CityFibre

Business Connectivity Market Review

And

Review of BT's Regulatory Financial Reporting

Response submitted by CityFibre Infrastructure Holdings

Non-confidential Version

18th January 2019

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1 Introduction

1.1 About CityFibre

1.1.1 CityFibre is the UK's leading alternative provider of wholesale full fibre network infrastructure. With major fibre infrastructure projects across 51 towns and cities throughout the UK, we provide a portfolio of active and dark fibre services to our customers which include service integrators, enterprise and consumer service providers, local authorities and mobile operators. CityFibre is making significant investments in a number of cities across the UK as we look to rapidly expand the number of homes and businesses which have access to full fibre. CityFibre has recently partnered with Vodafone to bring ultrafast Gigabit-capable full fibre broadband to up to one million UK homes and businesses by 2021 and is targeting five million by 2025. This commitment has been reinforced by a £2.5bn investment programme which identifies towns and cities primed for FTTP expansion to reach nearly every home and business and build is underway. CityFibre is based in London, United Kingdom, and is privately owned by a consortium of Antin Infrastructure Partners and West Street Infrastructure Partners.

2 Executive Summary

2.1.1 CityFibre is pleased to provide this document in response to the following Ofcom's consultations:

(1) The Business Connectivity Market review (BCMR);

(2) The Regulatory Financial Reporting (RFR) Consultation; and

2.1.2 CityFibre welcomes Ofcom's proposals in the BCMR and considers them to be positive, pro-competitive and in the long term interests of consumers.

2.1.3 CityFibre believes that Ofcom's objectives, as stated in the BCMR, to encourage investment in competitive all-fibre networks across the UK, are the right objectives to ensure that the UK can start to catch up with the many countries across the world where full-fibre networks are already widespread or at least in the advanced stages of deployment. Ofcom is familiar with the international statistics and we will not repeat them here, safe to say that we welcome Ofcom's increased emphasis on protecting investment incentives for competitive providers as well as for BT.

2.1.4 CityFibre therefore welcomes the overall proposals set out in the BCMR and in particular Ofcom's focus on creating a stable and transparent regulatory environment that is pro-competitive and that seeks to optimise investment incentives to create effective and sustainable competition.

2.1.5 CityFibre finds that, in the main, Ofcom's analyses and conclusions as set out in the BCMR are correct and will help deliver the necessary environment to speed up fibre deployment in the UK. In particular, we support the following positions:

- That BT retains Significant Market Power (SMP) in the provision of wholesale leased lines across all of the UK (except the CLA and Hull);
- That it is necessary to impose remedies on BT to prevent it from abusing its position of dominance in both the BCM; and

- That it is appropriate to impose a Leased Lines Charge Control (LLCC) in the BCM and that the LLCC should have the purpose of keeping leased lines pricing stable over the period covered by the review;

2.1.6 Despite agreeing with the majority of Ofcom's analyses and proposals, CityFibre does have some concerns with specific aspects of the consultations, these include:

- That Ofcom's choice of parameters to define the high network reach (HNR) market are wrong and that this leads to pre-mature deregulation (removal of the LLCC) in some areas where competition is still not sufficiently established to be able to compete with an unregulated BT;

- That the supply-side conditions for mobile backhaul services create a situation where BT is leveraging its market power downstream from Openreach (at the BT Wholesale level) and foreclosing the market; and

- That Ofcom proposes the introduction of a dark fibre (DF) remedy in the inter-exchange connections (IEC) market at the same time as introducing the DFA remedy and at a price that does not allow sufficient economic space for operators to compete when using the DPA remedy;

2.1.7 CityFibre is a member of the Infrastructure Investors Group (IIG). The IIG has prepared a response to these consultations and CityFibre is in full agreement with that submission.

2.1.8 In the interest of efficiency and avoiding repetition, this response does not repeat the points made in the IIG response (other than to provide a brief summary), but simply refers to the relevant parts of the IIG response as appropriate.

3 BCMR review introduction

3.1.1 CityFibre welcomes Ofcom's approach to this BCMR with is consistent with Ofcom's Strategic Statement issued in July 2018. Whilst previous interventions (notably the 2016 BCMR) focused on improving the terms of regulated access to BT/Openreach infrastructure, this BCMR now has a clear focus on accelerating the rollout of competing infrastructure.

3.1.2 CityFibre finds Ofcom's revised focus timely, given that several operators have announced commitments to make substantial new infrastructure investments.

3.2 CityFibre's evolving strategy and the impact/implications of the BCMR

3.2.1 CityFibre has pursued a consistent strategy since its formation in 2011. That strategy is to deploy full fibre networks in towns and cities outside the London/inner M25 area, these networks being designed to support the point-to-point full fibre connectivity requirements of larger businesses and local authorities, mobile network operators (MNOs) and residential and SME customers.

3.2.2 Our approach is to deploy initial fibre spine networks, the upfront capital costs of which are recovered substantially through initial, anchor tenancy contracts for the supply of point-to-point fibre (i.e. products within the BCM) to one or more large customers. From that initial competitive bridgehead in a town or city, CityFibre then seeks to densify the use of the network by adding further business customers and/or contracts to supply backhaul to MNO macro sites, and in a tertiary phase to then build out a city-wide full fibre network to serve residential consumers and SMEs and (eventually) MNOs' connectivity needs for 5G small cells.

3.2.3 The success of the model therefore rests on the economic conditions for supply of fibre connectivity products that fall within the BCM, as this creates the basis for a viable full fibre deployment serving all of the different business 'verticals' identified above.

3.2.4 To date pursuing this model, we have successfully deployed infrastructure in 51 towns and cities. Our longer term aspiration is to deploy the same business model to up to 120 towns and cities, giving us a total footprint of some 8.5m business and residential properties, just over a quarter of the total UK addressable market for broadband services.

3.2.5 The 2015 BCMR, for reasons explained elsewhere in this submission, has substantially reduced our ability to enter new towns and cities. Another fundamental impediment to expansion has been our inability to penetrate the MNO backhaul market to existing macro sites, despite continuous efforts over the life of the company to do so. The only example of a successful MNO anchor contract to date has been in Kingston-Upon-Hull. Again, there are specific impediments to the opening of the MNO backhaul sub-market which we explore more extensively elsewhere in this response.

3.2.6 In June 2018, CityFibre was acquired by a consortium of investors and in November 2018, we announced that our investors are now prepared to initiate a £2.5bn investment programme to densify our networks (the tertiary phase described above) throughout our existing footprint, and we named an initial 37 towns and cities where this would lead to city-wide full fibre deployments to create a total deployment, by 2024, of just over 5 million homes and businesses. The revised strategy, however, continues to envisage substantial expansion into new towns and cities to extend the eventual footprint of our network to the eventual 8.5 million footprint referred to above but also in recognition that, should Openreach announce plans to build full fibre in some of our existing towns and cities, we may have to enter new towns and cities in order to successfully execute the existing 5 million plan.

