Response to Consultations on:

The Business Connectivity Market Review; The Physical Infrastructure Market Review; and The review of BT's Regulatory Financial Reporting Requirements

by the

Infrastructure Investors Group

Response compiled by GOS Consulting Limited

Non-confidential version

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Contents

1.1 Introduction

1.1.1 This document presents the Infrastructure Investors Group's (IIG's) comments on three separate, but closely related, consultations Those consultations are:

- The Business Connectivity Market Review (BCMR);
- The Physical Infrastructure Market Review (PIMR); and
- BT's Regulatory Financial Reporting Requirements (RFR).

1.1.2 These three consultations are closely related, so the IIG has decided that it is most appropriate to submit a single response as this allows cross-referencing between the responses. The three responses are, however, presented separately in the order set out above.

1.2 Executive summary

1.2.1 The IIG welcomes the opportunity to comment on Ofcom's three consultations. In summary, we broadly welcome the proposals set out in the BCMR and the PIMR consultations, but have strong reservations with regards to the significant reductions in financial reporting proposed in the RFR consultation.

The BCMR

1.2.2 The IIG warmly welcomes Ofcom's support for network-based competition as set out in the Strategic Statement issued in July 2018 and now reflected in the detailed regulatory proposals in the BCMR. Whilst previous interventions (notably the 2015 BCMR) focused on improving the terms of regulated access to BT/Openreach infrastructure, we welcome the clear focus now on seeking to accelerate the rollout of competing infrastructure. This is timely given the substantial evidence of willingness on the part of many firms, including the IIG's members, to make substantial new infrastructure investments. The potential availability of regulated dark fibre has also caused some 'hold up' problems in terms of ISPs' and MNOs' willingness to consume competitively provided rival infrastructure and we welcome the clear statement in the BCMR consultation this time that dark fibre will be a remedy to be applied only where there is strong evidence that infrastructure competition is not feasible.

Market definitions

1.2.3 With the exception of Ofcom's assumption that a competitive operator is 'present' in a location if it can reach 65% of the business customer locations, the IIG largely agrees with Ofcom's proposed market definitions. It is, however, important that the geographic markets where Ofcom considers that competition is effective or becoming effective (the High network reach (HNR) areas) are defined correctly, and the IIG believes strongly that the correct threshold is that an operator should be able to reach 90% of the relevant customers in an area before it can be found to be an HNR area.

1.2.4 Using the 65% threshold will lead to premature deregulation which could harm competing operators when they are in their most vulnerable phase – after making the initial high-risk investment and before reaching critical mass to achieve the minimum financial return required in that area.

1.2.5 Although we agree with Ofcom's market definitions, we believe that Ofcom must recognise the serious market failure in the sub-market for mobile backhaul circuits. Whilst mobile backhaul does not constitute a separate relevant market per se, there are specific supply-side competition characteristics that justify special attention and the application of specific remedies to overcome the apparent market failure. The IIG believes that there are relatively straight-forward ex-ante remedies that can be applied to rectify the situation and urges Ofcom to do so.

Significant market power analysis

1.2.6 The IIG supports Ofcom's significant market power (SMP) analysis and agrees with Ofcom's conclusion that BT enjoys a position of SMP in the contemporary Interface (CI) access market in the whole country with the exception of the CLA and Hull.

Remedies

1.2.7 Ofcom imposes different remedies in different geographic markets. Most significantly Ofcom does not impose the leased lines charge control (LLCC) for the CI access market in the HNR market and only imposes the dark fibre (DF) remedy in the BT-only exchanges for inter-exchange circuits (IECs).

1.2.8 The LLCC: The IIG agrees with Ofcom's general approach to the LLCC, in the fact that Ofcom proposes to keep prices stable rather than forcing them down further and cause additional harm to investment incentives. Ideally, we would have preferred to see some of the price reductions imposed under the LLCC imposed in 2015 reversed but in practice it is unlikely that these can be recouped having already been passed through to customers contractually. We do, however believe that CPI-0% would be a more appropriate control than the CPI-CPI proposed by Ofcom. This is primarily because CPI-0% would keep prices stable in real, rather than in nominal terms. Given the very unpredictable global and national market conditions that prevail at the moment, we believe that a CPI-CPI cap could cause unintended harm to either consumers or competitors.

1.2.9 Further, the IIG is not certain what purpose the CPI+5% sub-cap on individual services serves. If it is to reduce BT's ability to reduce prices to a level that would deter competitive network investment then we do not think it will be effective. It is our estimate that by increasing 10Mbit/s and 100Mbit/s services by CPI+5% for the 2 years, BT could reduce its 1Gbit/s prices by more than 60%.

1.2.10 The DF remedy: As noted above we welcome the clear statement that DF should be a remedy imposed only where infrastructure competition is not feasible. But the IIG believes it would be a more coherent strategic approach to allow at least two years for the unrestricted duct and pole access (DPA) remedy proposed in the PIMR to become established before determining whether a DF remedy is also necessary to overcome any remaining barriers to competition in the BT-only exchanges. This is because there is a substantial margin of error at present in determining ex ante the extent of network competition, not least at the time when significant public interventions are in contemplation that may improve the economics of infrastructure provision even in rural areas.

1.2.11 The IIG further considers that the proposed pricing of the DF remedy would distort build or buy signals for operators building new networks. If the DP remedy is introduced the pricing must be set to ensure that there is sufficient economic space between the DPA remedy pricing and the DF remedy pricing. The IIG considers that the only appropriate way of achieving that would be to

develop a reasonably efficient effective (REO) model that assumes efficient use of the DPA remedy, and using that for DF pricing.

1.2.12 The absence of remedies to prevent anticompetitive pricing by BT: The IIG believes that much greater recognition is required that the strategy of promoting infrastructure competition requires interventions to constrain anti-competitive pricing by Openreach or BT's downstream businesses. The IIG believes that Ofcom must address this significant concern (there is evidence of BT adopting radical time-limited discounts to deter competition). The IIG believes that Ofcom should follow its own guidelines in its 2013 review of cost orientation where it states that a price floor set above the regulated operator's cost level is appropriate where long-term dynamic benefits are likely to exceed short term static benefits from price reductions.

The PIMR

1.2.13 The IIG also warmly welcomes the PIMR review and Ofcom's recommendations in the consultation document. IIG members have for some time been explaining to Ofcom that a single physical infrastructure serves a number of downstream markets and that access to this common or shared physical infrastructure need to be consistent across all the relevant downstream markets.

Market definition and SMP analysis

1.2.14 The IIG agrees that physical infrastructure (PI) should include all telecoms physical infrastructure used to host fixed elements of a network. We also agree that, at this time, the PI market excludes infrastructure that hosts fixed wireless networks.

1.2.15 The IIG also agrees that there is a single national (excluding Hull) market for PI, including some locations where BT may not enjoy the position of SMP in all downstream markets.

1.2.16 The IIG further also agrees that BT has SMP in the PI market as defined by Ofcom. The ubiquity of BT's network means that no other network operator can impose a significant competitive constraint on BT in the PI market.

Remedies

1.2.17 Ofcom proposes that DPA should be imposed in the PI market and that it should be completely unrestricted from both a downstream usage and a geographic perspective.

1.2.18 The IIG strongly supports this proposal and believes that unrestricted DPA can help offset some of the harm caused by the aggressive LLCC applied in the 2016 BCMR.

1.2.19 IIG members are participating actively in the development of a new Reference Offer for the BT product to deliver DPA – the physical infrastructure access (PIA) product. That Reference Offer is intended to deliver the PIA product that implements Ofcom's 2018 wholesale local access (WLA) decision, which includes usage restrictions and geographic restrictions, but which will form the basis for the next generation which will be without restrictions, once Ofcom's proposals are implemented.

1.2.20 We have severe concerns in relation to the PIA Reference Offer that is due for release on April 1st 2019 as it is clear to us that it implements neither the specific contents nor the spirit of the Ofcom

WLA decision. We set out in this response examples of what we consider to be blatant discrimination by BT between its own downstream business and PIA customers and we believe that Ofcom should seize the opportunity of the PIMR to clarify the non-discrimination provisions set out in the 2018 WLA Statement as well as other specific provisions such as the need to include wayleaves information in the PIA product. There is an interrelationship between the overarching policy and progress on these specific contractual problems, as without the latter being resolved, making access to ducts and poles available on an unrestricted basis may actually compound some of the operational problems our members are already experiencing in seeking to make commercial use of PIA.

The RFR

1.2.21 The IIG is concerned that Ofcom is proposing to substantially reduce the granularity of financial information to be published by BT. The IIG and its members rely on BT's regulatory financial statements (RFS) to analyse BT's pricing and also to understand the likely impact of Ofcom's regulatory proposals.

1.2.22 The level of reduction proposed by Ofcom (reporting by market rather than by product in the BCMR and reporting of a single aggregate entry for the PIMR, despite there being separate products (duct access and pole access) and separate geographic markets identified within the PIMR, would severely hinder our ability to meaningful analysis and we urge Ofcom to reconsider.

2 The Infrastructure Investors Group

2.1.1 The Infrastructure Investors Group (IIG) is a collective of alternative infrastructure providers who have built, own and operate high-speed electronic communications networks within the UK, independently of BT. Whilst the members of the IIG normally compete intensely with each other, they believe that it is important to present a strong voice to protect a pro-investment environment for electronic communications networks in the UK and have come together for this sole purpose.

2.1.2 The members of the IIG are (in alphabetical order):

- CityFibre Infrastructure Holdings plc
- euNetworks Group Limited
- Zayo Group UK Limited

2.2 CityFibre Holdings

2.2.1 CityFibre is the UK's largest alternative provider of wholesale fibre network infrastructure. It has major metro footprints in 51 cities across the UK and a national long-distance network that connects these cities to major data-centres across the UK and to key peering points in London. The company has an extensive customer base spanning service integrators, enterprise and consumer service providers and mobile operators. CityFibre provides a portfolio of active and dark fibre services. CityFibre currently operates in excess of 2,250 kilometres of metro local access duct, as well as 1,139 kilometres national long-distance network connecting 22 towns and cities to data centres in London and the UK regions. In July 2016, CityFibre raised a further £200m in order to commence construction of FTTP across our towns and cities and to expand our

networks into further towns and cities, regulatory conditions permitting. In November 2017, CityFibre announced a Strategic Partnership with Vodafone to commence construction of FTTP to 1 million premises, potentially expanding to 5 million premises if regulatory conditions permit. In November 2018, following the acquisition of CityFibre by a consortium of Antin Infrastructure Partners and West Street Infrastructure Partners (a subsidiary of Goldman Sachs), CityFibre announced firm plans to expand its full fibre network to 37 named towns and cities by 2024. The consequence of these investment decisions will be increased network reach in the BCM.

2.3 euNetworks

2.3.1 euNetworks is a Western European provider of bandwidth infrastructure services. We focus on delivering scalable, fibre based products and solutions to a customer base that is at the centre of technology transformation. Our customers require fibre based data centre to data centre connectivity, both within the key cities in Europe and between these cities, supporting both their bandwidth growth and the performance requirements that their applications demand. We own and operate 14 dense fibre based metropolitan city networks. These are connected with an intercity backbone covering 49 cities in 15 countries. euNetworks leads the market in data centre connectivity, directly connecting over 370 in Europe today, with further data centres indirectly connected.

2.4 Zayo Group

2.4.1 Zayo Group is a global provider of communications infrastructure services, including dark fibre, wavelength, Ethernet and IP services. Zayo operates in the United States, Canada, France, Germany, Netherlands, Belgium, Switzerland, Italy, Ireland, 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.

BCMR

3 BCMR Introduction

3.1.1 The business connectivity market review (BCMR) plays a critical role in shaping the telecoms markets in the UK. Ofcom's objectives, determine the type of remedies applied where Significant Market Power (SMP) is found and those remedies influence the incentives and choices for BT and its emerging competitors.

3.1.2 In the last BCMR Statement in 2016, Ofcom's focus was on improving the terms of access to Openreach's infrastructure via an aggressive leased lines charge control (LLCC) which all but halved BT's wholesale prices for leased lines over a three-year period, and the introduction of a comprehensive regulated dark fibre product. One of the consequences of those decisions has been that the distances competitive providers have been willing to dig since the introduction of the 2016 BCMR is less than half of what it was before.

3.1.3 In this BCMR, the IIG welcomes Ofcom's change of focus from regulated access to the incumbent network to a focus on long term incentives to invest in much-needed new modern all-fibre infrastructure to serve the leased lines market as well as the wholesale access market – recognising that it is a single infrastructure which serves both downstream markets and that operators need to be able to serve both of those markets in order to make the investment viable.

3.1.4 The IIG is reviewing this BCMR in the context of the parallel consultation on the physical access market review (PIMR) and it is in light of the proposed removal of usage and geographic restrictions of the duct and pole access remedy (DPA) that we believe that this BCMR could help re-energise investment in new fibre infrastructure to serve the BCM. Without the unrestricted DPA remedy, the provisions in this BCMR will not be sufficient to achieve that.

4 BCMR CI access product market definition

4.1.1 Ofcom defines a single relevant product markets for CI access services.

4.1.2 Ofcom's approach to product market definition is based on the well-established Hypothetical Monopolist Test (HMT), which is the normal method for defining relevant markets. The IIG therefore has no objection to the use of this methodology.

4.1.3 We note that Ofcom considers supply side substitution as a more significant source of competitive constraint than would normally be the case. The IIG agrees with this view and with Ofcom's statement at BCMR 4.11 that, where a supplier already has a connection to a client for one bandwidth, that can easily be upgraded to another at little incremental cost. Thus, a hypothetical monopolist of one bandwidth (e.g. 1 Gbit/s) would not be able to impose a SSNIP profitably as a supplier of another bandwidth would be able to enter the market at little incremental cost.

4.2 A single CI Access market across all speeds

4.2.1 The IIG agrees with Ofcom that all CI bandwidths are in the same relevant market and that calculating whether a SSNIP would be profitable or not for a hypothetical monopolist of one bandwidth is unnecessary to demonstrate this.

4.2.2 The European Commission's Guidelines on market analysis state:

> "*NRAs should … commence the exercise of defining the relevant product or service market by grouping together products or services that are used by consumers for the same purpose (end use).*"[1]

4.2.3 The IIG considers that whilst consumers may buy different bandwidths of CI Access, they can be grouped together as products that are used for the same purpose or end use: namely moving data between locations. CI Access bandwidths also have certain characteristics in common that are different from other access services (e.g. symmetry, uncontended) that further support our view that they are used for the same purpose and therefore fall in the same market.

4.2.4 In response to the 2016 BCMR, the IIG argued that there is a break in the market at 1Gbit/s, largely due to competitive conditions. We still consider that higher bandwidths are subject to a greater intensity of competition. However, in this review Ofcom has taken account of these different competitive conditions in its SMP analysis and in the application of differentiated remedies in different geographic markets. The IIG considers this to be a proportionate approach and therefore accepts that the relevant market consists of all bandwidths.

4.2.5 At this time, we also agree with Ofcom that asymmetric copper-based broadband services, which largely serve residential and SME markets, are in a different relevant market from the higher quality business connectivity products addressed in this review.

4.2.6 Current asymmetric broadband services are based on the legacy copper infrastructure and have a maximum bandwidth that is substantially lower than can be delivered over new Fibre to the Premises (FTTP) technology, which can offer symmetric Gigabit connections. As FTTP becomes more prevalent in the UK, it is likely that the markets for broadband services and business connectivity services (as defined in this review) will merge. Once multi-hundred Megabit and Gigabit services (symmetric and asymmetric) are available on a mass market basis, this is likely to mean that large numbers of business and residential customers will be served by the same networks and services.

4.2.7 BEREC has recently recognised that technological changes "*might require a redefinition of the markets and physical infrastructure remedy. This might include greater convergence in wireless and fixed services, or between markets 3a, 3b and 4.*"[2] The IIG is pleased to see, therefore, that Ofcom will undertake integrated market reviews covering all forms of fixed access from 2021.

