CityFibre's response to Ofcom's approach to remedies consultation

non-confidential version

12th June 2019

CityFibre

CityFibre

Contents

Executive Summary

1.1.2 CityFibre is currently embarked on a major programme of full fibre network construction. We have committed to build an initial 1 million full fibre connections across 12 cities in partnership with Vodafone, and are fully funded to go substantially beyond this. We have firm plans in place to build at least 5 million full fibre connections by 2025.

1.1.3 Ofcom's regulation will have profound impact on our ability to execute this plan and to continue to draw upon the necessary financing to do so. As we said to Ofcom at the time we announced the 5 million plan, vigorous action by Ofcom to safeguard competitive full fibre deployment in its early, vulnerable stages, is essential to our success and, we believe, to the achievement of the broader Government objectives for national full fibre deployment by 2033.

1.1.4 Ofcom's stated intention in this consultation is to align regulatory remedies with the strategic goal of securing a competitive full fibre market. We of course fully support this goal and there is much that we can strongly endorse in Ofcom's proposed approach. In particular, we welcome the recognition in Ofcom's consultation that continued downward pressure on regulated access pricing harms the incentives for alternative providers to invest and also distorts the incentives of CPs consuming regulated access products to either build alternatives for themselves or seek alternative suppliers such as CityFibre. We also welcome the central importance that Ofcom places on duct and pole access as a remedy explicitly designed to secure faster and lower cost competitive infrastructure rollout.

1.1.5 There are however several features of Ofcom's approach that we find are in direct conflict with Ofcom's stated objectives and with the Government's clearly articulated policies. More fundamentally, there are several critically important lacunae in Ofcom's approach that must be addressed if Ofcom's policy goal is to be achieved.

1.1.6 In addition to ensuring that the right approach and remedies are deployed from 2021 onwards, another principal theme of our response is that it is also necessary for Ofcom to review the remedies imposed in the current WLAMR, that is before 2021. First and foremost of these is action immediately to reduce the risk of anti-competitive behaviour by Openreach, notably in the form of geographic discounts or predatory pricing, that deters CPs from consuming alternative fibre networks. A major step-change in the pace of delivery of improvements in the delivery of DPA is also critically important and cannot wait until 2021.

1.1 BCMR-specific issues

1.1.7 In the prospectively competitive areas (market 2), CityFibre welcomes the overall focus on encouraging infrastructure investment in the business connectivity market rather than relying on forms of regulated access (i.e. through continued downward pressure on active Ethernet products or through the introduction of a comprehensive, nationwide dark fibre remedy).

1.1.8 The proposed adoption of CPI-0% for the overall cap on active leased lines in market 2 is helpful both in creating greater price stability and in securing at least some degree of competitive headroom for new entrants who do not enjoy Openreach's economies of scale. We particularly welcome the adoption of this rather than CPI-CPI as in the recent BCMR as this reflects the risks caused by possible increases in input costs. Rather than assuming that the CPI-0% effectively results in a cost level to that costs of a reasonably efficient operator (REO), we do, however, believe that it is necessary for Ofcom to build a model to ascertain the costs and use the resulting cost level to inform the market 2 charge control,

1.1.9 As we observed in our recent BCMR[1] response, there are some risks inherent in a flexible price control that covers a range of products which are likely to face different degrees of competitive intensity. Controls in the form of either more stringent sub-caps or predation tests/price floors of the kind already referred to would help towards mitigating this risk. We do not believe that more detailed sub-caps alone would be sufficient to mitigate the risks of BT gaming the charge control and pricing in a manner that harms investment incentives for certain products in certain areas.