3.2.7 Hence, the context of this BCMR is that CityFibre has concrete, funded plans to deliver at least 5 million full fibre connections and to substantially expand its existing network footprint, but both elements of this strategy necessitate a regulatory regime that incentivises the construction of new networks and in particular delivers the right incentives to invest in infrastructure via 'anchor tenancy' agreements to deliver BCM products to businesses, local authorities and MNOs. The potential availability of regulated dark fibre has also caused some confusion and '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

3.2.8 CityFibre is a member of the Infrastructure Investors Group (IIG). The IIG has prepared a response to these consultations and CityFibre is in full agreement with that submission.

3.2.9 In the interest of efficiency and avoiding repetition, this response does not repeat the points made in the IIG response (other than to provide a brief summary), but simply refers to the relevant parts of the IIG response as appropriate.

4 BCMR product and geographic market definitions

4.1.1 CityFibre is a member of the IIG and refers Ofcom to the IIG submission. Our comments in this section are in addition to, and should be read together with, the IIG submission.

4.2 *Mobile backhaul connections*

4.2.1 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. CityFibre agrees with this assessment.

4.2.2 However, CityFibre does not agree with the statement in paragraph 4.5 of Volume 1 of the BCMR, Ofcom states that "although there are some differences between purchasers of mobile backhaul and enterprise customers, in both cases, competition is determined by the proximity of rival networks to the customers site." CityFibre has some specific concerns with BT's apparent contractual behaviour for MBH that makes it difficult for CityFibre and other infrastructure providers to compete for MBH. We have set out these concerns in a confidential annex attached to this response.

4.3 *Defining the HNR market*

4.3.1 CityFibre builds new all fibre networks across the UK, including in some of the cities Ofcom has included in the HNR market. Our market model is to find an anchor tenant that will help finance the initial investment of the metro[1] network [✂].

4.3.2 Ofcom's choice of 65% as the number of customer sites an operator has to be able to reach (within the dig distance) in order to be considered 'present' in that location is a significant departure from Ofcom's previous practice of 90%, which is also used in a number of other countries, including Ireland. One of the few parameters used by Ofcom in the 2016 BCMR, which were not disputed, was in fact the 90% network reach threshold.

4.3.3 We believe that using the 65% threshold results in a significant overstatement of competition in that area. The fact that 35% of customers do not have the choice of three suppliers (and it is entirely feasible that a sizeable proportion of customers may only have access to BT), means that it is not appropriate as the distinction to define a separate geographic market. The conditions within the areas Ofcom have defined as the HNR market will include a significant proportion of customers having access to only BT + 1 competitor and likely also some customers with access only to BT.

4.3.4 CityFibre does not believe that those conditions qualify as homogenous, nor that they differ sufficiently from the conditions in the neighbouring areas to justify the definition of a separate market. If Ofcom were to use the 90% reach threshold, then it is much less likely that there will be any customer with access to BT only and the mix within the specified area would be significantly more homogenous and would be clearly distinct from other areas, where a much smaller portion of customers would have access to BT+2 operators and a much larger proportion would have access to BT only.

4.3.5 It is CityFibre's view that Ofcom needs to either revert to the established 90% reach threshold, in which case it would likely be proportionate to not impose a charge control, or retain the 65% reach threshold, but in that case, it is our view that it is not appropriate for the LLCC to not be applied. It is clear that BT's market share in a market defined using the 65% reach threshold will be substantially higher than in one defined using the 90% threshold. We note that BT's market share is between 50 and 60% in the HNR areas[2] (outside the CLA), which supports Ofcom finding

[1] By this we mean the core network in a town or city from which connections to customer sites are constructed.

[2] See Table A12.15 in Annex 12 to the BCMR.

that BT has SMP in the HNR areas, but we also believe that it a market share at that level does not justify the removal of the LLCC remedy in those areas.

4.3.6 We understand that the SMP assessment is undertaken separately from the definition of geographic markets, but the parameters used to define the geographic market determine whether the geographic market defined is likely to be characterised by effective competition or not. As set out above, it is our view that a geographic market defined using the 65% reach threshold is unlikely to be either sufficient homogeneous in itself to be a relevant market, nor sufficiently different from the surrounding areas to set it clearly apart from those areas.

4.3.7 We explain later in this response our deep concerns that Ofcom has not included considerations of BT's potential to price in an anticompetitive manner in its BCMR analysis.

5 BCMR SMP assessment

5.1.1 The IIG submission provides a comprehensive review of Ofcom's SMP analysis and we refer Ofcom to that review.

6 BCMR remedies

6.1.1 CityFibre agrees with Ofcom's objective of imposing remedies to create as much stability and transparency in the BCM, such as to support investment in competitive all-fibre networks.

6.1.2 We are, however, concerned that Ofcom focuses entirely on regulation at the Openreach level and, in our view, ignoring market failures further downstream which have not been effectively remedies by up-stream regulation of Openreach. A particular example of that is the apparent dominance in the MBH market by BT wholesale. We discuss that in more detail in Annex 1

7 Dark fibre

7.1.1 CityFibre refers Ofcom to the comprehensive analysis included in the IIG response.

7.1.2 CityFibre is not, in principle, opposed to the introduction of a regulated dark fibre (DF) remedy. CityFibre is a provider of dark fibre services and believes the dark fibre market in the UK will grow rapidly in the next five years as users become more sophisticated at both retail and wholesale levels.

7.1.3 CityFibre, however, believes strongly that DF should only be introduced when the most upstream remedy (DPA) has been proven to be ineffective. This contrasts with Ofcom's proposal to introduce DPA and DF simultaneously for the BT-Only IEC market.

7.1.4 CityFibre is also very concerned that BT Openreach will become the provider of DPA, DFA and active CI Inter Exchange circuits in the same market and the same geographic areas. In our view this is contrary to the principles of Functional/Legal Separation and Equivalence of Input. The purpose of separation is to remove the incentives for BT to discriminate against its downstream rivals in favour of its own downstream business. By removing these incentives all operators in downstream markets should be able to compete on a level playing field with BT. For this reason, the most upstream assets were placed in Openreach and Openreach did not sell services in competition with its own customers.

7.1.5 However, by introducing both DPA and DFA in the same geographic markets, both sold by Openreach alongside wholesale active CI circuits, Ofcom has completely reneged on the purpose of Openreach. Clearly, if Openreach is selling DFA or active CI in competition with its own customers, it has the same strong incentives to discriminate against those firms that BT was found to have in the 2005 Telecoms Strategic Review, which led to the creation of Openreach.

7.1.6 Ofcom led the world in creating the functionally separate Openreach: a model that has been followed in countries such Italy, New Zealand, Singapore and Sweden. The effect of this separation in the market was strong and very clear, as firms that were concerned about being harmed by BT began to invest. CityFibre is therefore very concerned to see Ofcom apparently reversing the process and effectively making Openreach a vertically integrated entity providing services at all levels of the value chain in competition with its own customers.

7.1.7 In our view, Ofcom should ensure that Openreach should not become vertically integrated and that it sells products only at the deepest level of the network that is viable in each geographic area. All other downstream products should be sold by a downstream business unit that is not part of Openreach.