[1] European Commission 'Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications and services (2018/C 159/01)' 7 May 2018. Para. 33.

[2] BEREC (2018) Public Consultation: BEREC Report on Access to Physical Infrastructure of the Context of Market Analyses BoR (18) 228 P16.

4.3 Demand Side Substitution

4.3.1 The IIG largely agrees with Ofcom concerning demand side substitution. We agree that 10 Mbit/s and 100 Mbit/s bandwidth CI Access circuits are clear substitutes for each other based on negligible price differences between bandwidth below 1 Gbit/s. We also agree that the price differentials between VHB circuits may make a SSNIP profitable, as they tend to be greater than the 10% level of a SSNIP.

4.3.2 As noted above, we also agree that EFM and asymmetric broadband are not currently in the same market but that there is likely to be convergence in the coming years.

4.3.3 Ofcom considers whether dark fibre could also act as a demand side constraint. We fully agree that this is not likely to happen for low bandwidth services. However, the IIG members have seen evidence that some wholesale customers of VHB circuits are more likely to use dark fibre as a substitute. There is only limited substitution by retail customers who would need the expertise to install and manage equipment to light dark fibre. Whilst dark fibre is a component of active circuits (equipment needs to be added to the line to create an active service), a significant number of wholesale customers of VHB circuits have the technical competence to add equipment and manage the service themselves. In the event of a SSNIP, therefore, at least some such customers would be likely to switch to dark fibre and this may make the SSNIP unprofitable. We will consider further the constraint placed by dark fibre in our analysis of supply side constraints, where we argue it forms an even stronger constraint.

4.4 Supply Side Substitution

4.4.1 The IIG supports Ofcom's focus on supply side substitutability. The European Commission's *"Notice on the definition of relevant market for the purposes of Community competition law"* (Relevant Market Notice) states that supply side substitution can have an impact in certain circumstances that has the same immediacy and effectiveness as demand side substitution (Para. 20).

4.4.2 The Relevant Market Notice provides the example of when firms market a range of quality or grades of one product, which are not direct substitutes for one another but which allow the supplier to switch between levels of quality dependent on the needs of consumers and the offerings of their rivals. A concrete example is provided in Bishop and Walker (2010). They cite the example of shoes, where a manufacturer produces shoes of different sizes, which are not demand side substitutes, as a person requiring size 42 could not buy size 43 in response to a SSNIP. However, producers can easily change production to a different size[3]. Thus, a hypothetical monopolist of size 42 shoes could not profitably impose a SSNIP as a manufacturer of size 43 could easily enter the market.

4.4.3 The IIG considers that the BCMR market has similar conditions in that a supplier of, say, 100Mbit/s circuits can as easily switch to providing 1Gbit/s circuits for the reasons explained by Ofcom. The IIG also agrees with Ofcom that there is no difference in dig costs between different speeds. We therefore consider that supply side substitution between CI Access circuits has the level of effectiveness and immediacy noted by the European Commission.

[3] Bishop, S., & Walker, M. (2010). *The economics of EC competition law: concepts, application and measurement* (Vol. 188). London: Sweet & Maxwell. (Page 120)

4.4.4 Ofcom also emphasises the importance of supply side substitution by providers of dark fibre. Whilst dark fibre is not, in itself a perfect substitute for CI Access, providers of dark fibre such as members of the IIG could easily enter the CI Access market in response to a SSNIP by a hypothetical monopolist. Ofcom is correct when it states at 4.73 that providers of dark fibre *"would be able to provide CI Access services sufficiently quickly and at minimal cost in the event of a SSNIP"*. However, the ease of switching from supplying dark fibre to supply an active circuit should not be exaggerated as there are some fixed costs that would need to be recovered across multiple circuits.

Mobile backhaul circuits

4.4.5 Ofcom proposes that CI Access circuits used for mobile backhaul (MBH) form part of the overall CI Access market and there is no separate product market. The IIG agrees with this assessment. However, we would like to draw Ofcom's attention to the apparent behaviour of BT Wholesale in the pricing of MBH that makes it difficult for IIG members, and indeed other infrastructure providers, to compete for MBH circuits.

4.4.6 [✂]

4.4.7 Alternative operators, such as IIG members, would be able to compete to provide access in urban areas but not in rural areas. However, the observation of IIG members is [✂].

4.4.8 This apparent pricing strategy prevents IIG members from competing for MBH, but also has a more significant effect on competitive investment. A market entry strategy of alternative infrastructure providers is to find an "anchor tenant" in a town or city. This anchor tenant provides the security to invest in a town and the customer base to allow the alternative operator to take the risk of market entry in a given location. IIG members have found that there are two principal anchor tenants: local authorities and MNOs. If BTW's wholesale pricing strategy effectively forecloses this market segment to infrastructure operators then investment in alternative infrastructure is likely to be negatively affected.

4.4.9 The IIG's view is that Ofcom should undertake an investigation of BT's pricing strategy in MBH, bearing in mind that BT Group plc is the regulated entity and not Openreach, other than as a member of BT Group. In the event that Ofcom finds that BT's pricing may be deterring competitive entry, then Ofcom should consider ex ante remedies. The IIG's initial suggestions for possible ex-ante remedies include:

- Prohibition of linked sales (in that the sale of access circuits to MNOs is linked to the sale of the core network service);

- Prohibition of national purchasing schemes, in particular prohibition of purchasing arrangements that cross the different regulatory markets as defined by Ofcom.

4.4.10 We believe this a complex issue and it is possible that other remedies will achieve the same end; we would be very interested in engaging with Ofcom in the necessary analysis.

4.4.11 Whilst urgently asking Ofcom to address the severe market failures outlined above, the IIG agrees with Ofcom that the CI Access market comprises all CI Access bandwidths and dark fibre in the access network, including mobile backhaul circuits.

4.5 CI Access Geographic Market Definition

4.5.1 The IIG broadly agrees with Ofcom's approach to geographic market definition based on the presence of operators in a given geographic area, although we think that Ofcom has taken too granular a view of markets, thereby creating more geographic markets than is necessary.

4.5.2 The IIG is very pleased to see that Ofcom has moved away from the high boundary threshold it used in the 2015 BCMR to separate the Central London Area (CLA) from the Rest of the UK (RoUK). We agree with Ofcom that the presence of two principal operators in addition to BT is sufficient to create competitive conditions that are significantly different from BT plus one operator and sufficiently similar to the BT plus three operators that BT + 2 is likely to form a boundary between geographic markets. Ofcom could indeed have gone further and cited the wealth of economic analysis of competitive market structures that support its position[4].

4.5.3 In response to the 2015 BCMR consultation the IIG set out the economic evidence that the marginal effect on competitive outcomes of a fourth firm was sufficiently small (though positive) that a three firm market can be considered more likely to be competitive than a two firm market, although it should be noted that in markets such as Business Connectivity there may be a long lead time between a firm being present in a market and winning business. Thus, it may be better to consider a firm as placing competitive constraints on the incumbent(s) when it has a sustainable presence in the market, without the market necessarily being 'effectively competitive'.

4.5.4 We have reproduced the relevant text from the 2015 response below. In essence, the evidence by several researchers in a wide variety of markets shows that three firms is sufficient to ensure competitive outcomes.

4.5.5 Perhaps the most relevant academic article is by Xiao and Orazem[5], 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.

4.5.6 This finding is supported by other academic literature in other markets. In particular, a seminal article by Bresnahan and Reiss[6], 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*

[4] See Annex X for a summary of that evidence.

[5] Xiao, M., & Orazem, P. F. (2011). Does the fourth entrant make any difference?: Entry and competition in the early US broadband market. *International Journal of Industrial Organization*, *29*(5), 547-561.

[6] Bresnahan, T. F., & Reiss, P. C. (1991). Entry and competition in concentrated markets. *Journal of political economy*, *99*(5), 977-1009.

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". [7]

We stress that whilst we consider that the presence of three firms is sufficient to find that an area is in a separate geographic market due to different competitive conditions, this is not sufficient to find that there is necessarily no SMP in a market with three operators. It remains necessary for Ofcom to examine the degree of competition in the market to determine if any firm has SMP using the usual tests.

Dig Distances

4.5.7 The distance that an alternative operator is prepared to dig is a key part of Ofcom's geographic market definition. The IIG accepts that dig distances are important, and agrees with the 50m distance set by Ofcom. However, the IIG also holds the view that Ofcom's aggressive charge control set in the 2016 BCMR, and subsequently rejected by the CAT, has shortened the distance BT's rival networks are prepared to dig and thus, that regulatory intervention has itself reduced the size of competitive and prospectively competitive markets.

4.5.8 In the 2016 BCMR, Ofcom set an average (median) dig distance of 100m. This of course means that 50% of digs are longer than 100m, although they did not provide data on the variation around the median. In this market review, Ofcom uses a dig distance of 50m, which, they say, is the distance dug for ca. 80% of all digs (para. 5.20). This paragraph also notes that the median distance is just 18m.

4.5.9 We support Ofcom's use of a frontier representing ca. 80% of digs rather than the median as this captures the economic distance for the majority of digs rather than just 50% of digs. It is therefore more representative of the extent to which operators are prepared to extent their network to connect new customers.

4.5.10 We note that Ofcom has not taken account of potential regulation under the Physical Infrastructure Market Review (PIMR), which would allow access to BT's ducts and poles and so eliminate the need for a proportion of digs as firms could blow fibre through BT's ducts, where available.

4.5.11 The IIG considers that Ofcom is right not to consider the effects of regulation under the PIMR as it is not yet in place and will have an unknown and possibly minimal effect during the period of this market review.

Network reach

4.5.12 The IIG however disagrees with Ofcom's view that if a network can reach 65% of business locations in a postcode sector economically then it should be considered present in the local market. In previous BCMRs, Ofcom has set that threshold at 90%, which has been generally accepted by the industry, and Ofcom has provided no explanation why this threshold should now be reduced.

[7] Response to the 2015 BCMR and LLCC Consultations by the Infrastructure Investors Group Paras. 4.5.10 – 4.5.11

4.5.13 The IIG's view is that if an operator can only reach 65% of the market then BT, which will be able to reach 100%, is not under a sufficient competitive constraint. By adopting the 65% threshold, therefore, Ofcom is likely to over-estimate the size of the markets that are likely to be subject to competition, especially the size of the HNR markets.

4.5.14 The IIG has strong concerns that overestimating the size of the HNR markets could cause significant damage to the competition that does exist[✂].

4.5.15 To support its stated strategic objective of encouraging investment in competing all-fibre networks, Ofcom needs to tread with caution when removing regulatory constraints from BT. The IIG considers that the HNR geographic market is larger than it should be and that the removal of remedies including the LLCC could cause real harm to competition. The IIG also notes that Ofcom is proposing no regulatory measures to prevent BT from pricing in an anticompetitive way in locations, or for specific products, where it faces competition (or emerging competition) from other network operators. This is the case both inside HNR areas and in the rest of the country. The IIG considers this to be indirect conflict with Ofcom's clearly stated strategic objectives and priorities.

Summary

4.5.16 The IIG broadly agrees with the proposed geographic markets[8], although we do think that Ofcom may have been too granular in defining five geographic markets outside the Hull area. However, if defining so many geographic markets allows Ofcom to introduce different remedies in different geographic markets where competition is already effective, where it is prospective and where it is unlikely to emerge, then we have no fundamental objection to the plethora of geographic markets. The IIG will respond more fully to Ofcom's current consultation on its future approach to defining geographic markets.

5 BCMR CI Access SMP Findings

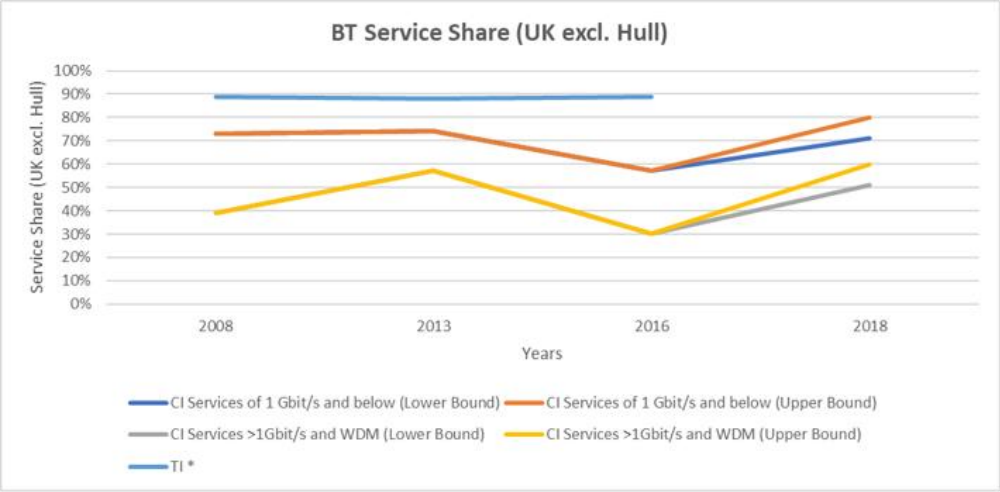
5.1.1 Ofcom finds that BT has SMP in all defined relevant markets.

5.1.2 In its data collection and collation exercise, Ofcom explains that it conducted an extensive data cleanse to ensure only the relevant services were captured for the purposes of measuring service share in its SMP assessment. However, Ofcom also cites its concerns with the quality of the inventory datasets and, due to its "effective weight", instead of using full inventory data sets, it uses the new connections in 2017 as the basis for determining service shares and making the SMP assessment.

Under Table A7.4 (Annex 7) Ofcom highlight the need to use new connections from 2017 as it is statistically consistent with the previous BCMR's.

Figure 1 below further highlights this significance.

[8] With the exception of the HNR areas, which we consider to be significantly over-estimated in geographic coverage.



*The service share for TI circuits in the latest BCMR consultation [2018] are not included.

5.1.3 The graph above shows that in the 2016 BCMR there was a statistical dip in BT's service share, which Ofcom cites was down to the same inconsistencies in the inventory data as found in the analysis for the 2018 BCMR consultation. Given the circumstances as explained by Ofcom, we are in agreement with Ofcom that it is appropriate and correct to use the new connections data. As explained throughout this document, the IIG urges Ofcom to act with caution before removing regulatory constraints from BT, as this could risk real harm to the emerging competition.

5.1.4 Overall, it is the IIG's view that a more robust measure of market share would come from an analysis of the total existing stock of CI Access lines rather than new connections in 2017 and we encourage Ofcom to ensure that full inventory data is available from all relevant parties for the 2021 all access market review.

5.1.5 As with the geographic market definition, Ofcom does not appear to take account of access as a result of the PIMR. At 6.24 Ofcom states: "BT has a significant cost advantage when it is fibre or duct connected while rivals are not. If BT has an existing fibre connection to the customer, the incremental cost of connecting to that customer is negligible". This advantage will, however, be reduced once rivals have access to BT's ducts under regulation imposed in the PIMR. However, the IIG supports Ofcom's approach here as such regulation is not in place and may not be if the PIMR consultation finds market conditions that substantially change Ofcom's findings in the consultation.

5.1.6 The IIG supports Ofcom's approach to the analysis of other indicators of market power.

5.1.7 The IIG agrees with Ofcom that BT has SMP in all geographic markets except the CLA. We find Ofcom's analysis thorough and robust.

5.1.8 Whilst SMP is a threshold measure, i.e. a firm either has or does not have SMP, we do consider that BT's SMP is more entrenched in some geographic markets than in others. It should be obvious that where BT is the only operator it is unlikely that BT's SMP will ever be under threat. However, where there is at least one other operator, and particularly in urban HNR areas, BT's SMP is likely to be under more threat and so its ability to abuse its position is more constrained. It is therefore vital that Ofcom sets regulation in each market that recognises the degree to which competition is prospective in each of these markets and does not just regulate all markets in the same way as if BT faced no competition.