1.1.10 In relation to the proposed dark fibre product, we continue to question the need for and advisability of introducing this remedy at least until the limits of alternative infrastructure deployment, that can be facilitated by unrestricted DPA, are more clearly established. Our concern is that Ofcom's proposed approach may (inadvertently) deter competitive investment in alternative fibre products, despite Ofcom's stated intentions. The problem here is the combination of a geographic market segmentation which we believe risks substantially underestimating the footprint of potential competitive fibre investment on the one hand, and the setting of regulated prices based on OR's own costs (factoring in its economies of scale). We have already raised concerns in relation to the geographic segmentation exercise in our response to Ofcom's earlier consultation and present further concerns in this response. The risk here is that Ofcom makes big calls on geographic segmentation based on incomplete evidence and spurious assumptions, such as real-world experience of using unrestricted DPA for business connectivity, and in the absence of critically important information such as the likely shape of future Government interventions in this space. This, when combined with regulated dark fibre prices set at BT's cost[2], becomes a self-fulfilling prophecy in that they lock out any competitive fibre investment that might otherwise have taken place. The risk can be mitigated by either narrowing the scope of market 3, or adopting a less aggressive methodology for setting the charges for regulated dark fibre, such as using REO costs instead of BT's costs.

1.2 WLAMR-specific issues

1.2.1 We have similar concerns about geographic market definition in relation to the WLAMR.

1.2.2 This is also the segment of the market where we believe the need for ex ante action on anti-competitive pricing and related behaviour is the most pressing. We welcome the proposal to extend the geographic discounting restriction for G.fast to also cover FTTP, but we consider that the remedy is insufficient to address all potentially problematic examples of targeted discounts, and in any event we believe the proposed change to this remedy should be introduced on an earlier timescale, as an adjustment to the existing WLAMR remedy set is objectively justified by changing market circumstances.

1.2.3 In relation to the specific proposals on charge controls, deregulation of pricing for higher bandwidth products (FTTC and FTTP) is welcome. The procedurally cleanest way to achieve this would be to deregulate pricing for superfast broadband in prospectively competitive areas, but introducing measures (such as price floors) to protect against anticompetitive practices by BT.

1.2.4 The retention of an anchor price for 40/10 entry level 'superfast' products in market 2 is problematic given that (as we noted in our response to the WLAMR where current price levels were imposed), our modelling suggests that these prices are already below those that a REO would incur in providing a competitor product.

1.2.5 As the market migrates towards full fibre, away from FTTC, Ofcom proposes to re-anchor on a '40/10' FTTP product, making some additional allowance in pricing for the higher benefit customers derive from FTTP over FTTC. We agree with this overall approach and have attempted to set out a method of calculation intended to create a more rigorous basis for determined what that 'uplift' should be.

[1] For the 2019-21 period.
[2] Reflecting BT's economies of scale and scope.

1.2.6 In relation to the market 3 segment, we are concerned that Ofcom's proposals may create a substantial divergence in costs and hence prices between markets 2 and 3. Moving away from geographically averaged pricing would have profound spill-over effects on new entry and ultimately the achievement of effective competition within market 2.

Adoption of a RAB model for Market 3

1.2.7 We understand Ofcom's motivation here to be to create a regulatory environment in parts of the country where Openreach faces no or limited competitive pressure that nonetheless provides at least some incentive for Openreach to deploy full fibre in scale. We understand the political imperative to encourage rural deployment set by the FTIR. But, as a general comment, these proposals seem to us to be poorly aligned with what we understand to be the Government's intention to create other incentive mechanisms – most obviously a revamped system of public subsidy – to encourage fibre deployment in rural areas by a diverse range of suppliers.

1.2.8 Worryingly, whilst the Government has said it will focus interventions on the 10% of the country, where it is already clear that deployment will only take place with subsidy, Ofcom's market 3 will cover many areas where alternative providers may choose to deploy without any specific inducement other than the need to fulfil contracts for local authority connectivity needs[3]. Many local authorities are now moving to a model that bundles urban areas ('market 2' in Ofcom terms) with rural periphery communities (Ofcom's 'market 3'). . The likely resulting price levels in market 3 and BT's near-guaranteed rate of return in market 3, would give BT substantial advantages when bidding for such local authority contracts. Further, by definition, if competitive providers win such local authority contracts, there will be competitive infrastructure in market 3, actively encouraged by Government initiatives, but actively discouraged by Ofcom.

