect of the number of competitors in US broadband markets. The authors find that "*Once the market has one to three incumbent firms, the fourth entrant has little effect on competitive conduct*". In other words, the presence of three firms in the broadband market is sufficient to create a competitive market and the presence of a fourth firm results in little additional benefit.

4.5.11 This finding is supported by other academic literature in other markets. In particular, a seminal article by Bresnahan and Reiss¹³, on whose methodology the Xiao and Orazem analysis is based, examined various local service markets in geographic markets across the USA. They develop a model of market entry which estimates how many competitors are needed, given the market size (number of people) to reduce profits from the monopoly level to zero, i.e. where price equals marginal cost. They conclude that:

"Our econometric estimates of entry thresholds for five different retail and professional industries confirm our initial hypothesis that post entry competition increases at a rate that decreases with the number of incumbents....most of the increase in competition comes with the entry of the second and third firm. These results initially surprised us. We expected to find entry threshold ratios that declined more gradually. It instead appears that the competitive effects of entry occurs rapidly".

4.5.12 Ofcom also do not take into account that many independent investors in fibre networks operate at the wholesale level. This is a crucial fact when considering the number of firms needed to create a competitive market. Let us suppose that a business wishes to purchase a leased line from, say, London to Manchester. The end-to-end service could comprise access circuits based on Ethernet in the two cities and trunk facility between them. It would clearly not be necessary for the same wholesaler to supply the access service in both London and

¹² Xiao, Mo, and Peter F. Orazem. "Does the fourth entrant make any difference?: Entry and competition in the early US broadband market." *International Journal of Industrial Organization* 29.5 (2011): 547-561.

¹³ Bresnahan, T and Reiss, P (1991) 'Entry and Competition in Concentrated Markets' *The Journal of Political Economy*, Vol. 99 No. 5 (Oct. 1991) pp 977 - 1009

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Manchester. The retail CP, which might be a systems integrator with no infrastructure of its own, could purchase the access and the trunk from three separate companies. Provided the retail CP could get competitive bids for the wholesale input in all three segments it could put together a low cost offer to its customer. The OCPs offering wholesale access to their network do not need to have coverage at both end-points of the line – it is sufficient that competition for provision of each end point is independently competitive. This would not require six infrastructure providers at each end of the network. All the academic analysis referenced above and Ofcom’s own assessment in the WBA market review show that three firms are enough to create competitive outcomes.

- 4.5.13 The fact that Ofcom do not use any relevant supporting evidence for their claim that five OCPs are required to create a competitive market is extremely concerning. It leads Ofcom to a conclusion that none of the UK market outside the CLA is competitive and worse than that, Ofcom conclude in 9.50 – 9.51 that nowhere outside London can become competitive. This is a direct contradiction to Ofcom’s own finding that several CBDs have “at least some potential for competition”.
- 4.5.14 What is more, Ofcom’s proposal in this BCMR contradicts their finding in both the 2013 and 2008 reviews, where they found that two competitors to BT were enough to change market conditions and create a separate geographic market. The definition of the West, East and Central London Area (WECLA) in the 2013 review was based on two OCPs within 200m of business premises (i.e. the area with potential for competition). This definition is in line with academic research and Ofcom’s own WBA market review. However, Ofcom have now changed the boundary for this area to be the line between fully effective competition and potential competition with no explanation given as to why they have changed the threshold so markedly. The fact alone that West and East London were previously defined to be part of a market with no SMP, but are now found to have SMP means Ofcom are suggesting some areas of London have become *less* competitive since 2013. This is palpably not the case.
- 4.5.15 Further, it should also be noted that the European Commission’s State Aid Guidelines regard two firms as creating sufficient enough competition that State Aid could distort the market. The Guidelines define a “black area” as ‘a geographical zone [where] there are or there will be in the near future at least two basic broadband networks of different operators and broadband services are provided under competitive conditions¹⁴. According to the Commission it can be assumed that there is no market failure in such areas that warrant State Aid. Given this finding by the European Commission, we find it difficult to understand why Ofcom think that six firms are required in the business connectivity market to create effective competition.
- 4.5.16 As we have already stated, this conclusion flies in the face of evidence of investment by competing network providers in towns and cities across the UK. In Table 4.4 of the BCMR Ofcom show that the average number of OCPs within 100m in LP and Central Business Districts of other cities is 2.4 and 2.8 respectively. According to Ofcom’s definition these areas would fall into the category where there is “at least some potential for competition”. However, because Ofcom conclude in 9.50 - 9.51 that there is a structural barrier to further

¹⁴ European Commission (2013) EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks Para. 72/77 (para. 77 says the same but in application to NGA networks)

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competitive investment in the leased lines market, they impose remedies that will remove that “potential for competition”.

4.5.17 The Existing Level of Alternative Infrastructure Investment

4.5.18 Ofcom’s conclusion that the investment needed to compete in the leased line market represents a barrier to entry simply does not follow the evidence of competing infrastructure investment being made by members of the IIG. As CityFibre said in its initial contribution to the Digital Communications Strategic Review:

“The UK is experiencing a significant increase in infrastructure investment across the country, no longer limited to London and one or two other very large cities, but in 2nd and 3rd tier towns and cities and even in some rural areas. Ofcom now has the opportunity to embrace these private investment initiatives and ensure that regulation supports these, where efficient.”

4.5.19 CityFibre has networks in over 60 towns and cities throughout the UK, with over 30,000 km of fibre in the ground. CityFibre’s core investment plan is based on up to £3.0bn of projected infrastructure investment over the next 10 years and involves laying open access wholesale dark fibre infrastructure networks in circa 100 UK towns and cities. The ability to invest in such networks is based on its business model which demonstrates sufficient return to investors, initially relating to the build of core network for business connectivity, and followed by further investment to extend the network to reach residential premises and allowing CPs such as Sky, TalkTalk and others to provide gigabit FTTH broadband services.