7.1.8 We recognise that BT Wholesale does not purchase DPA in the same way as a third party operator would. However, it is fundamental to EOI that all CPs, including BT, buy Openreach services on exactly the same terms etc. as each other. However, to ensure fair competition in downstream markets it is important that at least a virtual sale of DPA takes place between Openreach and downstream business units and that the Openreach/BT costs of providing services imputes the costs of the upstream services necessary to provide the service in question.

7.1.9 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 CityFibre agrees with that position.

7.1.10 It would be consistent with that strategy to introduce DF as a remedy only once it has been ascertained that DPA is insufficient to address the competition problem identified. This would seem an appropriate approach, given that the introduction of DF (particularly with the proposed pricing methodology[3]) would sterilise the market for infrastructure competition on a permanent basis. It is clear that the ability to use the unrestricted DPA remedy will change the economics of operators connecting to BT exchanges to which they have previously not found it economic to connect. The extent of feasible rollout may also be positively affected by other factors such as public interventions to support infrastructure rollout in rural areas.

7.1.11 Simultaneous (or near simultaneous) introduction of DF and DPA remedies at the proposed price levels sends conflicting make/buy signals to operators in the UK. The DF pricing would make it

[3] See below for our analysis of the proposed DF pricing.

very unattractive for operators to build their own fibre connections to the (current) BT-only exchanges[4].

7.1.12 Should operators, nevertheless, build their own connections to some (current) BT-only exchanges, those exchanges would cease to be BT-only exchanges. CityFibre believes Ofcom should make it clear what happens to BT's DF obligation when this happens. We presume that the DF obligation would fall away, thus reinstating investment incentives for operators to use DPA and build their own fibre connections. This is not optimal from the perspective of stable and transparent regulation with the objective of encouraging network investment.

7.1.13 Despite this BCMR covering only a two-year period, CityFibre considers it imperative that Ofcom sets out on a path that is consistent with its strategic statement and which will generate longer-term stability and investor confidence.

7.1.14 The IIG submission also provides comments on the actual definition of the DF remedy including the absence of a distance limitation (which we believe is required) and the unintended consequence of further embedding BT's exchange locations into the design of new fibre networks, rather than encouraging the development of new fibre networks that are designed to optimise efficiency and resiliency, rather than using BT locations as default due to regulatory design. CityFibre supports those comments and asks that Ofcom makes the remedy description as clear and unambiguous as possible (if it is introduced).

7.2 Proposed charge controls for DF services

7.2.1 CityFibre believes that the use of BT's FAC costs to set the initial price for inter-exchange dark fibre, followed by a CPI-CPI control, is not an appropriate approach.

7.2.2 [✂].

Figure 1 [✂].

7.2.3 [✂].

7.2.4 CityFibre 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 PIA to the extent available (by the next PIMR, Ofcom should have much better data on the amount of PIA 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.

8 The LLCC

8.1 Proposed CI basket design

[4] Section [7.3 of the IIG submission] presents a more detailed analysis of why Ofcom's proposed pricing would be a direct deterrent to operators otherwise wishing to use the DPA remedy to connect to additional BT exchanges.

8.1.1 CityFibre understands Ofcom's rationale for choosing the larger basket. Our analyses, as set out below, do however suggest that the scope for BT gaming the control is substantial and that the outcome could be to destabilise prices, rather than to stabilise them as is Ofcom's stated objective.

8.1.2 We do not necessarily believe that Ofcom needs to change the basket design, but do believe strongly that, if Ofcom retains the large basket design, it is necessary to add more safeguards to the LLCC design. Below we discuss a number of options including moving from CPI-CPI to CPI-0%, changing the safeguard sub-cap to CPI+2%, the need for discounts to be cost-justified, and the introduction of price floors or other mechanisms to prevent anticompetitive pricing by BT.

8.2 Proposed CI charge controls

8.2.1 CityFibre warmly welcomes Ofcom's approach to the LLCC in the BCMR. Setting an LLCC formula that has the objective of keeping pricing stable in a period where stability and transparency is paramount to maximise investment in new fibre networks is the right regulatory approach and CityFibre applauds Ofcom for taking this stance in the face of what will undoubtedly be strong calls for further aggressive price reductions form users of BT's infrastructure.

8.2.2 By seeking to set the LLCC to stabilise price levels over the period covered by the control, Ofcom is recognising the substantial economic benefits that will derive from investment in competing networks and the competition on innovation, quality and pricing that will result from that. CityFibre agrees that the medium to long-term dynamic benefits that can be expected from infrastructure competition are likely to significantly outweigh any short-term static benefits from price reductions.

8.2.3 During the summer for 2018 a study was undertaken for CityFibre, into the behaviour of telecoms buyers, with a particular focus on the level of discount competitors using their own networks have to offer and on the value buyers place on the specific features that can only be offered by competitors not using BT's network[5].

8.2.4 Although that study was not designed to quantify the value placed on these features, the report concluded that the direct benefits were likely to be in the region of £160m per annum and that resulting efficiency improvements (due to reduced downtime and other results from using modern ring-based all-fibre networks) could be in the region of £2bn.

8.2.5 The IIG response sets out why a CPI-0% would be more appropriate than Ofcom's current proposal for the CPI-CPI formula. CityFibre supports that analysis.

8.3 CPI+5% safeguard control

8.3.1 In addition to the proposed CPI-CPI control, we note that individual products within the 1Gbit/s and below basket are subject to a CPI+5% sub-cap, and that Ofcom intend that this should limit BT's ability to game the charge control design, as well as limiting the scope for price increases[6]. Ofcom has not presented any analysis to support the level of this 5% cap (why 5% is more

[5] See section 9 and Annex 2 of this document for more details.

[6] See paras 3.53 to 3.54 of V2.

appropriate that 3% or 7%, for example), but states that it is based on a regulatory judgement which balances Ofcom's objectives[7].

8.3.2 In order to assess the extent to which the CPI+5% sub-cap is able to restrict BT's freedom to manipulate prices, CityFibre has modelled some example scenarios. These suggest that, with a 5% sub-cap, BT would have an opportunity to significantly decrease the price of 1Gbit/s ethernet services while still maintaining the basket revenue at CPI-CPI, by increasing the price of lower speed services by CPI + 5%.

8.3.3 For example, if 10Mbit/s and 100Mbit/s services were subject to a 5% price increase in each of the two years of the charge control, then the prices of 1Gbit/s services could be reduced by 39% over the two years, while still maximising the return for BT on services within the basket. The following table shows the results from this model, which is run with an annual inflation assumption of 2.2%. [8]

Table 1: Scenario showing price reduction on all 1G lines with CPI-CPI for basket, CPI+5% for low speed products

	Product	Rental price (£/year, nominal)			Price change over 2 years
		Current price	FY 2019/20	FY 2020/21	
Price increase at CPI+5%	10Mbit/s EAD	1,698	1,820	1,951	15%
	100Mbit/s EAD	1,698	1,820	1,951	15%
Reduction targeted at all 1G lines	1Gbit/s EAD	1,890	1,531	1,147	-39%

If BT were to reduce only the 1Gbit/s service pricing in parts of the country where it faces competition from operators building new competing networks [9], that reduction could be significantly higher. The table below shows the impact if the price reduction were restricted to 70% of BT's 1Gbit/s EAD/LA customers, with the remaining 30% following the CPI-CPI basket average. A price decrease of 56% is possible in this scenario, taking the price to below half of the 100Mbit/s price.