1.2.9 Overall we are unpersuaded that the RAB model has powerful incentive effects for Openreach to deploy in areas where (a) it faces no competitive threat and (b) no public subsidy is available to it; but the RAB approach as proposed by Ofcom could have some unfortunate spill-over effects that would inhibit competitive deployment.

1.3 Overarching policy issues

1.3.1 There are several substantial lacunae in Ofcom's approach and, overall, the remedies set out in the consultation do not sum to a system of regulation that will secure Ofcom's objectives.

1.3.2 The first and most important gap is the almost total absence of proposed ex ante remedies designed to circumvent anti-competitive behaviour by BT, notably in the form of predatory pricing, volume discounts and tying arrangements.

1.3.3 The public and private statements of senior management at both BT and Openreach strongly suggest that they will do everything they can to resist losing OR's current grip on the access market. BT/ORs inherited access monopoly[4], its substantial market shares, in many areas locked in via

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[3] In fact, many competitive providers are actively deploying new networks within what Ofcom proposes to define as market 3.

[4] McTighe, Mike. Openreach. (2019) 'Keynote session 2: Investment & Markets.' Full Fibre and 5G Future for the UK: Keynote Panel.' "*We intend to be the national FTTP provider, we believe we'll deliver the lion's share of the UK government's 2025 and 2033 ambition."*
Sherman Michael. BT Group. (2019) 'Keynote session 2: Investment & Markets.' Full Fibre and 5G Future for the UK: Keynote Panel. *"I believe Openreach is the only one that will tackle the entire UK*."
Selley, Clive. Openreach. (2019). 'Openreach commits to 3000 trainees in 2019'. Comms Business. *"We're making great progress towards reaching our target of upgrading three million homes and businesses to full fibre the end of 2020 […] we're committed to being the UK's national provider […]"* [Emphasis added]. Available at: https://www.commsbusiness.co.uk/news/openreach-commits-to-3000-trainees-in-2019/

[4] In particular for mobile backhaul services.

dubious restrictive contracts[5], and its control of a key input – ducts and poles – gives it the means as well as the motive to blunt infrastructure competition, particularly in its early, most vulnerable, stages. If OR is able to frustrate and delay the introduction of genuinely workable scalable DPA, whilst at the same time inducing its CP customers to consume its own FTTP offering via volume discounts, loyalty schemes, below-cost 'special offers' and bundling of products across competitive and non-competitive areas, then the current wave of competitive infrastructure deployment may fizzle out quickly. This is for the simple reason that investors' confidence in Ofcom's regulation will rapidly diminish. We therefore highlight the need for a comprehensive remedy set that utilises Ofcom's extensive legal powers to deter anti-competitive behaviour ex-ante. It is entirely unsatisfactory to rely solely on competition law to address such problems, as by the time any such proceeding has been completed the damage will have been done[6] and a reputational barrier to investment created that will deter alternative fibre investment for the foreseeable future.

1.3.4 Another significant lacuna relates to the continued difficulties in obtaining workable, scalable duct and pole access. Ofcom's strategy, as we understand it, hinges on the gap between DPA's theoretical benefits and the current unsatisfactory status of the 'day one' PIA product, being rapidly closed.

1.3.5 Openreach's tactics on PIA thus far demonstrate once again its well-honed ability to 'walk backwards slowly'. Progress has been pitifully slow and replete with many examples of Openreach using procedural ruses and negotiating tactics to slow down progress.