4.5.20 Virgin Media announced in 2015 that it is investing £3 billion to extend its network to cover an additional to connect a further 4 million homes and businesses to its network over the next five years.

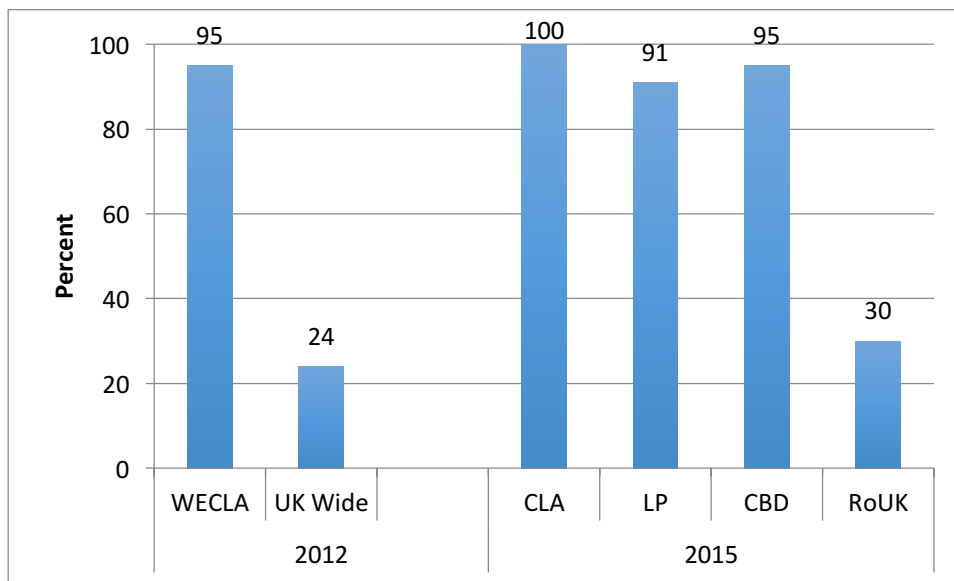
4.5.21 euNetworks has invested roughly 20m Euros in fibre and duct assets in the UK over the past 5 years and it continues to invest 30% of its revenue (€103.4m revenue in 2014) in developing its network in the UK other countries where it operates (currently Ireland, Netherlands, Germany and France).

4.5.22 Zayo Group’s business model is built around investing in loss-making customer deals that will fund network expansion, with losses to be covered by profits on business won subsequently. For example, they recently spent \$185m in capital expenditure in Dallas, Texas, based off a contract win with a large wireless carrier. This speculative investment strategy is one they hope to pursue within the UK, however they note the viability of such investments in the face of passive access remedies.

4.5.23 The investments made by alternative infrastructure providers across the UK since the last BCMR have resulted in more areas having more competitors. It is difficult to use the data in the 2012 BCMR and the current consultation document as Ofcom presents these data in different ways. However, below we compare Figure 5.9 from the 2012 Statement with the data shown in Table 4.4 of the 2015 consultation. This clearly shows that CLA, LP and Other CBDs in 2015 are at least as competitive as WECLA under Ofcom’s 2012 definition of a competitive market, and yet Ofcom seems to think these have become less competitive and subject to SMP: a conclusion that flies in the face of reality.

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Figure 2: Percentage of area covered by at least 2 OCPs within 200m of Business Sites



- 4.5.24 The WECLA defined in 2012 contains the CLA and part of LP, whilst UK wide in 2012 contains the remainder of LP and both CBD and RoUK in 2015. Were Ofcom to reproduce Figure 5.9 from 2012 using data for 2015 we expect that it would show an increase in the number of OCPs within reach of business premises in both WECLA and UK Wide. In other words we would expect, given the known investments since 2012, that there would be more choice of network providers for businesses in both geographic markets. It may be that this choice has not yet fed through to a substantially lower market share for BT, but we would expect this to happen over time as contracts come up for renewal, as businesses become more aware of competing offers and as a result of the exponential increase in the volume of bandwidth used.
- 4.5.25 Ofcom’s conclusions in paragraphs 9.50 – 9.51 are therefore contradicted by the facts and by their own assessment of the extent of network rollout. They clearly understate the amount of competition in the market and the potential for increased competition over the next few years as more competitors invest in fibre. As we will present in detail in the next section, this results in Ofcom proposing remedies on BT that discourage further investment and ensure that Ofcom’s conclusions about lack of competing infrastructure become a self-fulfilling prophecy.
- 4.5.26 Overall, Ofcom’s analysis appears to fall significant short of the requirement to conduct forward-looking market reviews and to take account of areas of prospective competition. There is little evidence of attempts to quantify benefits of prospective upstream competition before this is dismissed in the sections discussed above.
- 4.5.27 Ofcom however appear to treat the development and prospect of competition in the Hull area differently to the rest of the UK. They recognise the investments made by CityFibre and others in the Hull area and note that CityFibre has completed the first phase of a 62km access network to provide dark fibre to mobile base stations and that it intends to expand to provide services to other industry sectors. Ofcom go on to say that they “consider these

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developments important as they indicate a potential for competition in the longer term”¹⁵. If investments by CityFibre and others in Hull “indicate a potential for competition”, why do Ofcom not recognise a similar potential in other UK cities and regulate accordingly? It is our view that a similar potential also exists on other major CBDs and many other towns and cities, but that this potential is severely threatened by Ofcom’s proposed remedies. We can see no rational reason for why Ofcom should apply different approaches and methodologies in the Hull area from the rest of the country.

4.6 Ofcom’s Proposed Price Regulation and its likely effect on competition

4.6.1 The remedies proposed by Ofcom would have drastic consequences for the competitive state of the UK telecommunications industry. By pricing DFA at a level that is too low to compensate rational investors with a reasonable return, it will not only discourage any further infrastructure investment by independent competitors but will destroy the value of investments already made by alternative providers. By destroying both existing and future competition at the infrastructure level, BT’s incentive to expand and upgrade its own network will be completely removed.