Table 2: Scenario showing price reduction on 70% of 1G lines with CPI-CPI for basket, CPI+5% for low speed products

	Product	Rental price (£/year, nominal)			Price change over 2 years
		Current price	FY 2019/20	FY 2020/21	
Price increase at CPI+5%	10Mbit/s EAD	1,698	1,820	1,951	15%
	100Mbit/s EAD	1,698	1,820	1,951	15%
Reduction targeted at 70% of 1G lines	1Gbit/s EAD	1,890	1,378	828	-56%

One way of reducing BT's scope for such significant price reductions for the 1Gbit/s services would be to apply the CPI-0% control instead of the CPI-CPI control. The table below shows the potential 1Gbit/s price reductions under the CPI-0% control, while maintaining basket revenue:

Table 3: Scenarios showing price reduction on 1G lines with CPI-0% for basket, CPI+5% for low speed products

[7] See para 3.55 of V2.

[8] See Annex 3 for a description of the model. The Excel model is supplied separately.

[9] CityFibre understands that whilst geographic discounts do not count towards the LLCC, permanent changes to prices in some geographic areas would.

	Product	Rental price (£/year, nominal)			Price change over 2 years
		Current price	FY 2019/20	FY 2020/21	
Price increase at CPI+5%	10Mbit/s EAD	1,698	1,820	1,951	15%
	100Mbit/s EAD	1,698	1,820	1,951	15%
Reduction targeted at all 1G lines	1Gbit/s EAD	1,890	1,690	1,468	-22%
Reduction targeted at 70% of 1G lines	1Gbit/s EAD	1,890	1,587	1,251	-34%

Another way of reducing BT's potential to game the LLCC would be to change the CPI+5% safeguard provision to CPI+2. The table below show the impact this would have.

Table 4: Scenarios showing price reduction on 1G lines with CPI-CPI for basket, CPI+2% for low speed products

	Product	Rental price (£/year, nominal)			Price change over 2 years
		Current price	FY 2019/20	FY 2020/21	
Price increase at CPI+2%	10Mbit/s EAD	1,698	1,769	1,844	9%
	100Mbit/s EAD	1,698	1,769	1,844	9%
Reduction targeted at all 1G lines	1Gbit/s EAD	1,890	1,681	1,463	-23%
Reduction targeted at 70% of 1G lines	1Gbit/s EAD	1,890	1,591	1,280	-32%

If combined, the CPI-0% and a CPI+2 safeguard cap would have the following effect:

Table 5: Scenarios showing price reduction on 1G lines with CPI-0% for basket, CPI+2% for low speed products

	Product	Rental price (£/year, nominal)			Price change over 2 years
		Current price	FY 2019/20	FY 2020/21	
Price increase at CPI+2%	10Mbit/s EAD	1,698	1,769	1,844	9%
	100Mbit/s EAD	1,698	1,769	1,844	9%
Reduction targeted at all 1G lines	1Gbit/s EAD	1,890	1,840	1,784	-6%
Reduction targeted at 70% of 1G lines	1Gbit/s EAD	1,890	1,800	1,703	-10%

8.3.4 In this case, the potential for price reductions is considerably reduced, if BT wish to maintain overall basket revenue.

8.3.5 This modelling shows that Ofcom's proposed charge control structure for the ethernet 1G and lower basket, based on CPI-CPI with CPI+5% for individual products, would allow BT considerable freedom to reduce prices of 1Gbit/s products, even on a broad geographical basis covering 70% of lines. While this modelling does not factor in the effects of migration from lower speeds to 1Gbit/s products that would result from such drastic price reductions, and that this would provide some limit to sustainable reductions, it should be noted that BT could choose to narrow the geographical scope of price reductions and target specific areas of competition, thus avoiding revenue losses in less competitive areas.

8.3.6 CityFibre is concerned that, contrary to Ofcom's stated aim of limiting BT's ability to game the charge control design, the proposed LLCC does allow BT very significant freedom to undermine pricing in competitive areas. We believe that Ofcom may wish to consider changing the LLCC design to restrict this freedom (for example, by moving to CPI-0% and/or reducing the sub-cap from CPI+5%); however, it seems clear that the LLCC in itself can never be sufficient to prevent BT from pricing to undermine competitive investment.

9 BCMR remedies to prevent anticompetitive pricing

9.1 The need to prevent anti-competitive pricing by BT

9.1.1 Ofcom proposes no measures to prevent BT from pricing in a manner to deter investment in competitive networks and CityFibre is very concerned that BT will exploit the flexibility offered by the proposed LLCC to do just that.

9.1.2 CityFibre and other competitive providers are investing significant funds in building new all-fibre networks and BT is facing a substantial threat to its dominant position in the fixed telecoms services markets. Whilst Virgin Media has deployed competing networks in many parts of the UK, and gained a substantial market share, BT has been able to retain its dominance with nearly all other competition to BT taking the form of forms of resale of BT's infrastructure – securing BT a substantial wholesale business where it has lost retail market share.

9.1.3 It is CityFibre's belief that BT now has very powerful incentives to deter investment in competitive infrastructure and that it will take all measures necessary to do so.

9.1.4 When explaining its approach to remedies in this BCMR, Ofcom refers to the objective of promoting network-based competition [10], that the long-term benefits of network-based competition will be substantial[11], and that the benefits of stability at current price levels will outweigh any static inefficiencies from over-recovery by BT during this charge control period[12].

9.1.5 It is therefore clear that Ofcom considers that the benefits from refraining from pushing BT's prices down further, through a continuation of the type of LLCC in place at the moment, outweigh short term static efficiencies available through immediate price reductions. It is also clear that the main benefit Ofcom is seeking through this approach is investment in competitive all-fibre networks.

9.1.6 Ofcom's Cost Orientation Review in 2013[13] identified that price floors set above the dominant provider's incremental/LRIC costs can be appropriate if the medium to long term benefits to consumers from the resulting investment and competition can be identified as sufficiently large. Ofcom itself has discussed the substantial benefits it expects from the availability of full fibre networks to residential and SME consumers in the UK. Such benefits are typically measured in £b, significantly higher than the likely costs (almost regardless of how Openreach might price its >100Mbit/s services if left unconstrained).

9.1.7 In its 2013 Cost Orientation review paper, Ofcom discusses the use of price floors to encourage investment. In particular, in paragraph 2.47 Ofcom states:

"We also need to take into account the risks of inefficient entry and competition. For example, if we set an artificially high floor which is above actual costs, we may encourage entry into the wholesale market by competitors with higher costs than the incumbent. In a static analysis, this would be inefficient and undesirable. However, in the longer run, such entry might be desirable as,

[10] See para 10.6 V1.