6 BCMR CI Inter-exchange Connectivity Product Market Definition

6.1.1 The IIG agrees with Ofcom that demand side substitution is likely to be weak and asymmetric. The IIG also agrees with Ofcom that supply side substitution is likely to be strong enough to make a SSNIP unprofitable, for the same reasons as those discussed under CI Access.

6.1.2 However, the IIG also considers that Ofcom has placed too much emphasis on the mechanics of the HMT rather than consider the end use of inter-exchange connectivity from the consumer perspective. We believe that calculating whether a SSNIP would be profitable or not is unnecessary for reasons explained below.

The European Commission's Guidelines on market analysis state:

"*NRAs should … commence the exercise of defining the relevant product or service market by grouping together products or services that are used by consumers for the same purpose (end use).*"[9]

6.1.3 The IIG considers that consumers use 1Gbit/s and 10Gbit/s inter exchange circuits for the same purpose: transporting data between exchanges, albeit circuits with a higher bandwidth may be used for transmitting larger volumes. Both bandwidths are used to transport data between exchanges and it is only their capacity that differs. This is analogous to lorries of different tonnage being used for the same purpose, but larger trucks transport more goods in a single journey. Whether a SSNIP at one bandwidth would generate demand side substitution or not is in our view, therefore, irrelevant as both 1Gbit/s and 10Gbit/s circuits serve the same purpose. There is no need for Ofcom to rely on the HMT to define this product market.

6.1.4 The IIG does not object to Ofcom's geographic market definition, as it is clear that one exchange is not a substitute for another. However, we think that Ofcom could take a similar approach to that taken in the CI Access market definition and in the Wholesale Central Access market review and collate exchanges with homogenous competitive conditions into geographic markets rather than define each exchange as a market.

6.1.5 The IIG agrees with Ofcom's finding that BT has SMP in BT only and BT + 1 exchanges. For all the reasons we have discussed above[10] we consider that two firms in a market do not constitute effective competition. We also agree that in the IEC market, no firm is likely to have SMP where there are three operators present[11], including BT, in an exchange, although it is important to note that BT's rivals need to be substantial firms that can provide sustainable competition.

6.1.6 The IIG has reviewed the list of Principal Core Operators set out by Ofcom in paragraph 7.49 and agrees that these are the right operators to include.

[9] European Commission 'Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications and services (2018/C 159/01)' 7 May 2018. Para. 33.

[10] See section 4.5 of this document.

[11] Subject to our concerns with Ofcom's assumption that an operator is present when it can reach 65% of customer locations within the determined dig distance. See paras 4.5.12 to 4.5.15 above.

7 Ofcom's approach to remedies in the BCMR

7.1.1 The IIG agrees with Ofcom's approach to remedies in the BCMR. Particularly with the recognition of prospectively competitive areas and the need to adjust remedies in those areas to encourage further competition to develop whilst still protecting consumer interests.

7.1.2 As set out below in this response document, we believe that Ofcom has taken the right approach with regards to consumer protection, but has omitted the need to also protect nascent competition from potentially anticompetitive actions by BT.

7.2 General Remedies

7.2.1 The IIG members are not current users of BT's active BC services and therefore have limited exposure to the quality of service and other general obligations.

7.2.2 It is our strongly held view that the need for remedies such as quality of service regulations will be substantially reduced once competitive operators have deployed extensive new fibre networks in most of the country. The IIG would support the removal of quality of service regulations once two or more competitive networks are established in a location.

7.3 Dark fibre remedy

7.3.1 Ofcom proposes that dark fibre (DF) should be applied from BT-only exchanges to other BT exchanges, citing the fact that no competitive provider has yet entered those exchanges as a rationale for needing to introduce the DF remedy to reduce barriers to such providers reaching those exchange locations.

7.3.2 In its Strategic Policy Position document, dated July 24th 2018, Ofcom put a clear focus on the need to ensure that investment incentives for new full fibre networks are maximised, with a strong emphasis on enabling the deployment of new full-fibre networks facilitated by unrestricted DPA. The IIG agrees with that position. Therefore, we would have anticipated that, consistent with the strategy, DFA as a remedy would be imposed only once the nature and extent of infrastructure competition, enabled by DPA, has been established. This would seem an appropriate approach not least given that, whilst it would always be possible to impose DFA that remedies an infrastructure competition shortfall in future rounds of regulatory intervention, the introduction of DFA (particularly with the proposed pricing methodology) will sterilise the market for infrastructure competition on a permanent basis. It is clear that the ability to use the DPA remedy anywhere will change the economics of operators connecting to BT exchanges which they have previously not found it economic to connect to. The extent of feasible rollout will also be positively affected by other factors such as public interventions to support infrastructure rollout in rural areas.

7.3.3 The IIG members all have presence in some BT exchanges and offer inter-exchange connectivity to other providers. It is our view that the forthcoming unrestricted DPA remedy will go a substantial way towards reducing barriers to reaching more BT exchanges, and that the new unrestricted DPA remedy should be allowed the two years between the implementation of this PIMR and the next PIMR in April 2021 to demonstrate what its impact will be for those BT-only exchange locations.

7.3.4 It is our view that the imposition of the DF remedy in parallel with the unrestricted DPA remedy would be counter-productive and would cause some operators to not extend their own networks to BT-only exchanges which would otherwise become economically viable using the unrestricted DPA remedy.

7.3.5 The IIG also believes that the co-existence of DPA and DF in the same locations could be unstable. As DF is only mandated for connections from BT-only exchanges, the arrival of infrastructure from a new operator using DPA at an exchange would mean that DF was no longer a mandated remedy, and could be withdrawn by BT. This would present a significant risk to operators making use of the DF remedy.

7.3.6 We also note that the DF remedy constrains the access point locations to BT exchanges, whereas DPA would allow access at many other points. This suggests that DPA is a more effective means of encouraging true infrastructure competition, allowing modern and efficient architectures that are not constrained by BT's exchange topology.

7.3.7 The IIG considers that imposing both DF and DPA in the same locations could lead to over-regulation and that, as a minimum, Ofcom should introduce the furthest upstream remedy first and only apply the downstream DF remedy of the upstream remedy is proven to not address the competition concern identified.

7.3.8 If Ofcom were to proceed with the implementation of the DF remedy despite the above strong reasons to not do so, then the IIG considers it imperative that the method for setting the pricing of the DF product be reviewed and amended to ensure that there is sufficient economic space between the DF and the DPA products to provide efficient build or buy signals to competitive network operators choosing between the two remedies.

7.3.9 Modelling by IIG members suggests that the annual cost to install and operate a point-point fibre connection using DPA is in the [✂].

7.3.10 The IIG further notes that the current minimum price for rental of spine duct using DPA is £0.13 per metre per year [✂].

7.3.11 [✂] .

7.3.12 The IIG believes that the most appropriate method for setting the DF pricing (should the product be introduced), would be to use a reasonably efficient operator (REO) costing approach, assuming that the REO uses DPA to the extent available (by the next PIMR, Ofcom should have much better data on the amount of DPA competitive operators could reasonably be expected to use) and then adding the costs of providing the dark fibre service onto the REO cost of providing the passive ducts and fibres.

7.3.13 Such an approach would benefit from the economies of scale due to the use of BT duct infrastructure, but would also ensure that the costs incurred by the operator installing its own fibre (using DPA where available) would be lower than the costs of simply buying DF, thus preserving the economic incentives for the operator to invest in its own infrastructure.

Defining the DF remedy

7.3.14 The IIG believes that Ofcom have not sufficiently defined the scope of the DF remedy. There is currently no distance limit applied to the IEC DF circuits; it is understood that DF links may traverse one or more intermediate exchange nodes, but it would not be technically feasible to operate a passive link beyond 100-200 km (and in practice, multiple jumpers and joints could significantly reduce this limit). The IIG therefore suggests that Ofcom defines a maximum distance limit for each IEC DF circuit. Given that BT currently operates active mainlinks over its fibre network as part of the EAD service, and these are subject to a distance limit (35km radial/66km route distance[12]), we suggest that the same limit should be used for IEC DF.

Unintended consequences on focusing on connections to BT exchanges

7.3.15 The IIG understands Ofcom's rationale for wanting to reduce barriers for competitive providers to connect to as many of BT's exchanges as possible, as this could unlock competitive supply in areas which currently have no or limited competition.

7.3.16 We are, however, concerned that the focus on facilitating connectivity to BT's infrastructure and BT's network architecture will have the effect of further entrenching BT's dominance as other operators' networks will be co-located with BT's network rather than with the new networks of other wholesale providers. This will result in network architectures that simply copy BT's, restricting innovation in the market.

7.3.17 It would be unfortunate if Ofcom's remedies were to further entrench the dependency on BT's network and network architecture, rather than facilitating the deployment of new all-fibre network based on ring-configurations instead of the traditional tree and branch network operated by BT. Especially so when it is envisaged that the networks currently being planned and deployed by competitive providers will, in many locations, become the new de-facto local access network – effectively replacing BT's existing copper-based network.

7.3.18 The IIG believes that the use of a DPA remedy gives other operators that flexibility (as operators can choose to use part of BT's PI network and then locate the ends in their own networks, whereas as DF remedy does not have that flexibility as it is a connection between two BT exchanges).

7.4 Leased Lines Charge Control remedy

7.4.1 Ofcom proposes that the leased lines charge control (LLCC) should be CPI-CPI. The IIG understands Ofcom's rationale for this to be that it does not want to further force BT's wholesale prices down as this may damage investment incentives for both BT and other providers. We agree with that rationale and support Ofcom's general approach to the LLCC.

7.4.2 The IIG members are significant investors in new fibre networks and it is clear that BT's regulated wholesale prices set an important competitive benchmark, to which other operators are being compared.

7.4.3 New modern resilient ring-based fibre networks offer substantial additional benefits to customers and it is important that Ofcom recognises the dynamic benefits resulting from

[12] These distances are for the extended reach variant of EAD.

network-based competition, compared to short term static benefits that would result from further reductions in BT's regulated wholesale prices.

7.4.4 During the Summer of 2018, CityFibre commissioned a study into the behaviour of telecoms buyers and how they value the features and benefits that can only be offered by operators that do not use BT's network/wholesale services[13]. That study demonstrates very substantial economic benefits from network-based competition and that the features and benefits from network-based competition are highly valued by buyers of electronic communications services. The IIG encourages Ofcom to examine the report of that study carefully.

7.4.5 We do, however, believe that it would be more appropriate to set the LLCC at CPI-0%, as that takes out the unknown factor of the CPI from the equation, in that the prices would be stable in real terms, not in nominal terms. This is particularly relevant for the next few years, which may be a period of economic uncertainty. The effects of Brexit, global "trade wars" and a potential global economic slow-down could all feasibly result in an increase in inflation which would result in more aggressive real-terms price reductions in the wholesale leased lines market than Ofcom appears to be intending. Alternatively, a deflationary environment under a CPI-CPI control would result in real-terms price increases, which again would not appear to be Ofcom's intention. CPI-0% would therefore appear to be a more rational approach.

7.4.6 The IIG support Ofcom's proposal that time-limited discounts (special offers) should not be allowed to count towards compliance with the CC, and also the continued exclusion of volume and geographic discounts.

7.4.7 We note, however, that the exclusion of these discounts from the CC does not in itself prevent BT from using discounts as a means to engage in anti-competitive pricing. As well as compliance with competition law, we believe that any discounts offered by BT should be justified with respect to costs, and the reference for this should be the costs of a reasonably efficient operator (REO) operating at a market share appropriate to a competitive market.

7.4.8 Table 5.2 of the BCMR V2 shows the time-limited discounts BT has introduced since 2013. Despite Ofcom also not allowing discounts to count towards the LLCC compliance in the past two charge control periods, BT has nevertheless offered very substantial discounts, including a discount of 66% in the past year. Ofcom therefore needs to assume that BT will continue to offer aggressive discounting and introduce appropriate measures to ensure that BT cannot use discounting to deter investment in competing networks.

7.5 Provisions to prevent anticompetitive behaviour

7.5.1 The IIG notes that Ofcom has not discussed the possibility of BT pricing in an anticompetitive manner to deter investment in competitive all-fibre networks. The principal focus in the consultation document appears to be to prevent BT from imposing excessive charges.

7.5.2 The IIG members build their own networks and compete directly with BT in the BCM. We have documented before the impact of BT's substantial economies of scale on regulated pricing using BT's cost base (Fully Allocated Costs (FAC)) and how it is not feasible for other operators (regardless how efficient and despite operating efficient modern all-fibre networks) to match such prices. Given Ofcom's new focus on maintaining/maximising investment incentives for BT

[13] See Annex 1 for a copy of the study.

and competitive providers, it is our concern that BT has the ability, opportunity and incentive to price in a manner that would make it impossible for competitive providers to compete.

7.5.3 It is unclear whether the CPI+5% cap on each CI product is intended to reduce BT's ability to set prices at a level that would deter investment in competitive networks, but our analysis suggests that, if that was the objective, the CPI+5% cap does not achieve that objective. In fact, our analysis suggests that, if the 10Mbit/s and 100Mbit/s prices were increased by CPI+5% for the two years, then BT would be able to reduce 1Gbit/s pricing by around 40%.

7.5.4 It should also be noted that the IIG has equal concerns at BT's potential for anticompetitive pricing in HNR areas, where no LLCC is applied. This is particularly the case due to Ofcom's use of the 65% reach threshold to define operator presence as part of defining the HNR markets, as competition in such areas will be particularly sensitive to anticompetitive pricing.

7.5.5 The IIG strongly encourages Ofcom to analyse the scope BT has for pricing to deter competitive network investment and device suitable remedies to prevent this from happening. We would be very interested in working with Ofcom in finding suitable remedies.

PIMR

8 PIMR Introduction

8.1.1 In its response to the 2015 BCMR and LLCC consultations, as well as in individual responses by some IIG members, the IIG presented strong arguments in relation to the economics of building new competitive electronic communications networks, including new physical infrastructure. Ofcom, however, proceeded with the proposed aggressive LLCC and the introduction of the dark fibre access (DFA) remedy, both of which the IIG had warned would cause significant harm to investment incentives in the UK.

8.1.2 As the 2016 BCMR draws to its conclusion, it is evident that the LLCC did indeed have the effect anticipated by the IIG. The DFA remedy was not implemented, but the LLCC on its own caused significant reductions in investment and dig distances by competitive providers.

8.1.3 As investors in new electronic communications networks, the IIG members have felt the impact of the current LLCC directly and, whilst welcoming the change in direction signalled by the less aggressive proposed LLCC for the next BCMR, a substantial amount of damage has already been done and the clock cannot be turned back on those effects.

8.1.4 The introduction of unrestricted Duct and Pole Access (DPA) helps to partially compensate for the effect of the current LLCC, and the IIG welcomes this initiative. Once this remedy is implemented and the BT Physical Infrastructure Access (PIA) is made fit for purpose for scale deployment, then the IIG members believe that they will be able to resume investment at a scale similar to that prior to 2016.

8.1.5 The IIG, however, has severe concerns that the PIA product is presently not looking likely to be fit for purpose for scale deployment, when the new Reference Offer is launched in April 1 2019. Some IIG members have been active participants in the Reference Offer negotiations facilitated by the Office Telecommunications Adjudicator (OTA) to implement the improved PIA product specifications as mandated through Ofcom's Wholesale Local Access Market review statement in March 2018.

9 PIMR product market definition

9.1.1 Ofcom defines a single PI product market which is national in reach (excluding Hull) and which enables local access connections and long distance connections alike.

9.1.2 In performing its PI product market analysis, Ofcom starts with a focal product defined as "all telecoms infrastructure used to host fixed elements of a network". This excludes masts and antennae for wireless networks, even if those wireless networks are 'fixed'. The IIG agrees with the focal product definition.