4.6.2 In the 2012 BCMR, Ofcom rejected passive access remedies in part because they considered that the pricing of DFA and/or duct access could give rise to inefficient arbitrage opportunities and harm investment incentives for access infrastructure investors. They successfully defended this view in front of the Competition Appeals Tribunal in a case brought by Colt. In this review they have tried to prevent the arbitrage through charge controls for DFA. Unfortunately what Ofcom have done is create a pricing structure that may reduce arbitrage but instead wholly undermines the growing level of investment in alternative access infrastructure. It is striking that whilst Ofcom found harm to infrastructure investment a significant reason for not introducing a dark fibre remedy only three years ago, at present this appears to no longer feature in Ofcom’s concerns – despite the evidence of such investment during the current charge control and forecast for the period of the next charge control. Our concerns are explained in detail below.

4.6.3 The Proposed Charge Control

4.6.4 We have analysed the effect of Ofcom’s proposed charge control on the regulated price of DFA. This analysis shows that Ofcom’s proposed regulated price for DFA is 48-79% **lower** than benchmark prices in the CLA (see Table 3 in Section 5.5.5). Given the competitiveness of the CLA market, this means that the regulated price of DFA is likely to be up to 50% less than the cost of provision.

4.6.5 Ofcom propose that DFA should be priced on an “active minus” basis: i.e. taking the price of 1Gbps EAD and then subtracting the LRIC cost of the active elements of that service. On top of this, Ofcom propose a price cap on BT’s 1Gbps EAD product of RPI – 13.75% pa after an initial reduction of 9%, starting in 2016. This charge control is only imposed outside the CLA, which Ofcom find to be a competitive market and so not subject to *ex ante* regulation. Ofcom

¹⁵ BCMR (2015) Paragraphs 14.7 – 14.8

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say that their “proposed obligation would seek to replicate the outcome we would expect to see in an effectively competitive market”¹⁶.

- 4.6.6 The intensity of competition in Central London means that it can safely be assumed that the prices charged there are at competitive levels and therefore reflective of cost. Our analysis in Section 5.5.5 compares the price for DFA at launch with benchmark prices in the CLA. The effect of Ofcom’s proposed charge control is that the regulated price outside the CLA will be up to 79% less than the competitive price inside the CLA. Far from resulting in a price that replicates the outcome in an effectively competitive market, the proposed charge control will result in a price well below the competitive level.
- 4.6.7 Under Section 88(4)(a) of the Communications Act 2003, Ofcom is invited to take account of the price at which services are available in comparable competitive markets. It is clear from our analysis that Ofcom has not done this.
- 4.6.8 Further, we understand that an anti-competitive behaviour, such as a dominant firm charging below an appropriate measure of cost, would still be in breach of competition law even if that price were set by the regulator. There would be concerns if BT were to set prices below an appropriate measure of cost, either on its own initiative or through regulatory compliance.
- 4.6.9 Given the scale of the difference between the regulated price and the competitive price we see no merit in discussing the details of Ofcom’s proposed charge control in this response. Of much more significance is the effect that the approach would have on competitive investment in fibre access infrastructure.

4.6.10 Competitive Investment in Infrastructure Networks

- 4.6.11 The market for leased lines and dark fibre in London is highly competitive, perhaps the most competitive in the world. Ofcom recognise that in their analysis of competition in the CLA. All economic theory would suggest that in such a market all firms are price takers and have to set price levels equivalent to a relevant measure of cost. Our assumption, therefore, is that the cost of DFA provision in London has been revealed by the market and is equivalent to the price charged.
- 4.6.12 The regulated price of any network service or asset is supposed to approximate the price that would be found in a competitive market so that consumer welfare is maximised and efficient investment encouraged. If the regulated price is in fact set at ca. 20-50% of the competitive price then it is obvious that efficient investment will not be encouraged. Indeed quite the opposite will happen – even the most efficient firms will be driven out of the market as they will be unable to cover their costs, let alone generate a return on capital sufficient to compensate investors. Ofcom’s proposed charge control is likely to destroy the emerging competition in the market and leave BT as the only provider.
- 4.6.13 BT has a track record of using the regulated prices in the WECLA area, despite not being obligated to do so, it has strategic incentives to introduce the DFA product in the CLA market as this could result in a significant lessening of competition and a significant increase in

¹⁶ BCMR (2015) Para. 9.32

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market share for BT, and its customers would not recognise why it offered a different product set in what they would see as an arbitrary area. Accordingly, we assume that BT would introduce the regulated DFA product in the CLA market as well as in the RoUK and LP markets.