1.3.6 We are reliant on supply of a key input on our principal competitor in the full fibre market, whose overall organisational motivation, as publicly stated on several occasions by Openreach senior management, is to continue to be the 'national provider' (i.e.: the monopoly provider) of full fibre infrastructure. Whatever Chinese Walls currently exist within Openreach, the fact is that the arguments for some form of at least functional separation of 'DuctCo' are at least as compelling as they were for the original functional separation of Openreach itself when the focus was in creating the right organisational and personal incentives for staff and management to make a success of LLU. Ofcom should in the meantime set clear benchmarks for the delivery of phase 2 improvements, and the changes to fully implement the removal of usage and geographic restrictions, within this calendar year, and set aside the necessary resources both within the enforcement team and the OTA2 to hold Openreach to account for undue delays.

1.3.7 Ofcom also needs to integrate into the BCMR and WLAMR 2021-26 review processes more forward-thinking analysis of the likely evolution of the market towards some degree of shared access to passive fibre infrastructure. Passive infrastructure sharing may be driven by several different factors, including the emergence of commercial agreements (such as reciprocal build arrangements of the kind now emerging in other EU markets), 'mutualisation' of final connections as pioneered in France, or the evolution of full fibre networks to the NGPON2 standard that would allow for much greater degree of network 'virtualisation' via wavelength unbundling.

CityFibre remains strongly of the view that the policy goal of total, end-to-end passive fibre network duplication is inefficient and unrealistic. It will both militate against the achievement of the Government's full fibre rollout targets and create potential risks to consumers, as where, for example, the current PIA specification would require fibre deployed by one operator at pole top to be removed to make way for an identical fibre drop, in the event that the consumer wishes to switch supplier, a this creates risks to the services to other customers connected to that pole. This is a scenario that is highly likely to arise within the lifetime of the remedy sets contemplated in these 2021-26 reviews, as is the deployment of NGPON2 technology. The informal conversations we

[5] In particular for mobile backhaul services.

[6] Ofcom. (2018) "Decision of the Office of Communications. Article 102 Treaty on the Functioning of the European Union and Section 18 of the Competition Act 1998". Issue Date: 14th August 2018. Publication Date: 26th October 2018. Case: CW/01122/01/14.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0022/124591/01122-infringement-decision.pdf. Section 7, Sub-section F. Pages 249-261

have had with Ofcom on this subject now need to dovetail with the development of remedies that could be imposed within the AAMR period.

2 Introduction and background

2.1 The background to this consultation

2.1.1 This consultation fits into the wider context of the Government's Future Telecoms Infrastructure Review (FTIR), which concludes that the UK needs to accelerate the deployment of new full fibre networks and that this is best achieved through the investment of a number of commercial entities, including BT.

2.1.2 This clear conclusion that investment in new full fibre networks should come from a range of commercial entities (including BT), and that Government subsidies should only be applied where there is a clear case that the locations in question are not economically viable for commercial investment, is an important backdrop to Ofcom's consultations and coincided with a publication by Ofcom in July 2018 of its revised strategy to actively encourage investment in new full fibre networks.

2.1.3 One of the consequences of Ofcom's revised objectives is that Ofcom is now actively seeking to ensure that investment incentives are aligned between the market for broadband services (the wholesale local access market (WLAM)) and the market for leased lines (the business connectivity market (BCM)). This consultation is part of the effort to ensure alignment between the remedies in the two markets and to give effect to Ofcom's new objectives.

2.1.4 CityFibre agrees with the FTIR conclusions and with Ofcom's new strategic objectives and is the UK's leading investor in competitive full fibre networks. There has been a recent influx of competitive fibre deployment announcements from industry which are either set to take place and/or set to finish during this period[7], CityFibre has publicly stated its intent to roll out to 1 million premises by 2021, 5 million by the end of 2024 and has already begun deployment in 7 cities[8].

2.1.5 CityFibre is however concerned that, whilst the headlines of Ofcom's proposed interventions appear aligned with the FTIR conclusions, the detailed proposals are inconsistent, and in some places in direct conflict, with the Government's stated positions and initiatives to encourage investment by a plurality of commercial entities across as much of the UK as possible.