9.1.3 For future reviews, the IIG considers it is likely that masts and antennae for fixed wireless networks will become part of the product market. With the deployment of 5G technology, it is

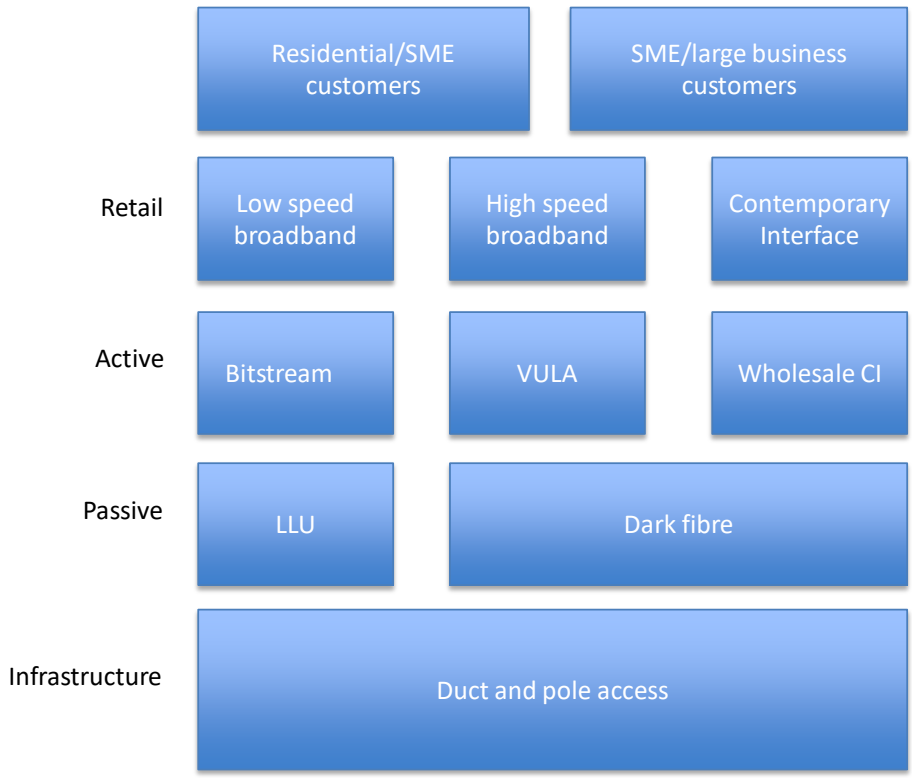
widely anticipated that very high-speed broadband and potentially also point-to-point connectivity will be increasingly provided using fixed wireless networks.

9.1.4 The IIG understands that BT intends to use fixed wireless services to meet its USO requirements in some geographies, and as such the omission of fixed wireless infrastructure would likely result in the PI access remedy not enabling ubiquitous access across the UK.

9.1.5 BEREC (2018) suggests that local access to PI is the "natural" candidate for the focal product market, and that access in other parts of the network can be included based on homogeneity of competitive conditions. The IIG agrees that, despite competition varying across the UK in both access and non-access physical infrastructure, there are substantial benefits to the product market being national in scope. Were this not the case, then competitive providers seeking to use the resulting remedy would almost certainly find pockets of unserved areas (that is where no competitive supply exists and where the PI remedy does also not apply due to its being restricted to subsets of the country).

9.1.6 The diagram below shows how Physical Infrastructure supports passive, active, wholesale and retail markets regardless of the medium (copper or fibre) or the technology (CI Access, bitstream etc) and end user groups (residential/business) further downstream. This indicates that, even if there is competition in downstream wholesale and/or retail markets based on access at the passive level, as happens with LLU, the PI market remains a single market.

Figure 2: Vertical relationships in copper and fibre broadband markets



9.1.7 Although there is evidence of competition in the provision of non-access PI infrastructure, which could suggest that this should be defined as a separate market, the IIG considers that such competition is only on a relatively small number of routes and that, for reaching the majority of locations in the UK, it is still not possible to procure wholesale access from competitive providers.

The network presence of competitive providers across the UK is driven by specific customer needs, not by a need to provide ubiquitous connectivity.

9.1.8 The IIG agrees that non-telecoms infrastructure (ATI) is a poor substitute for access to BT's ducts and poles. This position is also supported by BEREC[14], which points to ARCEP's 2017 finding that waste water and other utility networks were poor substitutes.

9.1.9 The IIG further agrees that supply side substitution is by definition weak due to the considerable time it would take a supplier to enter the market in response to a SNIPP and also due to the significant sunk costs in the existing physical infrastructure. Whilst the IIG members do build new electronic communications networks and own considerable amounts of physical infrastructure, the result of the current BCMR LLCC (ending in March 2019) has been that it is now very difficult to cost-justify construction of new physical infrastructure. This is also evidenced by the substantial reduction in dig distances undertaken in 2017, compared with those measured for the purpose of the 2016 BCMR. Due to the effect of the 2016 BCMR LLCC, the IIG considers that a large part of new network investment in the future will need to use access to existing physical infrastructure.

9.1.10 A provider of a wholesale input can be subject to indirect constraints from a rival provider at the retail level. Where such indirect constraints occur, a monopolist of a wholesale input cannot raise prices above the competitive level because consumers would be likely to switch to an alternative vertically integrated supplier that did not offer a wholesale product, in sufficient numbers that the price rise would be unprofitable. The IIG considers that to the extent that indirect constraints exist in this market they will be very weak and unlikely to constrain BT. This is because no vertically integrated rival is able to offer the national ubiquity that BT can and so any other operator looking to purchase PIA on a national basis would be required to buy from BT. Further, the cost of PIA is likely to be a relatively small proportion of the retail price and so even were a price rise to passed on in full, it would not raise the retail price by a SSNIP. Thus we would not expect alternative infrastructure providers to be in the same relevant market due to indirect constraints.

10 PIMR geographic market definition

10.1.1 Ofcom finds four geographic markets outside the Hull area: BT only areas, BT and Virgin Media areas, High Network Reach (HNR) areas and the Central London Area (CLA). HNR areas and the CLA are groups of postcode sectors where BT plus at least two other principal operators are present.

10.1.2 Ofcom uses network reach analysis to define relevant geographic Physical Infrastructure (PI) markets. The IIG agrees that the principle of presence of competing PI is the correct measure to use for defining relevant geographic markets for PI. The IIG further considers it inappropriate that Ofcom does not provide better transparency of the level of Virgin Media market share at which it considers Virgin Media be present in the relevant post code area. In paragraphs 3.70 and 3.71, Ofcom refers to a market share of between 30% and 80%, the IIG considers this range to be far too wide to give stakeholders an insight to whether the locations identified through this measure are reasonable. In fact, if the VM share was at the upper end of this range, then that could have

[14] BEREC (2018) *Public Consultation BEREC Report on Access to physical infrastructure in the context of market analyses* p. 18

a significant impact on how markets are defined and where BT is considered to have SMP. If the wide range is due to the issues Ofcom has identified in the BCMR consultation with Virgin Media's service share data, then that should be made clear.

10.1.3 With regards to the unit used for determining geographic markets, the IIG agrees that postcodes are a useful unit to use, but it is our view that, as referred to by Ofcom in paragraph 3.61 and elsewhere, many competitive providers will deploy larger multi-service networks and will benefit substantially from being able to access a single infrastructure across a town or city. The IIG, therefore, favours the use of larger geographic units than individual postcodes when measuring the presence of competitive PIs to define relevant geographic PI markets.

10.1.4 Ofcom aggregates individual postcodes into larger geographic markets, but this still results in HNRs being defined as subsets of towns and cities and thus could result in a patchwork of PI remedies being available, rather than contiguous and ubiquitous PI remedies that enable full network deployment by competitive operators.

10.1.5 At paragraph 3.71(b), Ofcom states that access seekers will have little or no choice in areas where Virgin Media is not present, but that BT would face competition from Virgin Media, where it is present. In reality, however, Virgin Media does not represent competition to BT at the PI level nor even at the dark fibre level. It is therefore questionable whether, at the PI level, the presence of Virgin Media's PI signifies a difference in the competitive conditions in those geographies.

10.1.6 The IIG is also conscious that PI is used for several (currently) separate downstream markets – i.e. the Business connectivity market, the wholesale local access market and the wholesale central access market. Therefore, identifying different geographic markets based on competitive PI being present serving either the leased lines market or the broadband market, appears questionable. The IIG encourages Ofcom to consider whether competitive PI must be present to serve both leased lines and broadband markets, before a separate relevant geographic market should be defined for PI.

10.1.7 As with the CI Access and CI Inter Exchange markets, the IIG view is that even though the presence of two other operators in an exchange area will create competitive conditions that are sufficiently different to where there is one other operator, this does not necessarily mean that an exchange where there are three operators is not subject to SMP. An SMP analysis still needs to be conducted using the normal economic tests.

11 PIMR 3-criteria test

11.1.1 As the PI market is not included in the European Commission's (the Commission's) recommendation on relevant product and service markets, Ofcom needs to consider whether it qualifies as a market susceptible to ex-ante regulation, by applying the Commission's 3 criteria test, determining whether 1) the market is subject to high and non-transitory barriers to market entry; 2) the market is not tending towards effective competition; and 3) that competition law would be insufficient to address any competition issues arising. The answer to all three questions must be 'yes'.

11.1.2 The IIG agrees with Ofcom that the PI market is susceptible to ex-ante regulation, and we explain our position below:

11.1.3 With regards to high and non-transitory barrier to market entry, it is our view that, although IIG members and other competitive providers have historically built PI to connect both broadband and leased lines customers, the conditions for such investment was significantly impacted by the 2016 BCMR LLCC for leased lines connections.

11.1.4 As recognised by Ofcom in its Strategic Policy Statement in July 2018, and in the WLA Statement in March 2018, the economics of deploying new networks to serve the broadband market only are unlikely to be viable for competitive operators so it is necessary to service the leased lines market as well as the broadband market, or the investment is unlikely to be financeable. With the damage to investment conditions in the leased lines market from the 2016 BCMR LLCC[15], the positive contribution to the network deployment economics from the leased lines market were reduced substantially and it is now the view of the IIG that, without access to regulated duct and pole access, the investment case is extremely difficult and thus represents a high and non-transitory barrier to market entry.

11.1.5 BEREC appears to hold a similar view that there are high barriers to entry in the PI market. In its report of access to physical infrastructure[16], BEREC states that having to recreate the ubiquitous physical infrastructure of the incumbent's network is "an important barrier to entry" (page 3).

11.1.6 With regards to whether the market is tending towards effective competition, the IIG refers to its response above relating to the existence of high and non-transitory barriers to competition. The significant economic barrier to market entry means that the PI market is definitely not tending towards effective competition.

11.1.7 BEREC refers to the similarity between the SMP assessment and the second criterion of the three criteria test and that the set of indicators used to determine these two points may be similar[17]. As we note below in Section 12, Ofcom has convincingly shown that BT holds a position of SMP across this market and that its position is not under significant threat. This same analysis could be used to show that the market is not trending towards effective competition.

11.1.8 As for the third criteria – whether competition law is insufficient to address any competition issues arising – the IIG is of the firm view that competition law would be entirely ineffective in the case of a competitive provider seeking and being denied access to BT's PI. Access to regulated PI through ex-ante regulation will enable competition, whereas competition law would simply punish abuse of a dominant position. Competition law does not embrace the competition-enabling role of ex-ante regulation, which is why ex-ante regulation is critical to the development of competition in network-based industries, including electronic communications.

12 PIMR SMP analysis

12.1.1 Ofcom finds that BT has SMP in all the defined relevant product and geographic markets.

12.1.2 Ofcom's SMP analysis places significant weight on the ubiquity and contiguity of BT's PI, as opposed to the PI owned and controlled by other providers, including Virgin Media. The IIG agrees with Ofcom in this respect. Whilst it is feasible to combine the use of more than one PI to

[15] And the charge control applied in the WLA market in March 2018.
[16] Op cit. footnote 14
[17] ibid page 31

deploy electronic communications networks, it is preferable and saves both time and costs if a single PI can be used.

12.1.3 Reliance on a patchwork of different PIs would add considerable costs and time to network deployment and could also impact negatively on network reliability and the operator's ability to offer competitive service level agreements to end customers.

12.2 BT's position in relevant downstream markets

12.2.1 The IIG considers that Ofcom's analysis of the potential competitive constraints on BT in the different relevant markets is thorough and persuasive. Ofcom's initial focus on the SMP analysis and conclusions in downstream markets, clearly shows that BT is dominant in those markets and the IIG agrees that the root cause of that dominance lies in BT's control and ownership of the only ubiquitous PI network in the UK.

BT's position in the downstream WLA market

12.2.2 The IIG agrees that, as set out clearly in the 2018 WLA Statement, BT has SMP in the WLA market across the UK.

12.2.3 The IIG does not consider that there are likely to be significant adverse effects in the WLA market if BT is found to have SMP in the national (excluding Hull) PI market that serves the downstream WLA market.

BT's position in the downstream BC market

12.2.4 As set out earlier in this document, the IIG agrees broadly with Ofcom's SMP analysis in the 2018 BCMR consultation document. Below we provide our views on the potential impact of BT having SMP in the PI market that serves the downstream national (excluding Hull) transmission market.

BT's position in the downstream national transmission market

12.2.5 Whilst Ofcom has found that BT does not hold SMP in this market, with the exception of connections to BT-only and BT+1 exchanges, the majority of the investment in long distance transmission networks were made more than 10 years ago, when the retail and wholesale price levels for such connections were substantially higher than they are now. The economics of making substantial investments in new national transmission networks today are fundamentally different and the IIG therefore agrees that it is correct that Ofcom's conclusion on the PI market definition and the PI SMP finding includes this market.

12.2.6 With regards to the potential effect on existing investments in the national transmission market by competitive providers (including IIG members), it is our view that, in most cases, operators have had substantial time to amortise those investment and that, on balance, such operators will benefit more from the availability of PIA to enable them to expand their networks to reach new locations than they might suffer from the potential impact of PIA on routes where they have existing infrastructure. On national transmission routes, it is also not unusual for competitive providers to enter into duct-sharing arrangements, so PIA is in effect already in that market (although to a much lesser degree and with much lower benefits that would be PIA on BT's ubiquitous network).

12.2.7 The IIG members also consider that the fact that BT has made no move to offer duct access in this market is a clear indicator that it does not feel the competitive need to do so. This is despite some other operators doing so on their (albeit much smaller) networks.

BT's position in the downstream dark fibre market

12.2.8 There is an emerging market for dark fibre connections in the UK. BT is not, at present, active in that market and the dark fibre market is unlikely to place a competitive constraint on BT in the PI market. In fact, it is likely that the consequence of finding that BT has SMP in the PI market will be rapid growth in the commercial dark fibre market, this has been experienced in other countries where IIG members are active, including in France where unrestricted duct and pole access has been available for a long time.

12.3 BT's position in the PI market itself

12.3.1 With regards to BT's position in the PI market itself, the IIG finds that Ofcom clearly demonstrates that other operators that control PI networks, including Virgin Media which is the 2nd largest PI network in the UK and BT's greatest PI rival, simply do not impose a competitive constraint on BT, even if they were to offer access to their PI.

12.3.2 Even in the CLA, Ofcom's evidence demonstrates clearly that BT holds a position of dominance with respect to not only PI to serve the broadband market (for which very limited competitive PI exists in the CLA) but also for serving the leased lines market. In the leased lines market BT's PI is directly connected to virtually every single premise, which represents significant cost savings for BT relative to competing operators, as well as reducing the time to serve the customer site (which is shown in the 2018 BCMR consultation to be an important factor for customers when selecting leased lines suppliers[18]).

12.3.3 BEREC expects that single rather than joint SMP would be found in this market. However, it does acknowledge that joint SMP could be found in some areas. The IIG expects that joint SMP is unlikely to be found and assumes that Ofcom thinks the same as it has made no mention of a joint SMP finding.

12.3.4 The IIG's view is that BT is the only firm likely to have SMP for two reasons. First, BT is the only company that has physical infrastructure throughout the United Kingdom (outside the Hull area) and, as Ofcom itself has indicated, it is this ubiquity that results in BT's SMP. Secondly, as mentioned above, indirect constraints are likely to be very weak in this market, in which case it is unlikely that any other firm that may impose an indirect constraint is either in the same relevant market or able to extent sufficient competitive pressure to prevent BT having SMP.