4.6.14 Ofcom's Presumption on Efficient Investment

- 4.6.15 Ofcom rightly recognise that a regulated DFA price that is “too low”, i.e. not cost reflective, will undermine incentives for efficient investment by alternative infrastructure providers. Ofcom also recognise that self-build will only occur where it is efficient for the CP to do so¹⁷. It is all the more worrying, therefore, that Ofcom have decided to impose a charge control that will result in the regulated price for DFA being “too low” and which therefore destroys incentives for efficient investment by independent infrastructure investors.
- 4.6.16 Market reviews and associated charge controls, if applied, are supposed to be forward looking. The Long Run Incremental Cost (LRIC) methodology is designed to reflect the costs of an efficient operator to prevent the regulated firm from recovering inefficient legacy costs it would not be able to recover if it faced an efficient new competitor. Ofcom argues in paragraph 7.74 that the “active minus” approach would “provide the best balance between the benefits and risks identified.”
- 4.6.17 Ofcom's proposal, however, undermines their role of promoting competition, as they are required to do under Section 3 of the Communications Act.
- 4.6.18 Across the UK as a whole BT has scale advantages that may result in it having lower unit costs. However, in London and in other CBDs, where the greatest demand exists for business connectivity services, such advantages are not present. In the CLA, BT has a market share of only around 30% for active services. The increased competitive network build in other cities is likely to result in BT having a smaller market share there as well, meaning that BT's average unit cost would increase. BT's nationwide scale should not therefore be taken by Ofcom as the scale needed for efficient investment in effectively competitive or potentially competitive geographic areas. In these areas firms may be efficient with a smaller market share.
- 4.6.19 Further, entrants may actually be more dynamically efficient than BT by developing network architectures that reflect the current and future needs of business customers.
- 4.6.20 An example of where a new entrant may be able to build a more efficient network would be a mid-sized city such as Norwich. Until the past decade or so, demand for business services in such a city would have been mainly located in the city centre. In Norwich, Aviva was by far the largest buyer of communications services and its offices dominated the city centre. In recent years, however, business has moved out of central locations to the outskirts and purpose built business parks. BT has to reconfigure its network to provide access in such locations whereas a new entrant building a new network could go straight to out of town locations. The new entrant may therefore be able to build a far more innovative and dynamically efficient network than BT.

¹⁷ BCOMR (2015) Annex 24, Paragraphs A24.88 – A24.89.

4.7 Conclusion

- 4.7.1 In this section we have analysed the advantages that pure infrastructure competition has over service-level based competition such as dark fibre access. Our conclusions are drawn from academic research and empirical evidence and we believe that allowing natural competition across the entire value chain will lead to preferable outcomes for customers compared to regulating dark fibre access.
- 4.7.2 We have set out the case that Ofcom are wrong to suggest that the majority of the UK is neither competitive nor prospectively competitive over the next three years. In addition to not recognising the planned investment by members of the IIG and other CPs, Ofcom have changed the boundaries for what they consider to be competitive geographic areas, meaning that areas which we believe to be competitive already have been designated as not competitive. In some cases (West and East London) this even means that areas Ofcom have previously considered potentially competitive are now subject to SMP, despite evidence that competition has increased since the last review.
- 4.7.3 We consider Ofcom's approach in defining the boundary of markets as being BT + 5 OCPs as arbitrary and based on conjecture rather than actual research and data. Conversely, we have presented academic studies that use robust econometric analysis and quantitative data and guidance from the European Commission to support the view that Ofcom is miscategorising a number of competitive geographic areas across the country as non-competitive either currently or in the next three years.
- 4.7.4 Finally, we have explained why Ofcom's proposed charge control sets up a self-fulfilling prophecy whereby their incorrect assumption of a lack of competition leads to a remedy that destroys emerging infrastructure competition and wipes out any future chance of a naturally competitive market that does not require regulation.
- 4.7.5 The proposed price will could therefore have the effect of [X] requiring BT to charge a price that is very likely to be below the cost of provision of a reasonably efficient operator. It is our understanding that a regulated price can be in breach of competition law. There would be concerns if BT were to set prices below an appropriate measure of cost, either on its own initiative or through regulatory compliance.
- 4.7.6 [X]. IIG members are not only active in the business connectivity market, but are also players in the wholesale broadband and wholesale local access markets. [X]. It is likely that the case for investment in other markets would also be undermined, leading to a reduction in infrastructure competition in other relevant markets.
- 4.7.7 This cannot be the outcome Ofcom wants: nor would it be good for the market. We therefore urge Ofcom to reconsider their proposed charge control before any further steps are taken.

5 The impact of Ofcom's proposals on alternative investment providers

5.1 Brief overview of points covered in this section

5.1.1 In this section we demonstrate clearly the impact of Ofcom's proposed remedies:

- Using Ofcom's cannibalisation assumptions, the IIG members would lose approximately £[X] over the period of the new charge control; and
- Ofcom's proposed prices are approximately 1/3 of the prevailing competitive dark fibre prices in the CLA market and approximately 1/4 of prevailing active prices by the IIG members

5.2 Introduction

5.2.1 In the current Business Connectivity Market Review consultation, Ofcom have proposed price controls on baskets of active leased line services provided by BT for the period 2016-2019.

5.2.2 In addition, Ofcom propose to mandate the introduction of Dark Fibre Access (DFA) by BT, and have proposed a pricing mechanism linked to the 1G EAD active circuit pricing.

5.2.3 Our analysis demonstrates clearly that Ofcom's approach to both active and DFA pricing will have a material and adverse impact on the revenues of infrastructure-based CPs, including those represented by the IIG. This will severely reduce the level of competition in the Business Connectivity market, both within and outside the Central London Area.

5.2.4 This section describes an analysis performed by and on behalf of the IIG to assess the likely impact of Ofcom's proposed DFA solution on the revenues of IIG members, and presents the results in an aggregate form. The analysis is made using Ofcom's own assumptions from the BCMR and LLCC consultations where possible.

5.2.5 While Ofcom's DFA remedy will apply only to the areas outside the CLA, we assume that if it is mandated there, BT will introduce DFA inside the CLA as well. Although this would cause BT to lose revenue from cannibalisation of active circuits in the CLA, this would be limited given its relatively low market share, and would be outweighed by the gain in market share from the new DFA circuits, and the strategic advantage gained by undermining the existing competition in the CLA market.

5.2.6 BT has a history of applying regulated pricing in WECLA and given the strategic advantages, minimal financial impact it is likely to have and customer requirements, we assume that BT will launch DFA at the regulated prices in the CLA as well as outside.

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5.3 Ofcom's Proposals

5.3.1 Ofcom's proposals can be considered in two parts – the charge controls for active circuits and the linked pricing mechanism for DFA.