1.2 This consultation

2.1.6 This is the second preliminary 'approach to' consultation Ofcom has issued in relation to its upcoming 'all access' market review, which will take effect in April 2021. The first 'approach to' consultation was to set out Ofcom's thoughts in relation to the definition of relevant geographic markets for the WLAMR and BCMR product markets. That consultation closed in March 2019 and CityFibre submitted a response as well as contributing to the response submitted by the Infrastructure Investors Group (IIG)[9].

Infrastructure competition: 'Effectively competitive' or 'contestable'?

2.1.7 In responding to this consultation, CityFibre reiterates the view, previously expressed on several occasions, that if a three-player market is regarded as the minimum required to deliver 'effective

[7] Jackson, M. (2019) "Building UK: Summary FTTP Broadband Rollouts Investment". ISPreview. 9th May 2019. Available at: https://www.ispreview.co.uk/index.php/2018/04/building-uk-summary-fttp-broadband-rollouts-investment.html/2

[8] CityFibre. (2018) "CityFibre announces a £2.5bn investment plan to expand its full fibre network and unlocks the UK's next generation broadband". CityFibre Press Release. October 23 2018. Available at: https://www.cityfibre.com/news/cityfibre-announces-2-5bn-investment-plan-expand-full fibre-network-unlock-uks-next-generation-broadband/

[9] The members of the IIG are CityFibre, euNetworks and Zayo.

competition' as Ofcom defines it, we estimate that a maximum of a third of the UK will support such a competitive outcome even with an effective DPA remedy. [10] The likely shape of the resultant 'first third' market would be a three-way split between Openreach, Virgin Media and no more than one open access full fibre new entrant. Essentially, the key test is whether an operator can achieve minimum efficient scale with a presumptive 33% of the market[11]. Assuming that BT continues to consume solely from Openreach and VM remains a closed network, the determinant of the viability of a new competitor will be the consumption decisions made by the independent CPs, most importantly those with substantial existing market share (Sky, TTG) or with scope for rapid market expansion (e.g. Vodafone). Thus, a competitive equilibrium *even in the first third* is only one possible outcome, and the final form of infrastructure competition will be shaped by CP consumption decisions.

2.1.8 Conversely, the majority of the market, including much of what Ofcom is assuming to be 'non-competitive', is contestable. That is, full fibre providers other than Openreach would invest there - without public subsidy[12] - on the assumption that they will be able to achieve minimum efficient scale by acquiring 50% of the market or more. With 95% of the country still unaddressed by full fibre networks, and all operators, not least Openreach, being capital-constrained, the most likely commercial evolution of the market will be towards a rollout of full fibre networks which are designed to secure for each investing operator achieves minimum efficient scale. In the first instance, this is likely to involve those deploying full fibre networks seeking to avoid head-to-head infrastructure competition with other fibre networks. The Government of course recognised this itself in the FTIR and for that reason proposed transparency mechanisms to allow full fibre deployments to be made with a degree of foreknowledge of rivals' build plans.

2.1.9 This is the reality that provides the backdrop to Ofcom's choice of remedies for the 2021-26 period. However theoretically desirable a model of head-to-head infrastructure competition is, it is highly unlikely to emerge organically for all but a small segment of the market in this market review period (if at all). Indeed, there is an obvious conflict between the goal of promoting head-to-head infrastructure rollout on the one hand and the achievement of the Government's overarching goals of national full fibre coverage by 2033.

2.1.10 Within the 2021-26 period, it is also highly plausible that what will emerge will be a pattern of reciprocal/collaborative full fibre network build as has increasingly been the case in other, more advanced, EU full fibre markets. Under this model, more challenging geographies will receive full fibre network construction on the understanding that the resultant infrastructure is an open access network accessible to all or most downstream users by commercial agreement.