[11] See para 10.7 V1.

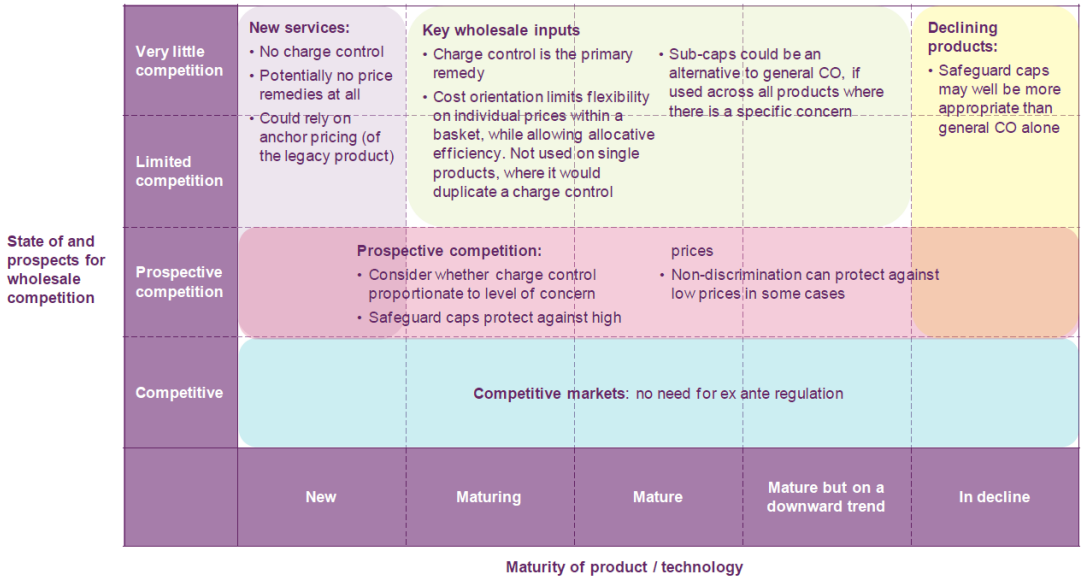
[12] See para 2.13 and 2.14 V2.

[13] https://www.ofcom.org.uk/__data/assets/pdf_file/0018/63261/cost_orientation.pdf

although it could raise costs in the short-run, in the long-run such inefficiencies could be more than offset by the likely dynamic benefits of greater competition." [emphasis added]

9.1.8 Additionally, in Figure 5 of that same document, Ofcom considers how different remedies are likely to be appropriate under different market conditions:

Figure 5 Possible approach to setting remedies in different market conditions



9.1.9 We consider the framework Ofcom developed in the Cost Orientation Review paper to be very helpful, as it appropriately identifies that specific attention needs to be paid to market conditions characterised by prospective competition and where the technologies used are not yet fully mature. (The above table, however, appears to not have been populated fully in line with the preceding analysis in the paper, as it does not consider the application of price floors despite this being specifically addressed in paragraph 2.47 of that same paper as shown above).

9.1.10 The benefits of network-based competition can be substantial, but can be difficult to quantify. In an effort to quantify those benefits, CityFibre commissioned research in to the behaviour of telecoms buyers during the summer of 2018[14].

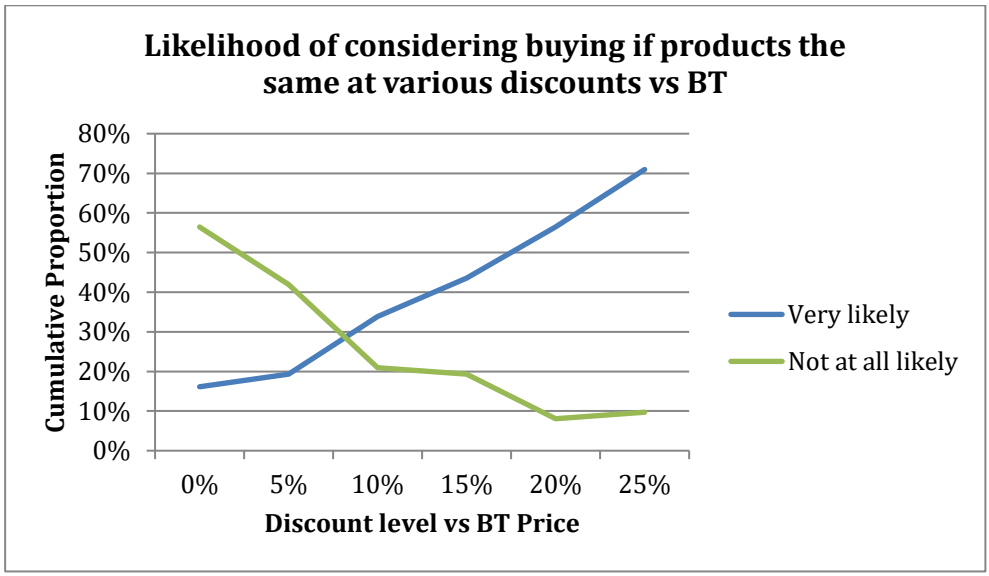
9.1.11 In May 2018, CityFibre commissioned GOS Consulting to undertake a study into the likelihood of buyers of telecommunications services in businesses considering an using a competitor to BT that builds its own network, rather than buying access to the Openreach network with a particular focus on 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

[14] See Annex 2 for the full survey report as submitted to Ofcom in September 2018.

significant value to them and to attempt to get a general idea of how much these features were valued by the buyers.