5.3.2 For the active circuits, Ofcom's approach is:

- Definition of price baskets for the CISBO market (Ethernet and WDM circuits of all speeds)
- A three-year charge control on the Ethernet basket (circuits up to and including 1Gbit/s) of CPI – 13.75%
- A charge control on sub-baskets of 1Gbit/s EAD and main link circuits of CPI – 13.75%
- An initial price reduction of 9%

5.3.3 These controls apply to geographic areas outside the Central London Area (CLA).

5.3.4 There is also a safeguard cap (CPI-CPI) applied to CISBO circuits of higher than 1Gbit/s, but this does not apply in the CLA nor in the London Periphery (LP), only in the Rest of UK (RoUK).

5.3.5 For the proposed DFA products, Ofcom propose to base the prices on BT's 1Gbit/s EAD and EAD LA prices (which are subject to the above CISBO charge control). Ofcom specify that the DFA price will be lower than the equivalent active price by an amount equal to the LRIC cost of the active components.

5.4 IIG Impact Analysis

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[Section 5.4 and Section 5.5 have been redacted from this non-confidential version of the IIG's submission, since those sections set forth a detailed analysis, performed by the IIG's economic consultants, of the likely significant negative effect that the imposition of Dark Fibre Access with the pricing approach proposed by Ofcom would have on the business plans of the IIG members.]

The IIG members would suffer a loss of economic value from two directions:

- 1. There would be significant price erosion resulting from Ofcom's proposed prices for the BT DFA remedy, which from our analysis would be set up to 80% lower than dark fibre supply in the competitive market;*
- 2. There would be cannibalisation of existing active and dark fibre circuits by BT's new DFA products.*

In the IIG's view, much of this revenue would revert to BT and, although the DFA remedy will apply only outside the CLA, the consequent revenue loss is expected to occur both within and outside the CLA.

The IIG members are currently undertaking significant investment in fibre infrastructure in the UK, and have plans to deploy significant further capital into fibre infrastructure in the future. Under Ofcom's proposals, these plans will be curtailed with significant harm to inward investment and a significant lessening of infrastructure competition.]

5.5 Results of Impact Analysis

[REDACTED CONFIDENTIAL]

5.6 Conclusions

- 5.6.1 Our analysis indicates that the imposition of Dark Fibre Access with the pricing approach proposed by Ofcom could result in a revenue loss from the four members of the IIG of over £[REDACTED] in the first two years of the remedy. Much of this revenue would revert to BT and, although the DFA remedy will apply only outside the CLA, the consequent revenue loss is expected to occur both within and outside the CLA.
- 5.6.2 To put this into context, the entire UK wholesale connectivity market (at all speeds) has annual revenues of around £2billion¹⁹. Ofcom's proposals would remove [REDACTED] value from the OCP market – this is in addition to revenue losses by BT and other CPs not included in the IIG.
- 5.6.3 While the CLA is currently regarded as competitive, BT still has a market share of 34% for High CISBO circuits in the CLA²⁰; the DFA remedy would cause a significant increase to this share, undermining the competition that already exists in this market. It is conceivable that Ofcom's proposed DFA remedy could result in the future CLA business connectivity market becoming non-competitive under Ofcom's own criteria.
- 5.6.4 Outside the CLA, BT has a market share of 44-64% for High CISBO circuits. Ofcom's stated approach to the design of remedies is *"to regulate access to BT's and KCOM's networks where they have SMP, in order to protect consumers and to promote effective competition, innovation and choice in downstream markets, while promoting competition upstream, where this is sustainable, based on efficient investment in alternative infrastructure."*²¹, yet the effect of the proposed DFA remedy will be to further increase BT's market share and undermine the emerging competition.
- 5.6.5 Our analysis shows that Ofcom's proposed pricing for DFA will lead to a substantial loss of value and revenues to the extent that costs of existing investment cannot be recovered in the existing markets for active Ethernet (CISBO) circuits as well as undermining the existing markets for dark fibre services. This will apply both outside and within the CLA.
- 5.6.6 Ofcom's proposed DFA pricing (and indeed the proposed charge control on active CISBO services) will send a clear signal to the investment community that the UK market is subject to high regulatory risk. Once established this label will not easily be removed and could cause substantial harm to the UK beyond what is identified in this response.
- 5.6.7 We also note that three of the four companies comprising the IIG are international operators with investments in other countries as well as the UK. Their continued investment in UK

¹⁹ BCMR Business Connectivity Market Review - Review of competition in the provision of leased lines 15 May 2015: Section 3.42

²⁰ BCMR Business Connectivity Market Review - Review of competition in the provision of leased lines 15 May 2015: Table 4.4

²¹ BCMR Business Connectivity Market Review - Review of competition in the provision of leased lines 15 May 2015: para 1.25

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infrastructure will be directly dependent on the expectation of reasonable returns on that investment.

- 5.6.8 The steep price erosion in both active and passive circuits that will surely result from Ofcom's proposed DFA remedy will increase the risks associated with new investment. In the medium to longer term this is highly likely to result in a reduction in the number of CPs operating in the business connectivity market. This will further result in a reduced level of innovation and will jeopardise future investment in the infrastructure needed to deliver ultrafast broadband services.

6 The IIG's proposals

6.1 Brief overview of points covered in this section

6.1.1 In this section we argue that:

- Proceeding with the proposed DFA remedy at this time would prejudice the outcome of the Digital Strategy Review (DCR) and cause irreparable harm to infrastructure competition in the UK;
- Ofcom should reconsider the current DFA remedies or at a minimum postpone the decision and re-consult once the DCR is completed; and
- If Ofcom proceeds with the DFA remedy, then it must change the proposed pricing to using BT's forthcoming 10Gbit/s product as the benchmark, or to set the price using the cost base of a Reasonably Efficient Operator, or to use benchmark prices from the competitive dark fibre market in the CLA.

6.2 Proposals to address the issues identified

6.2.1 In this response we have explained the significant detrimental effect on investment incentives that would result of the introduction of the DFA remedy on the terms proposed by Ofcom, the substantial benefits of infrastructure competition that Ofcom's proposals would remove from the UK and the actual impact on revenues and business viability that would result from the proposed DFA pricing.