2.1.11 Nonetheless, action by Ofcom to make the market more *contestable* would have powerful public policy benefits. In the first instance, it means that decisions about full fibre deployment are not solely determined by the private interests of BT's shareholders. There is considerable appetite on the part of infrastructure investors[13] to address the UK's parlous current state of full fibre deployment,

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[10] In section 4.2 CityFibre presents the REO costs of deploying networks to 120 towns and cities across the UK, if only a 33% market share can be reached, the costs of deployment is much higher than Ofcom's proposed anchor price, which will guide the price of the majority of connections by new full-fibre network operators.

[11] In fact, many competitive providers are actively deploying new networks within what Ofcom proposes to define as market 3.

[12] And are already doing so.

[13] NCA & PointTopic. (2019) "Metric for the UK Independent network sector". A Point Topic Report for INCA. Available at: https://www.inca.coop/sites/default/files/independent-network-report-inca-spring-2019.pdf
Jackson, M. (2019) 'Building UK: Summary FTTP Broadband Rollouts Investmen'. ISPreview. 9th May 2019. Available at: https://www.ispreview.co.uk/index.php/2018/04/building-uk-summary-fttp-broadband-rollouts-investment.html/2;
CityFibre. (2018) 'CityFibre announces a £2.5bn investment plan to expand its full fibre network and unlocks the UK's next generation broadband'. CityFibre Press Release. October 23 2018.

providing the right framework is put in place to provide a reasonable prospect of economic returns on this investment. In simple terms, if the market remains contestable during this review period (2021-26), substantially more capital can be deployed to construct full fibre networks than would be the case if the country was solely reliant on the munificence of BT's shareholders for this.

2.1.12 Second, a multi-player full fibre infrastructure market (even without head-to-head competition in specific geographies) confers considerable benefits in terms of driving innovation and quality of service improvements. In the short run, this gives the independent CPs the ability to drive the outcomes they need in terms of connectivity and cost by selecting their preferred partners for full fibre delivery in each given area. BSkyB has recently announced that it is embarking on exactly that kind of selection process, which can be expected to drive up the quality and drive down the costs of the full fibre that it consumes. In the longer term, a multi-player market would allow for informal or formal 'yardstick' regulation.

2.1.13 In the short term, the regulatory solutions which Ofcom is proposing are therefore generally oriented in the right direction. Promoting 'infrastructure competition' will make the market more contestable and hence will drive both more extensive and higher quality full fibre deployment than would be the case if the country was solely reliant on Openreach to effect the Government's full fibre rollout objectives.

2.1.14 However, when we get into the detail of Ofcom's analysis, the mismatch between Ofcom's vision and the likely commercial reality becomes more problematic. For example, the presumption in Ofcom's approach is that there is no point in promoting infrastructure investment in parts of the market that it deems 'non-competitive' and it proposes remedies here such as cost-based regulated dark fibre, that would ensure that the non-competitive status of that market becomes a self-fulfilling prophesy by locking out alternative infrastructure investment. Not only does this ignore the benefits of making investment in these areas contestable, but it is starkly at odds with the direction of Government interventions which (as we understand it) is to avoid the mistakes made in the design of BDUK superfast broadband interventions and make any future public subsidy to build full fibre in the most challenging geographies a contestable opportunity

Ofcom's proposed geographic market definitions

2.1.15 Further to our fundamental concerns with Ofcom's approach to both the definition of geographic markets and to the remedies applied in the markets defined, it is CityFibre's view that Ofcom's proposed geographic market definitions have significant flaws. Whilst we will not reiterate all our concerns in relation to the geographic market definitions in this response, we do believe that it is important to focus on Ofcom's proposed criterion for defining what is known as market 3 (that is the 'non-competitive' market)[14].

2.1.16 The reason for reiterating these points is that, it seems clear from Ofcom's proposed remedies for market 3, once the proposed market 3 remedies are applied, it becomes a self-fulfilling prophecy that very little or no commercial investment will be targeted at the market 3 locations. We will discuss our views on the proposed remedies in the remainder of this document, so here we consider briefly again the definition of market 3.