12.4 Absence of countervailing buying power

12.4.1 As discussed in other parts of this response, the ubiquity of BT's PI network means that there are no effective substitutes for operators building new electronic communications networks. Given the absence of viable alternatives for operators, those operators are by definition not in a position to negotiate attractive terms for the access to BT's PI network. In fact, BT is refusing access to its network, except for where mandated by regulation. And, as will be discussed later

[18] See para 4.61 of the BCMR V1.

in this response, BT is making all efforts to make the regulated PI remedy as unattractive as possible.

12.4.2 The IIG therefore agrees strongly with Ofcom's conclusion that operators wishing to purchase access to BT's PI network do not have any countervailing buyer power at all.

12.5 Competition concerns arising from BT's SMP in the PI market

12.5.1 Whilst the IIG considers Ofcom's concise assessment of the competition concerns arising from BT's SMP in the PI market to be accurate and correct, we would like to further emphasize the critical impact of BT's competitive advantages due to its access to the ubiquitous PI network.

12.5.2 The IIG members all invest significantly in new state-of-the-art full-fibre networks to serve a wide range of customer needs, whether through broadband connections or point-to-point connections. It is our experience that, where BT feels the pressure of competition emerging, it uses its lower cost base and shorter commission times (due to existing connections) to pre-empt competition and to deter further investment from operators such at the IIG members.

12.5.3 For operators such as the IIG members, who build new electronic communications networks, rather than reselling BT's network and services, PI access is critical. It is clear from our experience that (in the absence of regulation) BT would not offer access to its PI, on any terms.

13 PIMR Remedies

13.1 General Remedies

Ability of the ATI to address the PI competition concerns identified

13.1.1 The IIG agrees with Ofcom assessment of the ATI's relevance and ability to address the competition concerns discussed above.

13.1.2 The ATI may be a useful tool for a one-off access request, but it does not provide for the transparency and certainty required to underpin major network investment. The deployment of new electronic communications networks is complex and requires detailed planning, predictability and certainty. This is witnessed by the inability of IIG members to deploy new networks using the duct and pole access (DPA) remedy at short notice. Build schedules and the booking of constructing crews and procurement of materials are carefully planned so that, even if material improvements were made to the DPA remedy, it would not be possible for the IIG member to immediately benefit from that. More likely than not, an improved DPA remedy would not be used to a significant extent by IIG members until new deployments can be planned that incorporate the use of it.

13.1.3 The ATI also does not prevent anticompetitive and discriminatory behaviour by the party providing the ATI access. As we will discuss in some detail later in this response, the imposition of clear and unambiguous non-discrimination rules as well as clear prohibition of anti-competitive behaviour (including but not limited to pricing) is critical to the safeguarding of investment incentives for new all-fibre electronic communications networks in the UK.

Requirement to provide network access on reasonable request and for operators to request new forms of access

13.1.4 Although Ofcom also proposes a specific remedy to offer DPA, the IIG agrees that this general remedy is also required. This is primarily because of the rapidly changing nature of electronic communications networks and services, as well of the equally changing nature of what customers expect from electronic communications service providers.

13.1.5 Ofcom identified in its competition concerns the advantage for BT with regards to innovation in both networks and services. A very relevant example of that advantage has been BT's ability to hold back the UK relative to other developed economies with respect to the deployment of full-fibre networks for the provision of broadband network and services.

13.1.6 It is not possible at this time to predict whether a different form of access to that specified under the DPA remedy will be required in order to enable operators in the UK to innovate and meet customer needs and expectations. The only way to ensure that Ofcom does not put the UK electronic communications sector into a time-lock controlled by BT is to ensure that there is a general obligation on BT to offer access and to develop new forms of access in response to reasonable requests to do so.

Requirement to not unduly discriminate

13.1.7 Ofcom proposes that the non-discrimination obligations in the PI market should mirror those already imposed in the WLA statement for the restricted DPA remedy.

13.1.8 Some IIG members have participated actively and invested considerably in the process to develop the new Reference Offer for the DPA remedy (the PIA Reference Offer) and it had been our experience in that process that the non-discrimination provisions contained in the WLA Statement have been largely ignored or given lip-service by BT/Openreach[19]. It is therefore our strongly held view that stronger non-discrimination provisions are required. We set out below some examples and reasons for our position.

13.1.9 The WLA Statement contains a number of clear statements from Ofcom that The WLA concludes that it would not be practicable to impose strict Equivalence of Input (EOI) on BT for the DPA remedy[20], but states that it expects BT to implement EOI wherever possible and to ensure that users of PIA are not disadvantaged vis-à-vis how BT's downstream businesses and Openreach itself can use BT's ducts and poles.

13.1.10 In particular, we refer to the following extracts from V3 of the WLA:

"3.43 Even though we will not be applying EOI, any new processes or systems used in the deployment of ultrafast products will be expected to be equivalent with PIA, unless differences can be justified by Openreach

3.44 equivalence will be required, unless it can be otherwise justified

[19] When discussing the PIA products and processes, we will refer to BT and Openreach collectively as BT.
[20] For the rest of this response we refer to the DPA remedy as the PIA product.

3.45 Although this falls short of the strict equivalence of EOI, we have decided that in order to ensure a level playing field in downstream markets, this non-discrimination requirement should be as close to EOI as possible.

3.46 we will interpret the no undue discrimination SMP condition in relation to PIA as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of duct access, with discrimination permitted only in cases where BT demonstrates that a difference in respect of a specific process step or sub-product is justified.

3.47 Where Openreach can justify any processes or systems used by PIA users as being different from those used by Openreach, the condition would still require these to be broadly equivalent. This means that any difference must not put PIA users at a disadvantage, particularly in terms of extra cost, time or uncertainty, compared to the processes Openreach follows internally

3.51 Applying the no undue discrimination obligation to PIA will mean that when BT establishes new processes or platforms that contribute to the supply and consumption of duct access, these should be designed and implemented from the outset such that they are equivalent. We envisage that new platforms and/or processes used by BT would not differ from those used by other telecoms providers, other than in the most exceptional circumstances."

13.1.11 It is our view that it is clearly both Ofcom's explicit intent and the spirit of the WLA that the PIA RO should be developed to ensure that competitive operators using PIA are not disadvantaged against BT's own use of its physical infrastructure.

13.1.12 That is, however, in sharp contrast to BT's position in RO negotiations (as witnessed by the OTA's and Ofcom's representatives), during which BT has repeatedly stated that as it does not use PIA, direct comparison is not relevant and that 'BT will not productise its own use of its own physical infrastructure'. BT has been completely unwilling to acknowledge implicitly or explicitly in the RO (or in the process to develop the terms in the RO) that the PIA terms should reflect the way in which BT itself uses its physical infrastructure. A standard reply to requests for explicit statements of the PIA terms being no worse that the terms for BT itself, has been that BT is subject to a general non-discrimination obligation which is separate from the PIA and that such provisions should not be enshrined in the contract.

13.1.13 Examples of where we believe that BT's own use of its physical infrastructure differs substantially from the terms insisted upon by BT in the RO are:

Ability to connect customers during a network deployment

13.1.14 The PIA explicit prohibits competitive operators from connecting customers until the full deployment of an NoI (Notice of Intent) order. This means that competitive operators cannot start getting revenue streams at an earlier stage.

13.1.15 Competitive operators have offered to BT that they are happy to start paying for the use of the PIA services already built (i.e. part of an NoI order), as it is not the competitive operators' intention to generate revenues from use of PIA products that they are not paying for.

13.1.16 BT has refused this categorically throughout and is now saying that it cannot be accommodated by the systems it has designed, so will need to be reviewed post-launch. It is extremely unlikely that BT imposes such limitations on its own business. This restriction is

likely to cause competitive operators to submit a larger number of smaller NoI orders, but that has the consequence of 'chopping up' the deployment with respect to the Network Adjustment fund (NAF). This despite it being Ofcom's clear intent that competitive operators deploying large access networks should be able to offset areas with smaller numbers of NAs against areas with larger numbers of NAs within the NAF.

Linking NoI Orders for the purposes of calculating the NAF available to the competitive operator

13.1.17 The fact that competitive operators cannot start connecting customers until the full NoI deployment is completed, combined with a rule imposed by BT that deployments must be completed within six months (with two possible 3-months extensions, if justified) means that competitive operators are forced to either make smaller NoI orders or to cut off an NoI order before it is completed and include the uncompleted sections in a subsequent NoI order (this can be caused by lengthy wayleaves and rights of way proceedings, which is exacerbated by BT's unwillingness to provide wayleave information to its PIA customers). This then results in smaller NoI orders and therefore in 'chopping up' the NAF and depriving competitive operators of the benefits Ofcom had intended for competitive operators deploying large access networks.

13.1.18 That problem could be overcome by BT accepting a competitive operator's request to link NoI orders for the purpose of calculating the NAF, but BT has consistently refused this throughout the negotiation and is now stating that it cannot be accommodated in the systems it has designed.

13.1.19 BT is not subject to any of these processes or restrictions and can plan its deployment flexibly. Whilst BT does not itself use the NAF directly, the reduction of the utility of the NAF for competitive operators will give BT a competitive advantage as it is allowed to recover that expected NA costs through regulated charges, but in reality competitive operators will either be making some of those NAs at their own costs or paying BT for doing them as the NAF will not cover the NA costs in some areas and exceed the costs of NAs in other areas.

Compliance with Engineering Principles and other requirements of the RO

13.1.20 The RO includes a large number of references to the competitive operators' obligations to comply with BT technical and operational parameters as well as health and safety rules, but, with the exception of a small number of instances (which primarily relate to health and safety), BT has no contractual obligations to comply with those same parameters. competitive operators are subject to SLAs and SLGs in the RO for compliance with the various criteria, but none such apply to BT.

13.1.21 BT's position has been that the provisions are there to protect BT's network from competitive operators performing work that is not to acceptable standards, but competitive operators with experience in using the current PIA product frequently state that they have plenty of evidence that they find the BT network in a condition that could not be a result of compliance with the same criteria. Even BT's work to overcome NAs is not covered by those contractual requirements

13.1.22 Whilst we understand that it may not be feasible to impose a retroactive obligation for BT to comply with the Engineering Principles, we do believe that any contractual obligation on CPs to

comply with them in future should also apply to BT – in particular to work undertaken by BT to perform Network Adjustments.

13.1.23 The above examples are only a few and the most high-profile manifestations of BT's unwillingness to comply with Ofcom's non-discrimination provisions in the WLA Statement. Some of the issues highlighted above have recently been brought to the attention of Ofcom and the OTA and it seems that some progress may be being made to resolve them, although we are yet to see actual specific action and therefore remain cautious as to whether the resolutions that will be proposed will truly implement Ofcom's requirements or simply represent a small move in the well-known and well-document standard process of incumbents in 'walking slowly backwards'.

Non-discrimination provisions for the PI market

13.1.24 The IIG believes that Ofcom needs to seize the opportunity of clarifying its non-discrimination requirements in the PI Statement, following the conclusion of this consultation process.

13.1.25 The IIG members understand that the short implementation process proposed for the unrestricted PIA product does not allow for much work to implement changes to the product, we also believe that the PI decision could impose an obligation to improve the PIA product over a period of time following the initial removal of the usage restrictions. If a 9-month period were allowed for the review of the PIA Reference Offer from the perspective of non-discrimination (with a stronger emphasis by Ofcom that at least Equivalence of Outcome (EoO) needs to be achieved unless BT can actively demonstrate that this is not feasible), then substantial improvements could be achieved, which would make the PIA product more fit-for-purpose for scale deployment by operators in competition with BT, rather than only by BT itself.

13.1.26 In the longer term, the IIG believes that it is critical for Ofcom to take an active position on non-discrimination requirements for the DPA remedy, and we encourage Ofcom to request suggestions from operators in the forthcoming 'all-access' market review and in the next PI market review, both of which we understand are under preparation and will be implemented by April 2021.

Transparency and KPIs

13.1.27 The IIG believes that Key Performance Indicators (KPIs), can play an important role in monitoring compliance with non-discrimination requirements, but has concerns that they should not be overly relied upon. The primary reason for this position is that KPIs need to be very granular and specific and very clearly defined, in order to give true and direct information about potential discriminatory behaviour. If a KPI, for example, covers all clearance of duct blockage, then it is unlikely to provide sufficiently specific information to show discrimination, simply because the different types of blockages (and therefore the many different options available for clearing those blockages) take different periods and time to repair. It could, for example, be that BT sometimes used a longer and more complex way to clear blockages identified by other operators than those identified by BT itself. That is extremely difficult to identify through KPIs unless they are very granular and specific.

13.1.28 The other reason to hesitate with regards of the efficacy of KPIs is that they are a little like using competition law instead of ex-ante regulation: one only finds out about the transgression some

time after it has taken place and by then the damage may already be done and in may some instances be irreparable.

13.1.29 The IIG supports the development of granular, specific and clearly defined KPIs, with direct consequences for non-compliance. KPIs should, however, only be used where the use of service level agreements (SLAs) and Service level Guarantees (SLGs) is not feasible. We address later in this response the concerns we have with regards to the SLAs and GLSs currently proposed by BT for the PIA Reference Offer.

Requirement to publish a Reference Offer including SLAs and SLGs

13.1.30 The IIG agrees that it is necessary and appropriate to impose the obligation to negotiate and publish a PIA Reference Offer and that the PIA Reference Offer should include SLAs and SLGs.

13.1.31 The experience of IIG members in the current PIA Reference Offer negotiation process (including establishing SLAs and SLGs) has, as described above, been neither positive nor productive. It is the view of the IIG that Ofcom needs to review how this process is conducted (as we are aware that it is a generic process applied across a wide range of remedies applied by Ofcom), to ensure that less time is wasted with blatant non-compliant posturing by BT.

13.1.32 We understand that Ofcom needs to be 'neutral' in its observation role during Reference Offer negotiations, but it should be possible to intercept where positions and proposals are made which are clearly in contradiction to both letter and spirit of the relevant Ofcom decision. This could potentially be done via the OTA, or directly by Ofcom stating facts and referring to specific parts of the relevant decision. It is our view that the significant deficiencies in the anticipated PIA Reference offer, which is due for publication on April 1 2019, could have been substantially prevented if the process had been managed differently.

13.1.33 With regards to SLAs and SLGs, the WLA Statement states in V3, paragraph 6.355 that BT shall provide:

"Service Level Commitments and Service Level Guarantees in relation to the timescales for completion by BT of any works necessary to relieve congested Physical Infrastructure (including the repair of existing faulty infrastructure and the construction of new physical infrastructure) other than a congested Pole."

13.1.34 BT has chosen to interpret this as SLAs and SLGs applying only to NAs. This is despite it being undisputed that some other services that are not NAs cannot be performed by the competitive operators themselves, meaning that competitive operators are dependent on BT for those services.

13.1.35 Further, the SLAs and SLGs offered by BT for NAs relate only to BT processing the NA orders, not to the actual performing the NAs themselves (despite the WLA wording stating "*completion by BT of any necessary works….".* The actual performance of NAs by BT will be given individual customer completion dates (CCDs) by BT, on a case-by case basis, and, whilst there is an SLG applicable to performance against that CCD, there is no guidance or maximum time for the time BT can allow to perform the NAs.

13.1.36 Further, the value of the SLGs proposed by BT for non-compliance with the SLAs are of a magnitude that in no way achieves either of the two objectives often quoted as the rationale for

imposing SLGs: 1) compensation to the party that did not receive the contracted service on time (compensation of costs incurred and business lost), and 2) incentivising the provider of the contracted service to deliver it on time. The amount proposed by BT is so insignificant as to be meaningless for both BT and competitive operators.

13.1.37 In short, BT has made an extreme interpretation of Ofcom's requirement for the application of SLAs and SLGs to PIA services in under the WLA and made the WLA provision all but meaningless.