6.2.2 The IIG is confident that the clear and unbiased analysis presented in this paper will provide Ofcom with significant and valuable evidence to highlight the need to consider an alternative way forward. This section outlines options which Ofcom should consider further before reaching a decision. In our view it is likely that to properly reach this decision, Ofcom will require further information from the market. It appears that Ofcom have recently recognised this, as evidenced by the recently issued Section 135 request which covers data relevant to this analysis which Ofcom should have obtained and analysed before making its recommendations.

6.2.3 We consider two separate categories of options:

- Means of and reasons for not proceeding with the DFA remedy or postponing this to ensure any final decision is based on mature reflection and sufficient market data and analysis, and
- Alternative options for setting DFA pricing, should Ofcom decide to proceed with a DFA remedy under the BCMR/LLCC consultation regardless of the evident risks of doing so.

6.3 Reconsider and/or postpone the DFA remedy obligation

6.3.1 Reconsider the proposed DFA remedy

6.3.2 As we have clearly demonstrated in this paper, the DFA remedy, as proposed by Ofcom, would have a very significant impact on the UK electronic communications markets, reaching

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far beyond the business connectivity markets. The IIG believes that Ofcom's proposals were developed without a full understanding of the market and without sufficient analysis and understanding of the inevitable consequences of the remedy.

6.3.3 Throughout this response, we have demonstrated that Ofcom have erred in their analysis and contradicted themselves in very significant areas. The IIG does not believe that Ofcom have presented a compelling case for the implementation of the DFA remedy. Ofcom have neither:

- Identified any market failure that necessitates and justifies the introduction of the DFA remedy;
- Analysed and quantified the benefits from infrastructure competition which would not be realised if the DFA remedy was introduced;
- Acknowledged and considered the likely impact on the currently fully competitive CLA market;
- Collected market costing and pricing data to inform their recommendations (IIG members have recently received Section 135 data requests from Ofcom relating to costing and pricing of providing dark fibre services inside and outside the CLA, suggesting clearly that Ofcom did not have this data at the time of developing their recommendations), nor
- Considered other pricing options which would appear more equitable and would reduce some of the dis-benefits which appear inevitable if Ofcom's current proposals are implemented.

6.3.4 Ofcom themselves have previously recognised the importance that this decision carries. In the 2013 BCMR they stated that their aim was to "promote effective competition in downstream markets by promoting competition in the long term at the wholesale level based on investment on economically efficient alternative infrastructure"²² and again, state a similar aim in this consultation.²³ In 2013, they considered the fact that the imposition of passive remedies could undermine infrastructure investment and "discourage further expansion of such alternative networks infrastructure"²⁴ – something which seems to have been overlooked in this consultation. They noted that they would need "clear evidence to justify the [imposition of passive remedies]"²⁵ as the benefits specific to passive remedies "could to a large extent be achieved"²⁶ by active remedies.²⁷

6.3.5 Ofcom are also required under the framework set down in the Communications Act to consider whether proposed regulation meets statutory tests. In their consideration of how dark fibre access meets the 'Section 47' tests for regulation, Ofcom note that dark fibre access "facilitates competition in downstream markets by enabling CPs to compete without the need to invest in a network". We agree that in SMP markets, where a CP has an incentive not to allow access to its network, an appropriate network access condition can be imposed to address this concern. Ofcom found BT had this incentive in the 2013 review, and addressed

²² 2013 BCMR Para 8.3

²³ 2015 BCMR Para 1.25

²⁴ 2013 BCMR Para 8.93

²⁵ 2013 BCMR Para 8.9

²⁶ 2013 BCMR Para 8.6

²⁷ We note that regulatory uncertainty caused by contradicting positions also reduces the attractiveness as the UK telecoms market to investors who would wish to build alternative infrastructure.

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it by the imposition of active remedies. In this review active remedies continue to be proposed using the exact same reason for their imposition of active regulation as for DFA.²⁸ Ofcom do not demonstrate why it is necessary to impose the more onerous regulation when the less intrusive regulation achieves the same goal.

- 6.3.6 Given the arguments and evidence presented above, the IIG therefore does not consider that Ofcom have presented a solid and compelling case for the DFA remedy and recommends that this be reconsidered.

6.3.7 Postponing the DFA remedy decisions

- 6.3.8 Should Ofcom, however, decide that some form of DFA remedy is likely to be justified, regardless of the data and analyses presented here and by others, the IIG strongly recommends that the decision of how (and whether) to implement DFA should be separated from the current BCMR/LLCC consultations.

- 6.3.9 The imposition of the proposed DFA remedy (or indeed any DFA remedy) is a strategic decision which will impact the shape and structure of the UK electronic communications markets going forward. It would signal clearly a policy that competition in access infrastructure is not a priority in the UK and (depending on the details of the DFA conditions) that the access network is considered a natural monopoly in large parts of the country.

- 6.3.10 Ofcom have very recently initiated a strategic review of electronic communications regulation – the Digital Communications Review (DCR) – in which one of the stated objectives is to encourage investment in infrastructure and services. The evidence presented in this paper clearly demonstrates that the proposed DFA remedy would achieve the opposite, namely reduction or complete stagnation in infrastructure investment by OCPs. It would therefore be very imprudent to proceed with the proposed DFA remedy before the DCR process has completed. The proposed DFA remedy (if implemented) would effectively render significant parts of the DCR redundant and make a mockery of that process.

- 6.3.11 Significantly, a DFA remedy would not impact the Business Connectivity markets alone, it would also impact the Wholesale Access Markets and the Fixed Access Markets, as infrastructure investment cases are justified by addressing all of these markets. Reduction or cessation of investment in infrastructure for the Business Connectivity Markets would have corresponding results in the other markets that depend on access infrastructure – potentially resulting in the UK sliding even further down the international rankings of fibre access infrastructure availability, and consequently in reduced availability of fit-for-purpose connectivity for public sector, business and residential users and citizens in the UK. The likely negative consequences for the UK economy would be substantial.