2.1.17 Ofcom proposes that market 3 is defined by the absence of indicator's used to define market 2 (potentially competitive) areas:

"Category 2 (potentially competitive areas) includes areas:

Available at: https://www.cityfibre.com/news/cityfibre-announces-2-5bn-investment-plan-expand-full fibre-network-unlock-uks-next-generation-broadband/

[14] In this document we refer to the non-competitive market as 'market 3, and to the potentially competitive market as 'market 2'.

- *With one or more existing alternative ultrafast networks already present that are not included in Category 1;*
- *Where one or more operator has plans to deploy;*
- *Where we consider future rollout could be economic.*

Category 3 (Non-competitive areas) includes areas with no existing alternative ultrafast networks, no operator plans and where we do not consider build is likely to be economic"[15]

2.1.18 Ofcom approaches the measure of the aforementioned indicators:

"[,,,] using a threshold of at least 65% premises being covered […] within each individual geographic unit (which [Ofcom propose] to postcode sectors […]) by:

- *Counting the number of existing networks already present;*
- *Assessing whether any networks are planned to be present; and*
- *Assessing whether future network is viable"*[16] *[emphasis added]*

2.1.19 With regards to the latter, Ofcom identifies the economic viability of these candidate areas by identifying urban postcode sectors where there is a reasonable density of premises and groups theses postcodes into contiguous clusters. Ofcom then identifies where network build may be economically viable *"[using] a threshold of areas with at least 20,000 premises"*[17]

2.1.20 Ofcom's proposed definition results in approximately 30% of UK premises being located in market 3. Given Ofcom's proposed remedies this means that Ofcom has decided that there is no prospect of infrastructure competition to serve 30% of UK's premises, and the vast majority of the UK geographic landmass.

2.1.21 CityFibre's response to the geographic markets consultation, set out why we believe that Ofcom is wrong in that assumption and that we believe that there are reasonable prospects of competitive market entry for a large part of what Ofcom defines as market 3. The introduction of unrestricted duct and pole access (DPA) should result in a not insignificant reduction in construction costs to serve premises across the country and is likely to make it viable for operators, including CityFibre, to serve significant parts of the locations included in Ofcom's market 3.

2.1.22 As well as depriving customers in market 3 from the prospect of being served by competing networks, a further consequence of defining market 3 as large as Ofcom has proposed would be that BT would focus its initial market 3 investment in the most commercially attractive areas (where it is likely that commercial investment would happen in any case) and get the near-guaranteed rate of return resulting from Ofcom's proposed RAB-style regulation for market 3. The areas where there is clearly no prospect for commercial investment will most likely be left unaddressed until the next charge control period.

2.1.23 If Ofcom were to initially define market 3 more narrowly, then BT would have to invest in the least attractive areas during this charge control period, if it wants to benefit from the near-guaranteed rate of return promised by Ofcom's proposed RAB-style price regulation. In addition to that, competitive providers would retain investment incentives in the more commercially attractive parts of what is currently defined as market 3, and the overall investment in what is currently defined as market 3 would likely be higher than if the currently proposed market definition was to be retained.

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[15] Ofcom. (2018) "Consultation Promoting investment and competition in fibre networks". Page 10, Paragraph 2.17. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0005/130001/Consultation-Promoting-investment-and-competition-in-fibre-networks.pdf

[16] Ofcom. (2018) 'Consultation Promoting investment and competition in fibre networks.' Page 14, Paragraph 3.3. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0005/130001/Consultation-Promoting-investment-and-competition-in-fibre-networks.pdf.

[17] Ibid. Page 34, Paragraph's 4.30-4.31.