Requirements to notify charges, terms and conditions; technical information; Regulatory Financial Reporting; Accounting separation; Cost accounting; and Quality of service requirements

13.1.38 The IIG agrees with Ofcom's rationale and proposals on the above subjects. Later in this response we offer further comments in the area of Financial regulatory reporting in response to the separate consultation on that subject.

Implementation timeframe

13.1.39 The IIG notes that Ofcom proposes a 1-month implementation timeframe, after the publication of the PIMR Statement. We support Ofcom in this regard, but suggest that perhaps a phased introduction would be more practicable.

13.1.40 We suggest that an initial 1-month implementation time is set for BT to remove any obvious references to usage restrictions in the PIA Reference Offer (which will have been published on April 1 2019), and that for a fast process to assess additional changes required to other parts of the Reference Offer be initiated immediately to make it truly unrestricted and more suitable for scale deployment of any kind of new electronic communications network.

14 PIMR Specific remedies

14.1 Unrestricted PIA access obligation

14.1.1 The IIG welcomes Ofcom's proposal to impose an unrestricted DPA remedy across the entire PI SMP market. As investors in all-fibre electronic communications networks, we consider this remedy essential to enable us (and others) to invest in the UK. As set out in our response to the BCMR earlier in this response document, the impact of the LLCC in the 2016 BCMR has been that our level of investment has been substantially reduced. That effect is further illustrated by the significant reduction in dig distances Ofcom observed in the current BCMR process.

14.1.2 The IIG agrees that the current 'mixed use' and geographic restrictions in the DPA remedy resulting from the 2018 WLA Statement have meant that the resulting PIA product is much less useful for operators of all types of networks, and that the removal of those restrictions will have the likely effect of accelerating the deployment of new electronic communications networks in the UK.

14.1.3 The inability of competitive providers to benefit from the same economies of scope (and scale) as BT gives BT a substantial competitive advantage through resulting lower unit costs, and the ability of BT to use existing ducts when competitive providers need to dig, gives BT both a cost and a timing advantage. When combined with the effect of the 2016 LLCC and the price

reductions in the 2017 WLA Statement, the usage and geographic DPA restrictions result in an environment that is hostile to deployment of new networks to serve customers with new all-fibre-based and innovative services, leaving the UK as a poorly served nation, for all types of users.

Dark Fibre where PIA is not feasible

14.1.4 Ofcom proposes that the DPA remedy should not at this time include an obligation to provide DF where PIA is not viable. The IIG agrees with this position and also agrees that the number of situations where it is not efficient or feasible to use PIA and where there are spare fibres available are likely to be few and far between.

14.1.5 The DPA remedy is there to assist network operators that build their own fibre networks, by reducing the civils costs. If it were to also include a DF services, where the PIA is not feasible (instead of the operator having to build its own PI for those sections where PIA is not feasible) then the remedy would start supporting downstream competition rather than the development of competing electronic communications networks. The IIG considers that this could be counter-productive.

14.1.6 The unrestricted PIA product will have two years to settle in and for operators to gain experience from using it. If there is evidence that the PIA remedy is unavailable in so many parts of the country/sections of network that it cannot have the desired effect of accelerating the roll-out of competing full-fibre networks, then that evidence can be considered in the next PIMR process.

Impact of PIA on downstream markets

14.1.7 Section 5 and Annex 9 of the PIMR address he potential impact of the proposed PIA remedy on downstream markets. The IIG agrees with Ofcom's analyses and conclusions in these sections, we set out our thoughts below:

14.1.8 As set out earlier in this response document[21] in the BCMR response section, the IIG considers that the dynamic benefits from additional infrastructure competition will be substantial and would outweigh the short-term consumer benefits from a more aggressive LLCC. Ofcom is right to recognise the longer-term benefits, even if they arise after the expiry of this exceptionally short market review period.

14.1.9 The IIG further agrees with Ofcom's view that the increase in infrastructure competition will increase BT's incentives to innovate and invest in fibre-rich or all-fibre networks. The impact of Ofcom's previous policy (of focusing on maximising short-term consumer benefits by driving BT efficiency improvements and encouraging competing providers to use the BT infrastructure), is what has left the UK at the very bottom of international league tables for full-fibre network deployments. It is clear that it requires a different approach to spur BT on to invest and innovate for the benefit of the entire UK population and economy rather than maximising short term returns for its shareholders.

14.1.10 With regards to the potential for inefficient network duplication enabled by PIA, it is our view that the new modern ring-based networks for leased lines customers offer substantial additional

[21] See section 7.4 of the BCMR response above.

benefits and value to customers when compared to BT's existing leased lines provision. This position is supported by the research conducted by CityFibre in the Summer of 2018[22].

14.1.11 As for inefficient investment in new broadband networks, the deployment of all-fibre networks that PIA would enable would provide a step-change in both quality and bandwidth available to broadband customers and we have no doubt that the overlay of new fibre networks onto existing legacy copper networks will result in an overall materially positive economic effect.

The potential impact of PIA on competitive markets

14.1.12 As discussed earlier in this response document, it is the view of the IIG that the net impact of unrestricted PIA will be positive, including in markets where the IIG members already have substantial investment.

14.1.13 We note in Annex 9 that Openreach has previously expressed concern that an unrestricted PIA product would negatively impact on already competitive markets, but we disagree with that. The increased competition on routes and locations (such as the national transmission market and in the CLA) are, in our view as investors in new and existing networks, significantly outweighed by the benefits of being able to meet customer needs in locations and to timescales that are today not viable for any operator other than BT.

14.1.14 Whilst the IIG agrees that unrestricted PIA will likely have the consequence of reducing BT's market share in downstream (wholesale and retail) markets, we believe that Ofcom's approach to cost recovery ensures that BT will be able to cover its efficiently incurred costs.

14.1.15 It is worth noting that it is understood that had Ofcom continued its previous approach of driving efficiency improvements for BT, then a further aggressive LLCC would likely have been imposed. That means that, at this point in time, BT has room to lose economies of scale and still cover its costs. The IIG considers that Ofcom has acted correctly in not driving BT's pricing down further and have in fact argued that a CPI-0% LLCC would be more appropriate that CPI-CPI.

14.1.16 For the past many years, competing providers have competed against a BT that has economies of scale that could never be achieved by them (only one provider can have more than 50% market share and the resulting economies of scale), the introduction of PIA may present the opportunity of levelling that particular playing field a little, with the possibility of an acceleration in customer migration from BT to competing providers.

Potential longer term impact of unrestricted PIA

14.1.17 The IIG notes that Ofcom has limited its impact analysis to the period covered by this market review (two years), which is technically correct. We do, however, believe that it is also necessary to consider the likely longer-term impacts of the unrestricted PIA remedy and below we set out our observations.

14.1.18 As mentioned above in our discussion of the potential impact of unrestricted PIA on competitive markets, it is our view that PIA, if implemented in a manner that makes it truly suitable for scale deployment, should result in an acceleration of market loss by BT.

[22] See footnote 19.

14.1.19 However, at the same time, we are aware that BT's current price levels are above its fully allocated efficiently incurred costs.

14.1.20 BT is also undertaking modernisation of its network and it is well-known and accepted that all-fibre networks are more efficient to operate and it should therefore be expected that BT's operational costs will reduce as it phases out its copper access network and replaces it with fibre.

14.1.21 We believe that the combination of BT having headroom in its current price levels and the potential for substantially reducing its operating costs is likely to result in there being sufficient room for BT to absorb the impact of a reduced market share, whilst still being able to cover its efficiently incurred costs. We do however urge caution to Ofcom with regards the proposed CPI-CPI charge control and instead propose a CPI-0% charge control.

14.2 Network adjustments

14.2.1 The PIMR suggests that the conditions for qualifying and performing Network Adjustments (NAs) should be the same as that set out in the WLA Statement in March 2018. In order to comment on that the IIG once again refers to the experience of its members in the current ongoing PIA Reference Offer negotiation process to implement, amongst other aspects of the PIA product, the NA framework from the WLA Statement.

14.2.2 The implementation of the NA rules has proven among the most complex and contentious aspects of the PI Reference Offer negotiations. We have no doubt that the NA framework was developed by Ofcom with the intention of ensuring that only economically efficient NAs would be performed and that the NA fund (NAF) was created to assist users of the PIA product in making the cost of deployment more predictable, removing the uncertainty of potentially significant costs to make the BT PI usable.

14.2.3 However, the fact that there is a semi-subjective set of criteria for the qualification of what constitutes an NA and what does not, has given BT the opportunity to impose slow and unpredictable processes around that qualification process. Competitive providers face a minimum timeframe of 5.5 working days before they can know whether BT agrees that the work required to make good its PI qualifies as an NA, and can therefore be performed against the NAF. This applies even if the operator wants to perform the NA itself.

14.2.4 The IIG understands that it is not feasible to invent a new NA framework for the PIMR, given that the first version will only go live immediately after the target date for the PIMR to be implemented. We are also aware of work ongoing to improve on the NA terms and conditions in the PIA Reference Offer and we work together with the OTA, Ofcom and the industry to make that happen.

14.2.5 We do, however, believe that a simpler process would be better and should be considered. The NAF suffers from it being an average amount per kilometre, despite the causes for NAs to be performed (the condition of BT's PI), varying substantially across different parts of the country and even between different parts of a town or city. The application of the qualification process means that, by definition, the fund will not cover all the NAs it was intended to cover. This is because operators will not claim the full amount in areas will better PI conditions and when they get to areas with worse than average Pi conditions, the operator itself has to cover the excess costs. This, we believe leads to an over-recovery by BT, as the average NAF has been allowed for across the forecast amount of PIA usage, but below average will be claimed as set out above.

14.2.6 Whilst we understand that Ofcom seeks to ensure that only necessary and economically efficient NAs are performed, we believe a much simpler scheme of making the NAF available to operators for whatever improvements are required would remove most of the contention in the NA processes and would also result in operators benefiting for the full amounts allocated for network improvements.

14.2.7 Problems that have arisen due to the way NAs are qualified and the way the NAF is applied include the following[23]:

- The 5.5 working days lead time for an operator to know whether BT agrees that the work required qualifies as an NA (which involves BT sending people out to inspect potentially all NAs requested by operators).
- BT's incentive to impose limitations on the size of PIA orders (as the NAF is applied per order) so that operators are less likely to be able to benefit from the full NAF by averaging its across lager areas where the frequency and nature of NAs differ.
- BT's unwillingness/inability to link PIA orders to extend the NAF across several orders in the same area.

14.2.8 The IIG urges Ofcom to start working with stakeholders to develop a simpler and less contentious NA framework for implementation with the next PIMR in 2021 or before.

14.3 Ancillary services

14.3.1 Network work/improvements and assistance required by operator from Openreach that do not qualify as NAs are classed as 'Ancillary Services'. These include the opening of locked lids and the pulling of ducts/cables in sensitive areas as well as joint surveys and a plethora of other activities. Ofcom proposes the same regulations around Ancillary Services in this PIMR as it determined in the WLA Statement.

14.3.2 As explained above in the section headed SLAs and SLGs, BT has interpreted the WLA Statement (wrongly in our view) to mean that, whilst it has an obligation to provide Ancillary Services, it does not need to offer SLAs and SLGs for those activities and it has been blankly refusing to do so. In recent weeks, BT has gone as far as saying that it will consider whether some Ancillary Services soul be subject to SLAs and SLGs as part of 'phase 2' of the PIA Reference offer negotiations, but it is not at all clear whether (and if so, when) that will happen.

14.3.3 In the meantime, operators are dependent on BT for a number of these activities and have no clarity at all about how long it will take BT to perform the various activities included in the Ancillary Services, nor any comfort that BT will be subject to SLAs and SLGs when performing these, often critical, activities.

14.3.4 The IIG believes that Ofcom should use the opportunity afforded by the PIMR to clarify BT's obligations with regards to Ancillary services, making it clear that Ancillary Services should be subject to SLAs and SLGs, with a focus on implementing SLAs and SLGs for services where the operators have a clear dependency on BT.

[23] We are aware that work is ongoing to help overcome some of these issues, but the solutions proposed for April 2019 will be sub-optimal at best.

14.4 Wayleaves

14.4.1 BT considers that any wayleave information it may hold that is relevant to a PIA order, does not form part of the PIA product. Consequently, BT provides no wayleave information as part of the standard PIA product.

14.4.2 BT does offer a service, charged by the hour and uncapped, to search its archives for relevant wayleave information. If an operator uses this service, BT only provides information about whether a wayleave exists and details of the wayleave grantor(s), nothing more.

14.4.3 The IIG believes that all available relevant wayleave information should form part of the standard PIA product, including information about the start and termination dates of the agreement. This information will assist the operator in assessing the suitability of the particular PIA product. We fully support Ofcom introducing this change to the DPA remedy at this time.

15 RFR

15.1.1 In parallel with the BCMR and PIMR consultations, Ofcom has issued a consultation on regulatory reporting requirements across all regulated markets (WLA, BCM, narrowband, PIM and WBA). The main purpose is to align BT's published RFS and associated AFIs (additional financial information, which is not published) with the outcomes of the market reviews.

15.2 Level of reporting

15.2.1 The IIG notes that Ofcom proposes to require cost reporting at the level of BCMR baskets or sub-baskets, but not at individual service level. This is a restriction compared to previous RFS, where a breakdown by product speed was available (for example, 100M, 1G, 10G), and by EAD or EADLA. Whilst we recognise the benefits of keeping the information as simple as possible, IIG members have in the past depended on information broken down by product in order to make meaningful analysis of Ofcom's proposed remedies and of BT price changes.

15.2.2 We believe that in order to regulate the market effectively, it is essential that Ofcom receives well-informed responses from all market participants, based on in-depth analysis. While accepting that certain data, as in the past, must remain confidential, undue asymmetry in access to data on the incumbent's position, whereby the information available to competing operators is significantly less than that available to BT and Ofcom, is likely to materially affect the quality and depth of responses to Ofcom consultations, and hence the quality of decisions made.

15.2.3 We therefore propose that Ofcom should continue to require BT to publish information at the product level for the BCMR baskets. As a minimum, this information should include internal and external revenues, volumes, average prices and FAC for EAD, EADLA, mainlink, EBD and WDM services broken down by speed and rental/connection.

15.2.4 Ofcom proposes that information on the PIM will be reported in the RFS as a single national market, whereas four geographic markets are specified in the PIMR. Ofcom's justification for this aggregation is that take-up is expected to be low in the 2-year review period. The IIG believes that reporting for the PIM should be done in a consistent way to the BCMR, i.e. by separate geographic market, as this information is likely to be useful to competitive Ofcom as well as other operators in the analysis of BT's costs by market.

15.2.5 Ofcom proposes to require service level reporting for internal and external PIA rentals from 2020/21. This was not required in the 2018 WLA statement, but it will enhance the information around non-discrimination; it is a welcome addition which we intend to support. The IIG also notes that the requirement for BT to publish information on internal usage of PIA implies that Openreach will be a consumer of PIA. This seems to be inconsistent with the PIMR, where it is suggested that Openreach will not consume PIA; .

15.3 Network components

15.3.1 If the new dark fibre remedy is implemented then the IIG supports Ofcom's proposal to introduce two new dark fibre network components to the RFS (connection and rental).

15.3.2 Ofcom proposes to revoke the requirement set in the 2018 WLA statement to publish ten network components for PIA services, and to replace them with a single component. Under the

proposal, this single component would be reported from 2019/20 onwards (compared to 2020/21 as specified in in the WLA statement).

15.3.3 The IIG accepts that reporting on the ten components may not be possible until 2020/21, but strongly believes that the full and disaggregated information should be published from that date; the information is important in allowing competitive operators to understand BT's costs. In particular, the aggregated information would not allow a distinction to be made between underground and overhead costs, nor between access and long-distance costs. Given that BT will be required to provide the more detailed information to Ofcom in the AFIs, we do not believe it would impose an undue burden on BT to make this information available as a part of the published RFS.