- 6.3.12 Further, the IIG has serious doubts about Ofcom’s market definitions, in particular combining the current AISBO and MISBO markets as it appears that the competitive dynamics of these markets differ substantially and that this difference has increased since the last BCMR, rather than reduced, with increasing competition in the AISBO market inside and outside the CLA. Were the proposed CISBO market to be abandoned and the two existing market definitions retained, then Ofcom’s DFA proposals would need a significant revision and would, in our

²⁸ 2015 BCMR Paragraph 10.75

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view, be even more difficult to justify given the existence of competition for higher speed connections in many parts of the country.

- 6.3.13 And, lastly, the European Civil Infrastructure Directive (the CID) is due for transposition in the UK in 2016. The CID requires utility operators to provide reasonable access to physical infrastructure for the purposes of delivering high speed broadband services.²⁹ It would be prudent to consider the case for the dark fibre access remedy in the context of the transposition of the CID.
- 6.3.14 As dark fibre is a remedy that can be used for any purpose, its imposition will affect many markets. In particular, dark fibre is likely to affect WBA markets, and also potential future FTTH remedies; Ofcom need to consider the effect of this in the round. If Ofcom do not delay the dark fibre remedy, they need to demonstrate that they have considered the effect of the remedy on other markets.
- 6.3.15 Ofcom claim to take the CID into account in the BCMR.³⁰ However, Ofcom's analysis is cursory, and essentially dismisses the relevance of the CID because its effects are likely to be uncertain.

*"At this stage, we consider that there is significant uncertainty about the practical effects of the future legislation implementing the CID. In particular, we note that it will not come into effect until after we conclude the 2016 BCMR, and consider that it may take some time after its implementation to resolve issues about, in particular, the scope and pricing of access. Only once these issues have been resolved will we be able to ascertain with a degree of certainty whether the CID provides a viable alternative access solution for telecoms infrastructure."*³¹

- 6.3.16 The IIG accordingly consider that it would be irresponsible and disproportionate to implement the proposed DFA remedy at this time. We therefore recommend in the strongest terms that the DFA remedy decisions be reconsidered or at least postponed until after the conclusion of the DCR and that, at the appropriate time, the likely benefits and dis-benefits across all markets which rely on local access infrastructure are duly considered.

6.4 Alternative Pricing Options

- 6.4.1 In the case that Ofcom decides to proceed with a DFA remedy as a part of the current BCMR/LLCC consultation, we have identified three options for pricing which should be analysed further by Ofcom and which could result in a more appropriate remedy.

6.4.2 10Gbit/s EAD as the Reference

- 6.4.3 Our impact analysis presented in Section 5 has shown that pricing DFA circuits by using the 1Gbit/s EAD/EAD LA active prices as a reference would result in a drastic reduction in revenue for infrastructure-based CPs and an increase in market share for BT across all geographic

²⁹ Directive 2014/61/EU. Available at http://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=uriserv:OJ.L_.2014.155.01.0001.01.ENG

³⁰ 2015 BCMR, paragraph 2.46-2.48

³¹ 2015 BCMR, paragraph A13.12

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areas. This undesirable outcome is driven by the massive price erosion caused by the BT DFA product compared to existing market prices for both dark fibre and active Ethernet circuits.

- 6.4.4 Ofcom should consider how they could use BT's forthcoming 10Gbit/s EAD and EAD LA products as references instead of the 1Gbit/s products.
- 6.4.5 Although this would result in a higher price for the DFA remedy initially, which would restrict cannibalisation to active circuits of 10Gbit/s and above, it would represent a much more orderly and lower risk transition while DFA is launched and in the period after.
- 6.4.6 We note that Ofcom have briefly considered using the 10Gbit/s EAD product prices as references, but have rejected the approach³². However we do not believe that Ofcom have given sufficient consideration to this option, given the enormous consequences the use of 1Gbit/s EAD would have on the market.
- 6.4.7 In particular, Ofcom state that 100Mbit/s and 1Gbit/s circuits represent the vast majority of new connections of CISBO³³ circuits. While this may be the current situation, DFA will not be launched until 2017 and is, in Ofcom's own words, intended as a remedy for which the majority of related benefits will materialise beyond the timeframe of the coming Charge Control period. Between now and 2017 it is likely that BT's new 10Gbit/s product will have considerable growth, and the take-up of very high speed services is likely to accelerate into the period following this Charge Control period. Ofcom presents no analysis of the likely size of the 10Gbit/s market in this forthcoming and future charge control periods; the option of using 10Gbit/s products for reference pricing is simply summarily dismissed in a paragraph of six lines within a document of over 1000 pages.
- 6.4.8 We also note that Ofcom recognise that in the next charge control period (from 2019) the approach to pricing of DFA may change, and that this may involve changing the benchmark product.³⁴ It seems inconceivable that Ofcom would increase the price of DFA as a result of these changes, yet if Ofcom's views regarding uptake of 10Gbit/s are correct, any move to a 10Gbit/s benchmark would surely imply higher prices. This highlights the absurdity of Ofcom's proposals in this area, and indicates a shallow analysis with little consideration given to the consequences of the proposed solution.
- 6.4.9 We consider that the use of the 1Gbit/s benchmark would constrain Ofcom's position for the future and render it impossible to adapt their approach once the market impact of the remedy is seen. On the other hand, using a 10Gbit/s benchmark would provide Ofcom more flexibility for future pricing adjustments. The DFA prices would be able to follow a downwards glide path, based on competitive pressures on 10Gbit/s active pricing and increased demand for the 10Gbit/s active circuits. This would appear to be a much more rational and defensible approach.
- 6.4.10 While higher initial prices and consequent reduced DFA uptake would be a result of using the 10Gbit/s pricing benchmark, the longer-term benefits of availability of the DFA product for

³² 2015 BCMR Annex 26 para 152

³³ 2015 BCMR Annex 26 para 151

³⁴ 2015 BCMR Annex 26 para 158

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the purpose of innovation, rather than price arbitrage, could still be achieved, as the demand for 10Gbit/s circuits and above increases.