9.1.12 The study was completed and the report issued in September 2018, below are some highlights from the study.

Figure 2



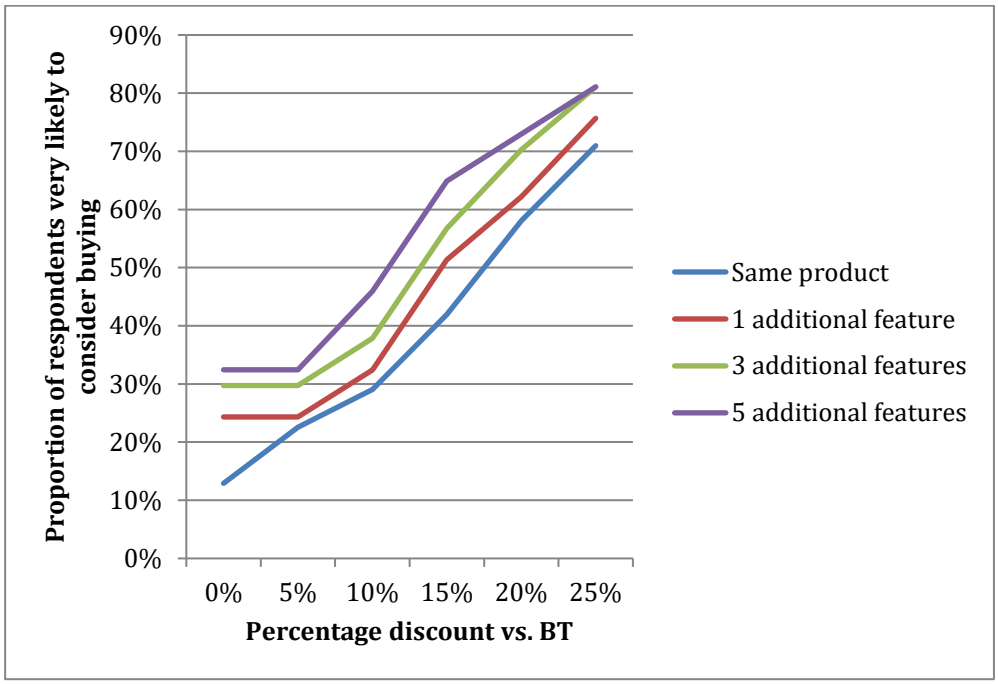
9.1.13 Figure 2 shows the likelihood of telecoms buyers to consider buying form a competitor with its own infrastructure at different levels of discount, if the product sold is the same as BT's product. In order for the majority of buyers to be very likely to consider the competitor's product[15], the competitor has to offer approximately 20% discount against BT's price.

9.1.14 Further, the study asked the telecoms buyers to rank a number of features that can be offered by operators with their own infrastructure, but not by BT[16] and they were then asked again at what level of discount they would be willing to seriously consider buying from the competitor if their 1, 3, or 5 highest ranked features were included in the product offered by the competitor. Figure 3 below shows the results.

[15] Which does not mean that they would purchase the product, only that they would seriously consider the product.

[16] Or by operators using the BT network.

Figure 3



9.1.15 Figure 3 shows clearly that, when including features only available from new all fibre networks, telecoms buyers become more willing to consider the competitor. At 20% discount, approximately 70% of buyers would seriously consider buying the competitor's product, if that buyer's top 5 features were included. This shows that telecoms buyers place significant value on the features only available from competitors not using BT's network.

9.1.16 Very importantly, however, is also that Figure 2 also shows that, even when offering 5 highly valued features, the competitor still needs to offer a significant discount against BT's price, in order to get a significant proportion of telecoms buyers to seriously consider buying their products.

9.2 The need for a price floor in the BCM

9.2.1 As demonstrated above in section 8.3, the proposed LLCC allows BT substantial scope to reduce pricing to deter competitive network investment. To illustrate the impact of such price reductions, CityFibre has built a Reasonably Efficient Operator (REO) model[17].

9.2.2 This model is intended to reflect the costs incurred by a new entrant operator, building all-fibre networks across 120 cities, and achieving 33% market share in the business connectivity market. The model also provides for coverage of the fixed access market, providing FTTP coverage to 50%

[17] [✂].

of premises passed. The model is therefore able to account for the economies of scope that exist between the FA and BC markets, and also takes account of the efficiencies that can potentially be gained from the use of PIA in these markets.

The table below shows the model outputs, comparing the unit costs for a stand-alone network to serve the BC market, along with the unit costs achieved when both markets are served. The efficiencies in serving both markets arise from the sharing of the core network, and the reduction in dig distances due to higher network density. The model accounts for both connection and rental costs and revenues, but for clarity we have focused on rental prices only in the current analysis, and so the connection cost is set to equal the current BT 1G EAD price, with the rental price being calculated to cover the costs.

Table 6: [✂]

The type of circuit modelled in the REO analysis is equivalent to a BT EAD circuit with a mainlink of around 3km. We have therefore included such a mainlink in the BT prices, to provide a like-for-like comparison between BT and REO prices.

9.2.3 [✂].

9.2.4 Taking the REO price using PIA, and assuming a network shared with the FA market, the table below compares the REO price with the level to which BT would be able to reduce its pricing under various scenarios derived from our analysis of the LLCC in section 8.3.

Table 7 [✂].

9.2.5 [✂].

9.2.6 [✂].

9.2.7 [✂].

9.2.8 The standard test for predatory pricing is whether the dominant provider covers its incremental costs. This is, however, not an appropriate measure in network industries like telecoms where there are substantial sunk costs and high economies of scale[18]. The incremental costs of a provider with market dominance (and by definition a market share not achievable by any other operator as only one provider can have >50% market share) will be so low that no other provider would be able to compete, so applying incremental costs as the threshold for predatory pricing in telecoms is therefore inappropriate, as recognised by Ofcom in its 2013 Cost Orientation Review paper.

9.2.9 Considering that duct comprises a high proportion of the assets used to deliver EAD services (the 2017 RFS suggests around 40%), and that this would be treated as largely common cost under a LRIC methodology, it seems clear that the incremental costs would indeed be well below fully allocated costs. Analysis using cost-volume elasticity data from Ofcom models suggests that a LRIC price would be no more than 30-40% of FAC, which would clearly not be a sustainable level for new market entrants.

[18] Ref: Deutsche Telecom Case C-280-/08 P, October 14 2010 and *Konkurrensverket v TeliaSonera Sverige AB, Case C-52/09.*

9.2.10 CityFibre believes that the most appropriate measure for setting a price floor would be the costs of a REO to provide the relevant service. If upstream remedies (including duct and pole access) are available in the market, then the REO costing model should take that into account to ensure that such efficiencies are included and that no inefficient network replication costs are included.

9.2.11 CityFibre has in the past submitted substantial evidence for how BT's fully allocated costs represent a price level with which even an efficient entrant cannot compete. This position was supported by the Competition and markets Authority (CMA) in 2017, when it reviewed CityFibre's appeal of the 2016 LLCC. The CMA stated as follows:

"*Our assessment of CityFibre's evidence is that it identified a credible case that it will be affected by the scale of the price reduction in the LLCC.*"[19]

"*We therefore agree with CityFibre that the LLCC is likely to have an effect on the pace of investment in competing networks*" [20]

9.2.12 CityFibre believes that setting a price floor using a REO model that assumes efficient use of the unrestricted DPA remedy as proposed in the PIMR consultation would provide the kind of transparent regulatory framework that would maximise investment in new fibre infrastructure and allow the UK to start catching up with other developed nations in availability of fibre infrastructure to service citizens and business across the country. Potential alternatives to a price floor

9.2.13 Above we have set out what we believe to be a very strong argument for why Ofcom needs to impose a price floor remedy in the BCM, to prevent BT from engaging in anticompetitive pricing. Recognising, however, that the development of a price floor would involve a considerable amount of analysis and likely a new consultation process for which there is not sufficient time as the current set of regulations in the BCM are set to expire on 31st March 2019[21].