16 Annex 1 – Telecoms buyers behaviour study report

Executive summary

GOS conducted a study on behalf of CityFibre into the likelihood of buyers of telecommunications services in businesses considering an using a competitor to BT that builds its own network, rather than buying access to the Openreach network with a particular focus on whether and to what level such a competitor would need to offer a discount compared to BT for the equivalent service and the extent to which the telecommunications buyers value additional features that can only be offered by competitors that build their own networks, as opposed to using the Openreach network.

The study was not designed to quantify the value of the features included in the survey, but to ascertain whether telecommunications buyers attach significant value to them and to attempt to get a general idea of how much these features were valued by the buyers.

The study was designed by GOS Consulting and the interviews conducted by the professional fieldwork company Teamsearch Limited. The subjects interviewed were selected from an anonymous sample purchased by Teamsearch in accordance with criteria specified by GOS Consulting. A total of 62 companies were included in the survey.

The survey results are summarised below:

- At 20% discount against BT, approximately 50% of buyers would seriously consider using the competitive provider when buying the identical product;
- Telecommunications buyers do value the features that can be offered by competitors building their own competing networks;
- At between 10 and 15% discount against BT, approximately 50% of buyers would seriously consider using the competitive provider, if that buyer's top five additional features were included by the competitive provider.
- The benefit most frequently quoted by buyers in association with the features included in the survey was efficiency improvements.

GOS Consulting's conclusions from the survey are summarised below:

- Telecommunications buyers require a substantial discount against BT's prices before they are willing to seriously consider using an alternative provide that uses its own network;
- Telecommunications buyers value the features offered by competitors building their own networks substantially. The survey suggests that they value these features at approximately 8% of their telecommunications spend (the difference between 20% and 12% discount required to seriously consider the competitive provider with and without the additional features included). This suggests that those features may be valued as highly as up to £160m per annum.
- In addition to the direct benefits to companies using telecommunications services, the features offered by infrastructure competitors were considered by buyers to be likely to increase efficiency of their organisations. We have not quantified any benefits to the overall UK economy of efficiency improvements, but even a 0.1% improvement in the country's efficiency would lead to an increase in GDP of around £2.0 billion.

2. Survey scope and design

CityFibre commissioned GOS Consulting to conduct a survey of telecommunications buyer behaviour in respect of the likelihood of telecommunications buyers to consider an alternative provider that uses its own network and which the buyer has not used before.

We were asked to specifically investigate whether:

- If supplying an identical product to that supplied by BT, the buyers require a discount on the BT price before they will be very likely to consider an alternative supplier, and, if so, how big that discount would need to be.

- Whether, and if so how much, buyers value the non-price benefits (features) that can be offered by alternative providers that do not use BT's network

To produce answers to those questions, we designed a 6-question interview template and engaged a professional fieldwork company to conduct the interviews. The fieldwork company selected was Teamsearch. Teamsearch also procured the 60 interview targets in response to criteria specified by GOS consulting.

The interview responses are set out in Annex B to this report.

The results of the survey cover 4 areas:

1) The level of discount required against BT's price by telecommunications buyers before they would be very likely to consider using an alternative provider that uses its own network and which the buyer has not used before;

2) How telecommunications buyers rank a list of features which it is considered providers using their own networks (as opposed to competing with BT through wholesale access to BT's network) are able to offer and which BT cannot offer;

3) Which benefits the telecommunications buyers associate with the features presented; and

4) The level of discount required against BT's price by telecommunications buyers to be very likely to consider using an alternative provider that uses its own network and which the buyer has not used before and which offers each individual respondent's top five most valuable features that BT does not offer.

3. Main findings

3.1 The sample

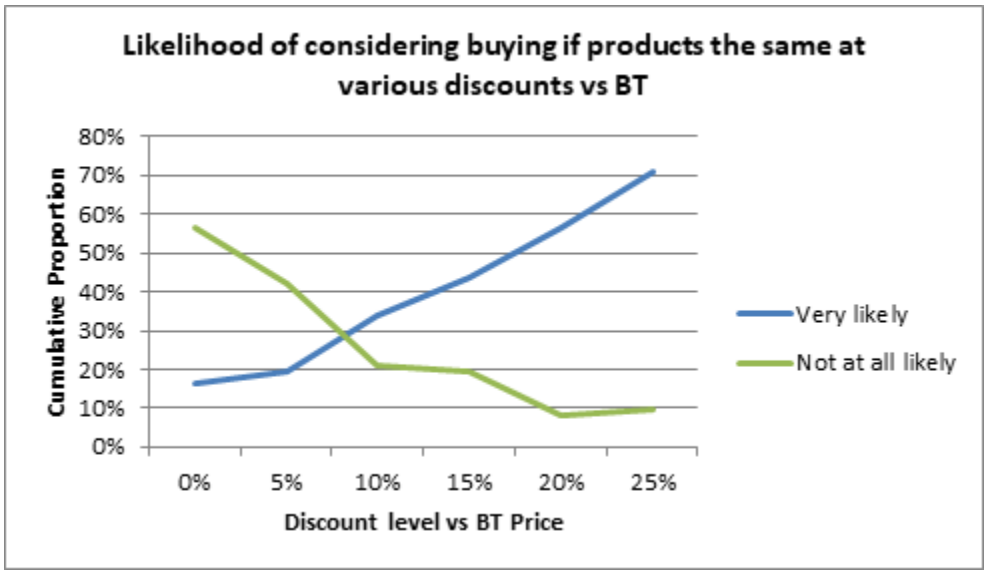
A total of 62 randomly selected organisations were contacted for all questions. However, for the question about the level of discount required when additional features were included (Question 6), we were only able to use 37 of the answers supplied. For that question, some interviewees provided answers that were illogical, for example they required a higher level of discount as the number of features increased and so these were discarded. For the remainder of the questions we have used the entire set of responses as there were no quality issues identified in responses to those questions.

All interviewees were either directly involved in, or in a position to strongly influence, buying decisions with regard to telecommunications.

Respondent organisations all employed more than 100 staff and were involved in a variety of sectors, including technology, manufacturing, finance and the public sector. Due to the size of the sample, results have not been disaggregated by industry sector.

3.2 Likelihood to consider an alternative provider with same product as BT

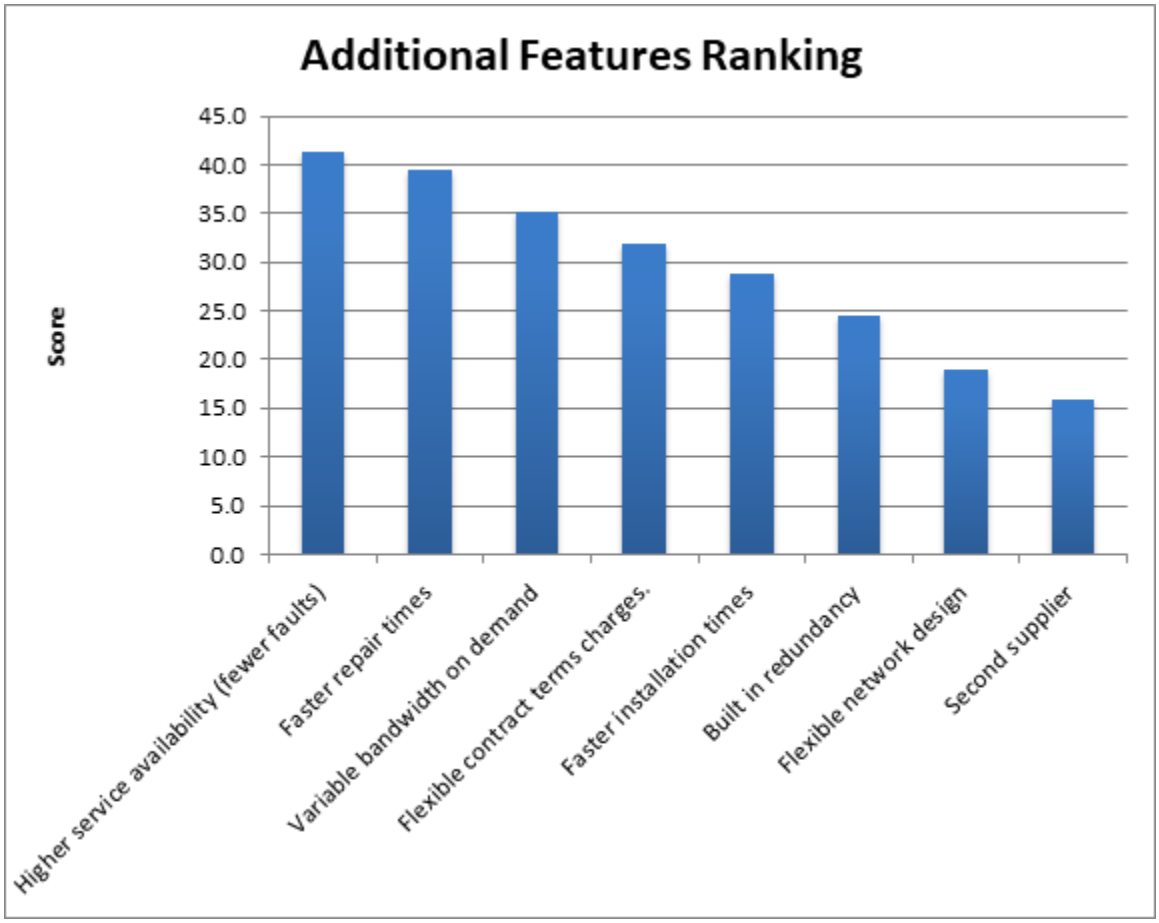
The survey found that buyers require a considerable level of discount against BT's price before they will be very likely to consider an alternative provider that uses its own network and which the buyer has not used before (an alternative provider). In fact, a 20% discount against BT's pricing would be required before more than 50% of the buyers said that they would be very likely to consider an alternative provider and 10% remain not at all likely to consider an alternative provider at a discount greater than 25%. This is illustrated in the graph below:



N = 62

3.3 Assessment of features offered by CityFibre and other alternative operators that build their own networks

Interviewees were asked to rank a list of features according to their importance and attractiveness to the buyer's business. The results are presented below:



N = 62

The top two ranked features concerned availability and repair, reflecting the importance of business communications services to the respondent companies. The ability to vary bandwidth on demand, a unique feature of full fibre network, and to have more flexible contract terms were also ranked highly.

We also asked interviewees to tell us which business benefits they associated with the 5 features they had each ranked highest. The table below shows the top three benefits associated with each feature:

Feature	Primary Benefit	Secondary Benefit	Tertiary Benefit
Higher service availability	Improved productivity	Improved communication with customers	Improved communications with suppliers
Faster repair times	Improved productivity	Improved communication with customers	Improved communications with suppliers
Variable bandwidth on demand	Improved communication with customers	Reduced business risk	Improved productivity
Flexible contract terms	Improved productivity	Improved communication with suppliers	Improved communications with customers
Faster Installation times	Cost savings	Reduced business risk	Improved productivity
Built in redundancy	Improved productivity	Improved communications with customers	Cost savings
Flexible network design	Reduced business risk	Improved communication with customers	Improved communications with suppliers
Second supplier	Reduced business risk	Improved productivity	Improved communication with customers

N=62

Improved Productivity was listed as the primary benefit for four of the eight features and either second or third in three others. By contrast, cost savings was listed as a top three benefit for just two features, which might imply that respondents were more concerned with increasing productivity, and so indirectly reducing costs, than with making direct costs savings.

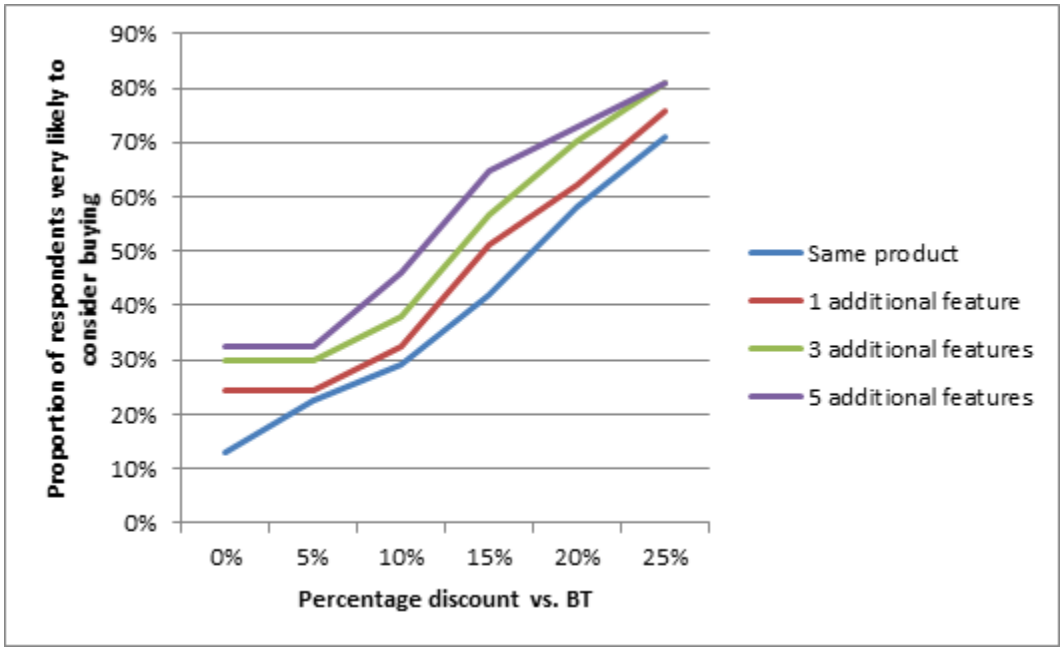
Having ranked the features, interviewees were then asked how much discount against BT's price for the standard BT product they would require in order to be very likely to consider using an alternative provider, if the alternative provider included their 5 highest ranked features, with each feature added cumulatively. The table below shows the results for this question.

	Number of additional features				
Percentage discount	1	2	3	4	5
0%	24%	24%	30%	30%	32%
5%	24%	22%	30%	30%	32%
10%	32%	30%	38%	35%	46%
15%	51%	49%	57%	59%	65%
20%	62%	65%	70%	68%	73%
25%	76%	76%	81%	81%	81%

N = 37

As additional features are added, there is a general increase in the proportion of respondents who would be very likely to consider buying from the alternative supplier, as would be expected. When compared with the base product, i.e. when the competitor's and BT's products have the same features, there is a significant increase in the proportion of buyers who are very likely to consider buying, as illustrated in the chart below, which compares the proportion very likely to consider buying if all features are the same with the proportion when one, three and five features are added to the competitor's product. There is a minimum of ten percentage points between the numbers of respondents saying they would be very likely to consider buying from the competitor and each discount level. Nearly one quarter of respondents would not need any discount before they would be very likely to consider buying from the competitor if it offered just one additional feature and nearly one third if it offered all five.

Further, whereas a 20% discount is needed for at least 50% of the sample to be very likely consider buying if the product is the same, this reduces to a 15% discount if one additional feature is added.



N = 37

NB This graph is calculated using only the data provided by the respondents who gave consistent answers to the question concerning discounts required against BT's price when features were added by the competitor.

4. Results analysis

The reason for conducting this survey was to generate inputs to Ofcom's current Business Connectivity Market Review (BCMR) analyses, which are expected to be set out in a BCMR consultation document due for release in September 2018.

In the last BCMR process (completed in 2016), Ofcom imposed remedies with the objective of maximising static benefits in the form of price reductions, based on the premise that BT's fibre infrastructure was sufficient to serve the BCM and that any incremental dynamic non-price benefits resulting from competition from independent network operators would be insignificant when compared to the benefits from the price reductions delivered in the remedies imposed.

CityFibre argued that competitive providers need to offer a significant price discount against BT's price, in order to overcome the switching costs and the perceived risk of using a relatively unknown network provider. CityFibre stated that, in its experience, it would need to offer around 20% discount against BT's regulated price. Ofcom disagreed with this and said it would expect that new operators with new and better networks should be able to sell their services at a premium compared to BT's regulated prices.