6.4.11 There would be considerable benefits resulting from the infrastructure investments made by CPs in competing access infrastructures, which would be more likely to continue if 10Gbit/s EAD were to be used as the reference for DFA prices. The infrastructure market would be more competitive as compared to using a 1Gbit/s benchmark, providing a combination of competition benefits and the benefits on new fit-for-purpose fibre-only networks to serve the needs to tomorrow's business and users. The increase in innovation and the availability of high quality infrastructure able to support high penetration is likely to result in increased dynamic efficiency in the longer term. We believe that Ofcom's choice of the 1Gbit/s products as the DFA pricing benchmark is overly focused on short term down-stream benefits and would result in a sharp reduction or complete halt of investment in alternative access infrastructure and cause a significant retrograde step in the development of competition in the UK.

6.4.12 Pricing Based on Costs

6.4.13 Ofcom have briefly considered the use of cost-based pricing for the DFA remedy³⁵, but there are several aspects to such an approach that are not discussed in detail.

6.4.14 While we accept fully Ofcom's view that a cost-based approach using BT's costs and economies of scale would lead to a significant decline in infrastructure investment and loss of dynamic efficiencies, we believe there are other approaches to cost-based pricing which could be explored. We consider that it would be erroneous for Ofcom to use BT's cost levels to calculate the relevant cost base for the DFA product.

6.4.15 Ofcom's own modelling shows that, as expected, there are very significant economies of scale in BT's passive infrastructure. The duct and fibre network contains a large proportion of fixed costs, as reflected by the AVE/CVEs used in Ofcom's modelling³⁶, and this results in substantial changes to unit costs as volumes vary. Our high-level analysis indicates that the unit costs of the passive infrastructure relevant to DFA would increase by around 87% in response to a 50% reduction in volume.

6.4.16 To meet its objective of promoting competition, Ofcom must use the conditions that would prevail in a competitive market to set charges, as to set charges based on a cost-basis that can only be achieved in a non-competitive market with a very large market share is tantamount to market foreclosure, rather than promoting competition.

6.4.17 If Ofcom decides to use a cost-based approach, the methodology should be based on the full costs of either a Reasonably Efficient Operator (REO), which could be modelled using a bottom-up method, reflecting the volumes and costs that a new entrant would expect, or at the very least a Modified Equally Efficient Operator (MEEO), whereby BT's costs would be

³⁵ 2015 BCMR Annex 26

³⁶ Our analysis uses AVE/CVE data from Ofcom's 2013 LLCC modelling. Although the cost categories used in the proposed LLCC are different, and are not compatible with our analysis, the underlying methodology is the same and we believe that the elasticities will not have changed materially.

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adjusted to reflect the much reduced volumes that a new entrant infrastructure-based CP could expect.

6.4.18 We would also expect that other modelling parameters would be adjusted to encourage market entry, such as ensuring that the WACC reflected the risks associated with market entry rather than those of an established incumbent.

6.4.19 While such an approach would yield initial DFA prices considerably higher than the costs of BT at its current scale, the issues raised by Ofcom and discussed in this paper relating to investment incentives and resulting dynamic efficiency for passive infrastructure³⁷ would be addressed to a considerable extent. We would anticipate that as new entrants gain market share and build scale, the unit costs would reduce and converge to a long-term level which reflects the efficient costs associated with a competitive infrastructure market.

6.4.20 Benchmark to CLA Competitive Dark Fibre Prices

6.4.21 As noted in Section 4.6, under Section 88(4)(a) of the Communications Act 2003 Ofcom are invited to take account of the price at which services are available in comparable competitive markets. This opens up the opportunity for Ofcom to set DFA prices by reference to prices currently charged by CPs in the competitive CLA market.

6.4.22 There is now a vibrant and growing market for dark fibre provision in the CLA (to both retail and wholesale customers), and the pricing can therefore be considered to be cost-reflective. Such information is readily available to Ofcom via Section 135 data requests.

6.4.23 While it is likely that the costs to install fibre infrastructure in the CLA are higher than in some areas of the RoUK and LP, due to the higher costs of civil works, this may be at least partially offset by greater density of connections leading to greater economies of scale. It is also likely that the dark fibre cost base for many CBD areas, which would be the primary focus of investment in dark fibre for business connectivity, would have similar characteristics to the CLA.

6.4.24 Setting BT's DFA prices by reference to CLA benchmarks would have the significant advantage that the prices would track the dynamics of the competitive market, without the need for Ofcom to engage in extensive analysis or forecasting and without the inevitable uncertainties and errors arising in such a process. Ofcom's current proposals for setting the DFA price will involve future changes to the methodology, for example to change the active benchmark product³⁸; This is likely to have a disruptive effect, and may even require regulated prices to be increased. Use of competitive CLA prices as a benchmark would avoid this problem, and allow Ofcom to review prices annually based on information received from BT and the CPs.

6.4.25 Another benefit is that the DFA price would be decoupled from any particular active product, allowing the market to determine the use which is made of DFA in an efficient manner. This

³⁷ 2015 BCMR Annex 26: table A26.4

³⁸ 2015 BCMR Annex 26 para 158

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is an example of “light-touch” regulation, and would allow Ofcom to regulate in a way which mimics the effects of competition.

- 6.4.26 Given the clear benefits of such an approach, Ofcom should certainly consider and consult on using a benchmarking method to set BT’s DFA prices.