9.2.14 Other than a price floor, which is clearly the preferred and optimal remedy to prevent BT from engaging in anticompetitive pricing, we believe there are other remedies that Ofcom could consider and implement within a reasonable time. We list those options below and provide a brief description of them with our views on the respective strengths and weaknesses:

- Notification to Ofcom of any price changes (including discounts of all kinds) in excess of a specific %;
- Notification to Ofcom of price changes as above, self-certification to prove compliance with a pre-specified test; and
- An economic replicability test for all new prices to be introduced (including discounts)

[19] See CityFibre Infrastructure Holdings plc v Office of Communications. Case 1261/3/3/16. Paragraph 3.80.

[20] See CityFibre Infrastructure Holdings plc v Office of Communications. Case 1261/3/3/16. Paragraph 3.81.

[21] We note that it is very unlikely that Ofcom will be able to complete the review of consultation responses, produce a Draft Statement for the review by the European Commission no later than the end of February for publication of a Final Statement by 31st March. It is therefore likely that an arrangement will need to be made to carry forward general remedies from the current set of remedies and to seek agreement from BT that it will not make price changes for a period to allow Ofcom to complete this BCMR process.

Simple notification

9.2.15 In our view, this would be the simplest and also the least effective remedy Ofcom could impose to prevent anti-competitive pricing. Ofcom would need to determine what should be the level of price change (or discount) that triggers the need for notification. We suggest that 15% would be a good threshold as it allows BT reasonable commercial freedom without needing to notify. There would need to be a safeguard against BT making several consecutive price changes just under the threshold, in order to avoid the notification requirement.

9.2.16 It would be important that there is some transparency in relation to what Ofcom would do when receiving a notification. We suggest that a high-level economic replicability test is performed, checking that BT has imputed the relevant upstream product costs (even if BT does not consume that specific product as it presently the case with the duct and fibre access product).

Notification including self-certification

9.2.17 This remedy would be very similar to the simple notification, but with the obligation on BT to include a high-level economic replicability test with the notification. This would reduce the burden on Ofcom and ensure that BT's price changes went through appropriate governance prior to being implemented.

Ex-ante economic replicability test

9.2.18 This remedy would (in principle) be similar to the VULA margin squeeze test previously imposed by Ofcom in the wholesale local access market.

9.2.19 It is CityFibre's view that this remedy is the next-best option to a price floor. Whilst it would take some time to set the detailed parameters for the test, that could be done in a subsequent process, while imposing the notification with self-certification remedy in the interim.

10 RFR

10.1.1 CityFibre refers Ofcom to the response to this consultation submitted by the IIG.

10.1.2 CityFibre believes that, should the reduced reporting requirements be implemented as proposed, it would significantly reduce our ability to make meaningful analyses of BT price changes and Ofcom's regulatory proposals. The reduced reporting would significantly increase the information asymmetry that already exists with BT holding all relevant costing information, Ofcom having access to a significant portion of that information, but competitive providers having access to little or no data at the level required to make meaningful analysis and meaningful contributions to the regulatory debate.

11 Annex 1 - Mobile backhaul competition

11.1.1 [✂].

12 Annex 2 – Telecoms buyer behaviour study report

1. 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

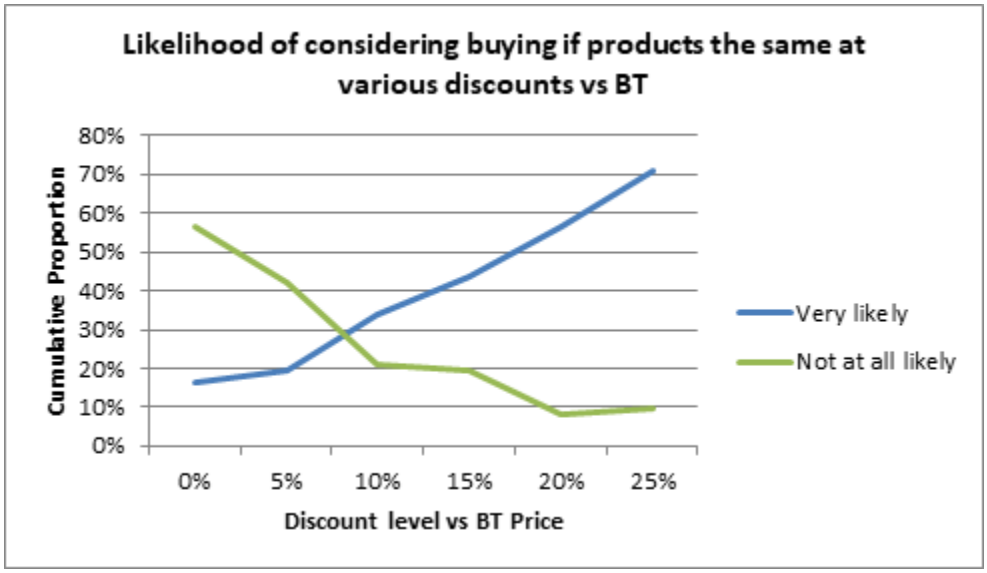
A total of 62 randomly selected organisations were contacted for all questions. However, for the question about the level of discount required when additional features were included (Question 6), we were only able to use 37 of the answers supplied. For that question, some interviewees provided answers 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

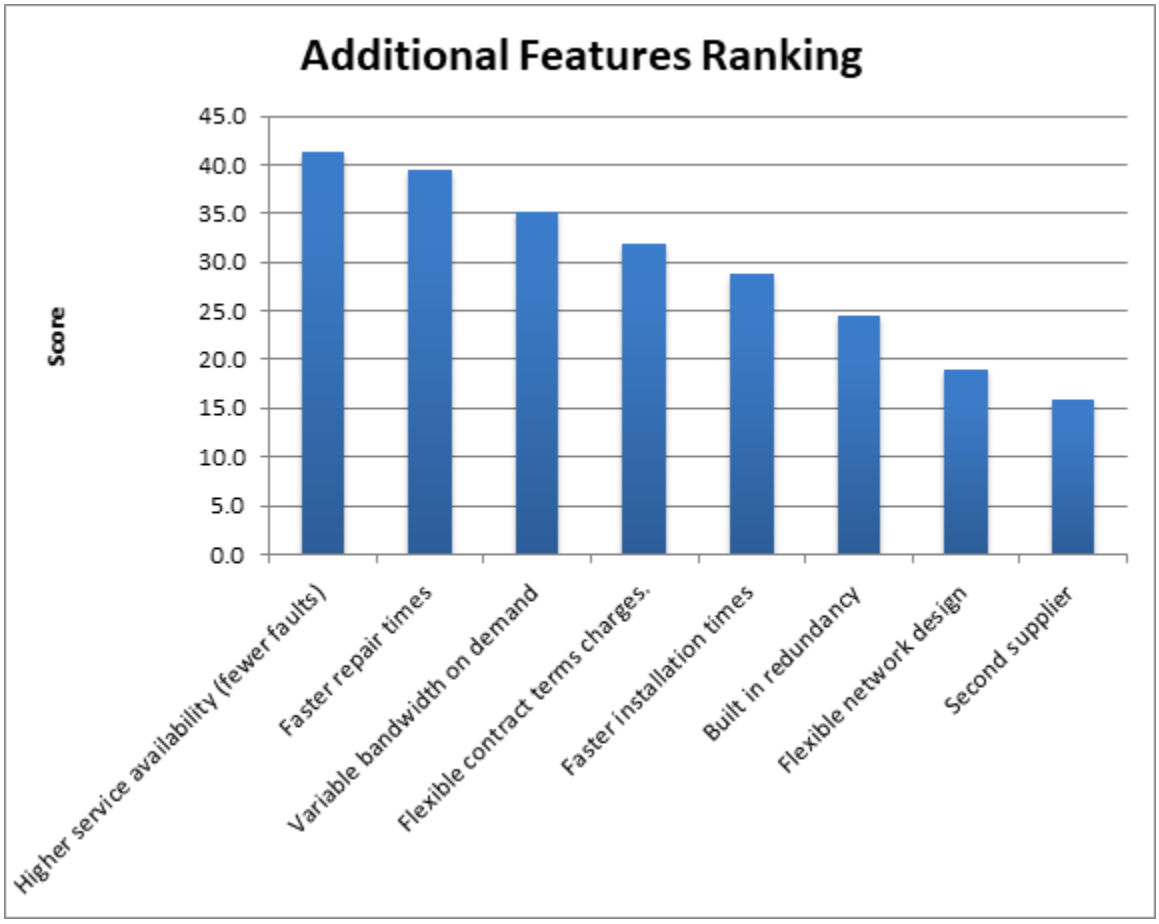
The survey found that buyers require a considerable level of discount against BT's price before they will be very likely to consider an alternative provider that uses its own network and which the buyer has not used before (an alternative provider). In fact, a 20% discount against BT's pricing would 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.