In this section we present our analysis of the survey results in the context of Ofcom's 2016 BCMR conclusions and in the context of the forthcoming 2019 BCMR decisions, due to take effect in April 2019.

4.1 Switching costs and the discount required from new competitors to BT

Our survey has revealed that, if the competitor offers the same product as BT (which it would do if it used the same wholesale input provided by Openreach) then the median respondent would need a 20% discount against the BT price before it would consider switching. We can therefore estimate that the switching costs faced by respondent, including the risk premium of using a new supplier, equated to around 20% of the contract value.

Even when including the customers' highest ranked features, are competitors expected to offer 10-15% discount against BT's base price.

We consider that the survey results demonstrate clearly that competitors to BT have to offer a substantial discount to BT, before even 50% of the customer base will "seriously consider" switching. The number that then do switch is likely to be substantially lower than the 50%.

4.2 The value of additional features to telecoms buyers

When then considering how much telecoms buyers value the features offered by competitors to BT, that build their own competing networks rather than rely on access to BT's infrastructure, we consider the study also provides clear evidence that such features are valued highly.

As mentioned above, the median respondent would need a 20% discount against the BT price if the product is the same, however, when the competitor is able to offer just one additional feature that cannot be offered on the BT/Openreach network, the median respondent would be very likely to consider buying from the competitor at a discount of 15% and when all five are offered the median respondent would be very likely to consider buying at a discount of between 10% and 15% .

We did not collect data from respondents about their annual spend on telecommunications and so use that to estimate a financial value of the features and benefits offered by infrastructure competitors. However, we can surmise that the additional features are valued by respondents at around 5% - 10% of their contract value, i.e. the difference between the median discount needed for respondents to be very likely to consider buying from the competitor. If this were extrapolated to the BCM, it would equate to approx. £160m per annum. Given the relatively small sample size, we do not propose that our findings are representative of the entire customer base in the BCM. The estimated dynamic benefits should therefore very much be seen as an upper limit. The purpose of the study was not to provide firm quantitative estimates of the dynamic benefits of infrastructure competition, but to indicate whether they are likely to be significant. We consider that the study shows the dynamic benefits to be significant.

In addition to the direct dynamic benefits estimated above, however, the list of benefits the respondents associated with the additional features were primarily related to improved productivity and communications with suppliers and customers. It is our view that these second order benefits could generate quite significant economic gains for users of business connectivity products. For example, if the improvement in productivity was just 0.1% across the whole economy, this would lead to an increase in GDP of around £2.0 billion, approximately the value of business connectivity market.

Conclusion

It is our view that the survey presents clear evidence that consumers of electronic communications services in the UK BCM attach significant value to the features offered where there is infrastructure competition – that is, benefits that are very unlikely to be available through competition that relies on wholesale access to BT's existing infrastructure.

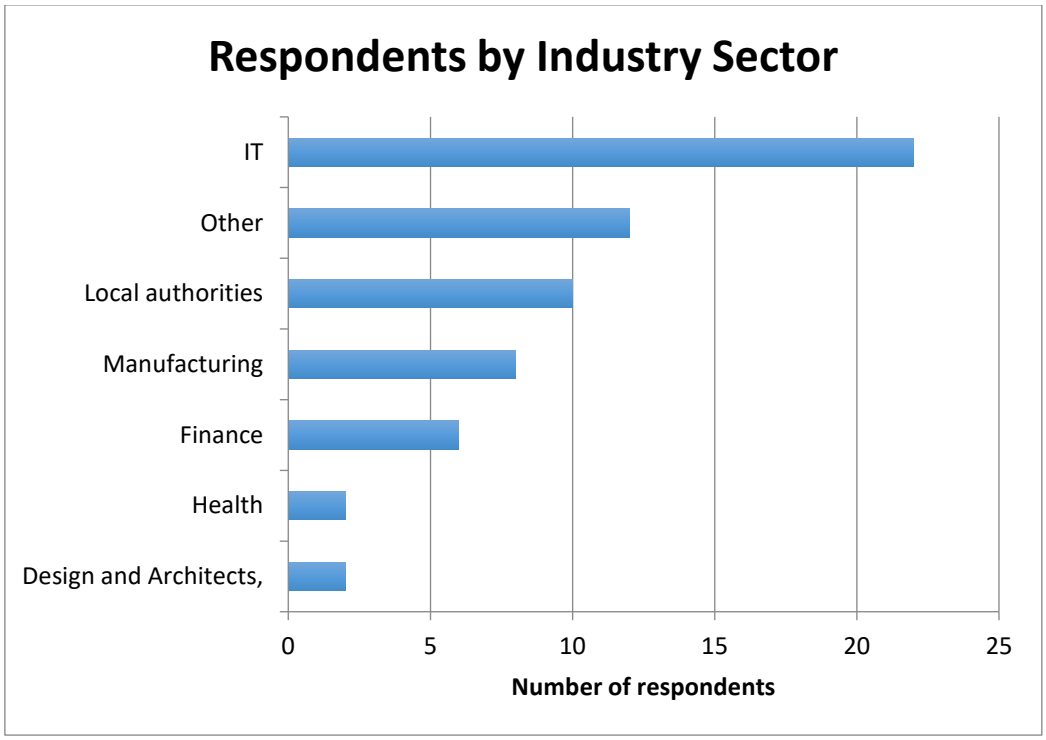
Further, we consider that the features offered by infrastructure competitors are likely to result in efficiency improvements, which could have significant value to the overall UK economy.

Whilst not offering quantitative estimates of the total benefits likely to result from infrastructure competition in the BCM, we are confident that this study provides a firm indication that such benefits would be significant and, in light of the one-off £700m static benefits resulting from the current BCMR

charge control, that the dynamic benefits foregone during that period and in future years are likely to significantly exceed the 2016 BCMR static benefits.

Annex 1 - Respondents by industry sector

The sample was generated by the fieldwork agency from their own lists. It consisted of 62 randomly selected respondents in the UK with a minimum of 100 employees, which was the only qualifying criterion. The business sectors included in the survey are shown in the figure below.



N = 62

The vast majority of respondents (85%) were directly involved in purchasing decisions concerning telecoms. All other respondents had some influence over the decision but were not directly involved.

Respondents were asked to state how important telecoms is to their business on a scale of 1 to 10, where 1 was the highest level of importance. 50% rated telecoms as a 1 and a total of 76% rated telecoms as either 1, 2 or 3.

Most respondents (74%) said that they bought telecoms services from companies that did not use the Openreach network. However, we did not explore any further as to which companies they used. It is possible therefore that respondents bought from companies that they did not know used the Openreach network or were thinking about mobile services or, of course, that they do indeed purchase from independent fixed line suppliers such as CityFibre.

Annex 2

Business or consumer?	Business	
RDD or lifestyle/named contacts?	Named	
Exclude 084/087 numbers	Yes (unless required numbers not feasible without them)	
Total records required	1,000	
all records to be:	IT/Telecoms decision makers in organisations with 100+ employees	
Quota breakdown required:	Please see grid to right	
Fields required to be in the sample delivered to us:	name, address, phone number, company name, job title, number of employees, sector	
Single site (incl. head office if multi brand/site companies only (B2B only) -	Yes	
Exclude franchises	Yes	
Single contact per company/household only	Yes	
Actual data or modelled data	Actual	Please tell us if any data is modelled
Single or multiple use?	Single use only please	
TPS excluded	No - please include TPS and flag	

Category	Records required
Local authorities	200
Finance	100
IT	100
Telecoms	100
Design and Architects,	100
Gaming	100
Manufacturing	100
Health	100
Pharma, and Automotive	100
	1000

Annex 3 - Questionnaire

SIC

- Design and Architects,
- Finance
- Gaming

- Health
- IT
- Local authorities
- Manufacturing
- Pharma, and Automotive
- Telecoms
- Other

S1. Are you directly involved in the selection of telecommunication provider(s) for your organisation?
(3 maximum responses)

- Yes, I am directly involved
- No, I am not directly involved, but I do influence the selection
- I am not involved in selecting or influencing the selection

Q2. How important are telecommunications to your organisation on a scale of 1 to 10, with 1 being the highest?

- 1 - Most important
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 - Least important

Q2A. Does your organisation currently buy services from BT or another provider that uses BT's network?

- Yes
- No

Q2B. And does it currently buy services from any other telecoms provider that does not use BT's network?

- ☐ Yes
- ☐ No

Q3. Imagine that a new provider of fibre to the premises, that builds its own network and does not rely on BT or Openreach's network, is available to your organisation:a. The provider already has network and customers elsewhere in the country and, is well funded, but you do not have any direct experience of the provider's services.b. The provider can offer your organisation exactly the same set of services as BT or Openreach.c. We would like to understand whether you would consider purchasing from that provider and, if so, whether a price discount would be necessary for you to move away from using BT/Openreach. At the following levels of price discount relative to BT would you be fairly likely or very likely to consider using this company as a supplier?

	Very likely	Fairly likely	Would not consider
0%	☐	☐	☐
5%	☐	☐	☐
7.50%	☐	☐	☐
10%	☐	☐	☐
15%	☐	☐	☐
20%	☐	☐	☐
25%	☐	☐	☐

Q4. The following is a list of potential features that the new provider could offer you that may not be available from BT. Please rank these features from 1 – 8, where 1 is the feature that is most valuable to your company.
(9 maximum responses)

- ☐ Variable bandwidth on demand This would be possible if you were to buy dark fibre and you determine the bandwidth of the connection through your own terminal equipment without needing to purchase a new connectivity product.
- ☐ Higher service availability (fewer faults) Higher quality of service of the circuits provided, with service guarantees.
- ☐ Faster repair times Commitment by supplier to repair any faults within a shorter period than offered by BT or Openreach
- ☐ Faster installation times Commitment by supplier to install the connection service in a shorter period than offered by BT or Openreach
- ☐ Flexible contract terms Willingness to negotiate customised contract terms rather than expect you to accept standard terms. This could for example mean a longer term contract or higher up-front payment in return for low on-going charges.
- ☐ Flexible network design Designing the network access to suit your requirements rather than provide what is available in the area. This could include the location of the site connection, how the traffic is routed, and the latency of the connection.

- Second supplier The ability to have a second connection to your side from a separate network, avoiding single point of failure.
- Built in redundancy Network designed to protect against single point of failure through, for example, ring architecture.
- None of the above

Q4rank

Variable bandwidth on demand. This would be possible if you were to buy dark fibre and you determine the bandwidth of the connection through your own terminal equipment without needing to purchase a new connectivity product. Higher service availability (fewer faults) Higher quality of service of the circuits provided, with service guarantees. Faster repair times Commitment by supplier to repair any faults within a shorter period than offered by BT or Openreach Faster installation times Commitment by supplier to install the connection service in a shorter period than offered by BT or Openreach Flexible contract terms Willingness to negotiate customised contract terms rather than expect you to accept standard terms. This could for example mean a longer term contract or higher up-front payment in return for low on-going charges. Flexible network design Designing the network access to suit your requirements rather than provide what is available in the area. This could include the location of the site connection, how the traffic is routed, and the latency of the connection. Second supplier The ability to have a second connection to your side from a separate network, avoiding single point of failure. Built in redundancy Network designed to protect against single point of failure through, for example, ring architecture. None of the above

1								
2								
3								
4								
5								
6								
7								
8								

Q5. I would also like to understand what value you think each of the five features you ranked highest could add to your organisation, if any. This could be in the form of cost savings in your organisation, improved productivity in your organisation, improved communications with customers and/or suppliers, reduced business risks, or additional revenue opportunities. I will read out the features in the order you have ranked them and ask whether you consider they add value in the pre-specified areas or perhaps you want to mention a type of value that we have not included

LQ5

(8 maximum responses)

- Variable bandwidth on demand
- Higher service availability (fewer faults)
- Faster repair times
- Faster installation times
- Flexible contract terms
- Flexible network design
- Second supplier
- Built in redundancy

LQ5

	Improved productivity	Improved communications with customers	Improved communications with suppliers	Reduced business risk	Cost savings	Additional revenue opportunities	Other (please specify)	None of the above (DO NOT READ OUT)	Q5OTH. Other (LQ5)
Variable bandwidth on demand									
Higher service availability (fewer faults)									
Faster repair times									
Faster installation times									
Flexible contract terms									
Flexible network design									
Second supplier									
Built in redundancy									

Q6.

I would now like to ask you how the addition of each of your five top ranked features by the new supplier would affect your willingness to consider buying from that company. Assuming that the base price for the package remains the same, how much discount would you require to consider another supplier with the addition of:!!RT("Q4:"+Q4[ci(1)-4])!!!!RT("Q4:"+Q4[ci(1)-3])!!!!RT("Q4:"+Q4[ci(1)-2])!!!!RT("Q4:"+Q4[ci(1)-1])!!!!RT("Q4:"+Q4[ci(1)])!!

- 0%
- 2.50%
- 5%
- 7.50%

- 10%
- 15%
- 20%
- 25%
- Would not consider another supplier

Q6 CHECK. You have said that compared to the same base BT/Openreach price and product, if the supplier adds your next favourite feature, that would require a higher discount as well as that additional feature. Is that correct?

- Yes
- No

Q6_1WHY. Could you tell me why that is?

Q6. I would now like to ask you how the addition of each of your five top ranked features by the new supplier would affect your willingness to consider buying from that company. Assuming that the base price for the package remains the same, how much discount would you require to consider another supplier with the addition of:!!RT("Q4:"+Q4[ci(1)-4])!!!!RT("Q4:"+Q4[ci(1)-3])!!!!RT("Q4:"+Q4[ci(1)-2])!!!!RT("Q4:"+Q4[ci(1)-1])!!!!RT("Q4:"+Q4[ci(1)])!!

- 0%
- 2.50%
- 5%
- 7.50%
- 10%
- 15%
- 20%
- 25%
- Would not consider another supplier

Q6 CHECK. You have said that compared to the same base BT/Openreach price and product, if the supplier adds your next favourite feature, that would require a higher discount as well as that additional feature. Is that correct?

- Yes
- No

Q6_1WHY. Could you tell me why that is?

Q6. I would now like to ask you how the addition of each of your five top ranked features by the new supplier would affect your willingness to consider buying from that company. Assuming that the base price for the package remains the same, how much discount would you require to consider another supplier with the addition of:!!RT("Q4:"+Q4[ci(1)-4])!!!!RT("Q4:"+Q4[ci(1)-3])!!!!RT("Q4:"+Q4[ci(1)-2])!!!!RT("Q4:"+Q4[ci(1)-1])!!!!RT("Q4:"+Q4[ci(1)])!!

- 0%
- 2.50%
- 5%
- 7.50%
- 10%
- 15%
- 20%
- 25%
- Would not consider another supplier

Q6 CHECK. You have said that compared to the same base BT/Openreach price and product, if the supplier adds your next favourite feature, that would require a higher discount as well as that additional feature. Is that correct?

- Yes
- No

Q6_1WHY. Could you tell me why that is?

Q6. I would now like to ask you how the addition of each of your five top ranked features by the new supplier would affect your willingness to consider buying from that company. Assuming that the base price for the package remains the same, how much discount would you require to consider another supplier with the addition of:!!RT("Q4:"+Q4[ci(1)-4])!!!!RT("Q4:"+Q4[ci(1)-3])!!!!RT("Q4:"+Q4[ci(1)-2])!!!!RT("Q4:"+Q4[ci(1)-1])!!!!RT("Q4:"+Q4[ci(1)])!!

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Q6 CHECK. You have said that compared to the same base BT/Openreach price and product, if the supplier adds your next favourite feature, that would require a higher discount as well as that additional feature. Is that correct?

- Yes
- No

Q6_1WHY. Could you tell me why that is?

Q7. Would you like to receive a copy of the report that will be produced incorporating your responses?

- ☐ Yes
- ☐ No