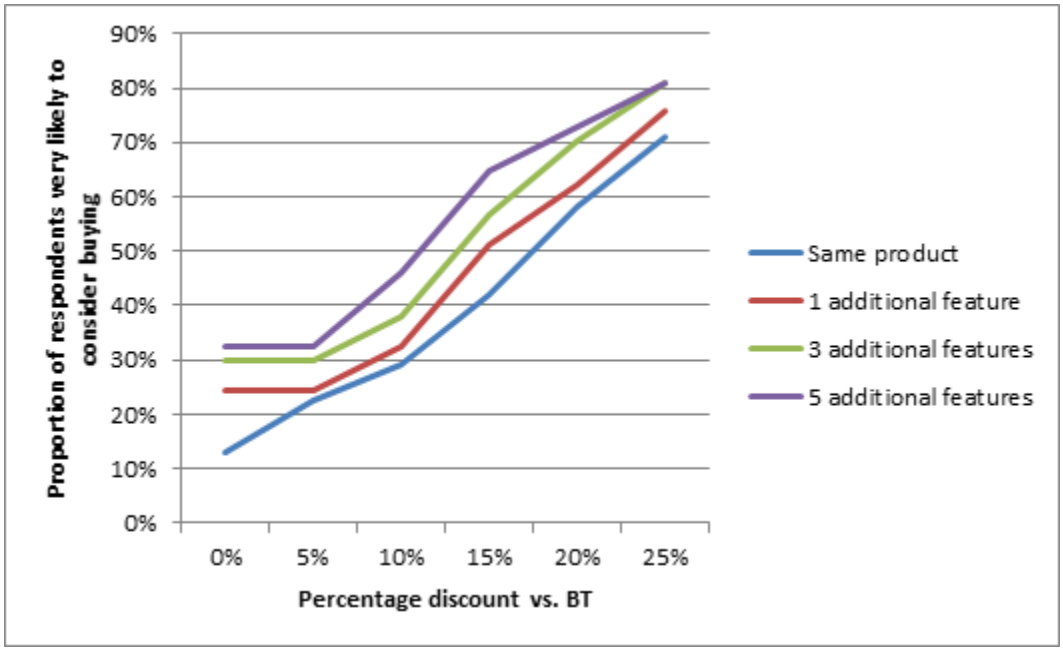
Having ranked the features, interviewees were then asked how much discount against BT's price for the standard BT product they would require in order to be very likely to consider using an alternative provider, if the alternative provider included their 5 highest ranked features, with each feature added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

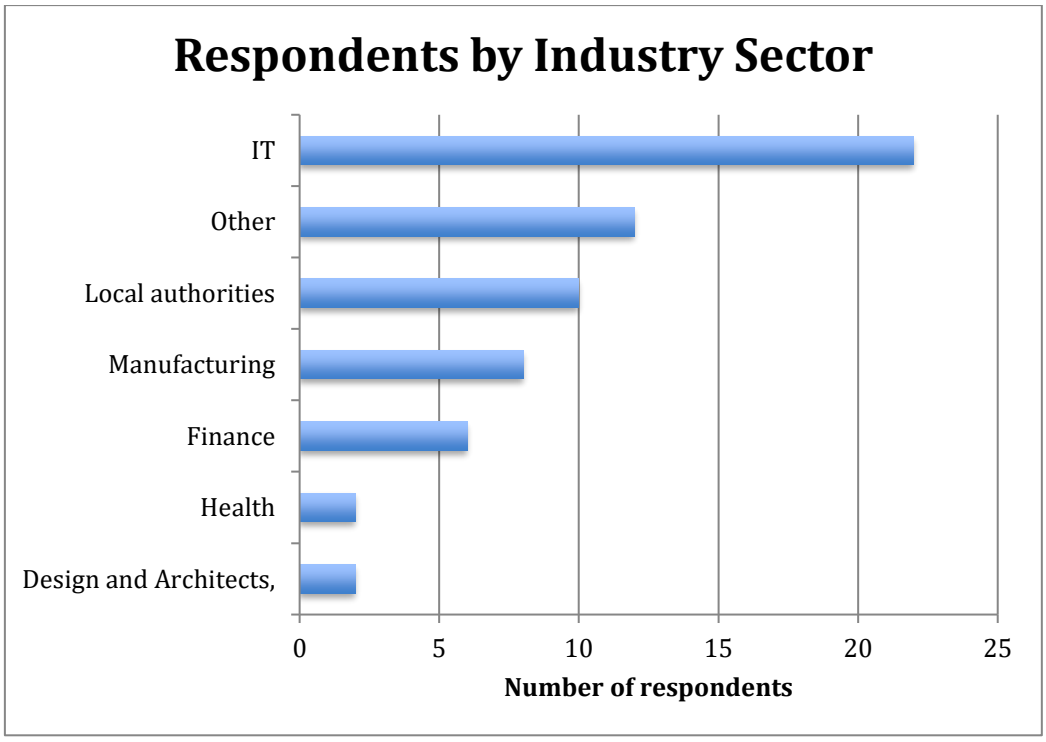
Further, we consider that the features offered by infrastructure competitors are likely to result in efficiency improvements, which could have significant value to the overall UK economy.

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	

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

TPS excluded	No - please include TPS and flag		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)])!!

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- 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?

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- No

Q6_1WHY. Could you tell me why that is?

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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?

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- 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?

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

- Yes
- No

13 Annex 3[✂]

14 Annex 4 [✂]