2.1.24 The proposed remedies for market 3 will, in CityFibre's opinion, ensure that those ares will never attract competitive investment. It would seem counter-intuitive that a regulator should choose to design market structures and interventions to actively prevent infrastructure competition. CityFibre believes Ofcom's approach to be in conflict with Ofcom's duties.[18]

2.1.25 CityFibre therefore urges Ofcom to review its proposed criteria for defining market 3, to maximise the benefits from available commercial investment as well as from the RAB-style price regulation that will incentivise BT to invest in commercially unattractive locations.

2.2 Introducing CityFibre

2.2.1 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.

2.2.2 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.

[18] Communications Act 2003, c.21. S3 (1) – *"It shall be the principle duty of OFCOM, in carrying out their functions – (a) to further the interests of citizens in relation to communication matters; and* ***(b) to further the interests of consumers in relevant markets, where appropriate by promoting competition."***.[emphasis added] Available at: https://www.legislation.gov.uk/ukpga/2003/21/section/3

3 BCMR Specific issues

3.1 Ofcom's approach and objectives

3.1.1 CityFibre agrees with Ofcom's overall approach in the business connectivity market, of designing the regulatory framework to encourage investment in competing fibre networks to deliver high quality and innovative connectivity solutions to customers, whether retail or wholesale.

3.1.2 CityFibre, however, has concerns that Ofcom appears to believe that all that is required to encourage investment in competing fibre networks is to stop regulating the prices of BT's wholesale leased lines down, with no need to impose restrictions on BT's ability to price in a manner to discourage competitive network investment.

3.1.3 CityFibre submitted detailed analysis of the scope for BT to game the charge control framework proposed by Ofcom for the 2019 – 2021 BCMR, and those issues remain valid and a significant concern for investors.

3.1.4 CityFibre strongly urges Ofcom to consider the imposition of price floors or mechanisms that have a similar effect and to carefully review the scope for gaming in the charge control Ofcom will be designing for the 2021 – 2016 period. Whilst CPI-0 is an improvement on the CPI-CPI imposed by Ofcom for the 2019 – 2021 period[19], more attention needs to be paid to the detailed construction of baskets and sub-caps to limit the scope for gaming.

3.1.5 In addition to the need to prevent anticompetitive behaviour by BT, Ofcom should also ensure that its interventions maximise the benefits from competition to as large a part of the UK consumers and citizens as possible. CityFibre is concerned that Ofcom's proposals for the introduction of regulated dark fibre priced at BT's cost s [20] will be a direct disincentive to infrastructure investors and will be to the direct detriment of consumers and citizens.

3.2 BCMR-specific issues relating to potentially competitive areas

Charge control remedies

3.2.1 CityFibre broadly welcomes Ofcom's approach in gradually relaxing price regulation on active leased line services, and a move to unrestricted DPA as the primary remedy.

3.2.2 CityFibre welcomes Ofcom's proposal that from 2021 onwards, the charge control should be set at CPI-0% rather than a nominal cap of CPI-CPI. As noted in the response of the IIG to the 2018 BCMR consultation, a real-terms charge control avoids the risks of uncertain levels of inflation; in an environment 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 would be predicted. Alternatively, a deflationary environment under a nominal control would result in real-terms price increases. CPI-0% would therefore appear to be a more rational approach, which we strongly support.

3.2.3 Setting a Leased Line Charge Control (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

[19] CityFibre proposed that CPI-0% should replace Ofcom's proposed CPI-CPI for 2019 – 2021, but Ofcom has recently published its intention to maintain the CPI-CPI charge control for that period. See the following for CityFibre' response: CityFibre. (2019) " Business Connectivity Market Review and Review of BT's Regulatory Financial Report: Response submitted by CityFibre Infrastructure Holdings". Page 10. Section 8.2. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/136629/CityFibre.pdf.

[20] Reflecting BT's economies of scope and scale.

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 from users of BT's infrastructure. It should be noted, however, that the CPI-0% charge control does not guarantee that the prices are set at a level that can be replicated by an REO. Ofcom should develop an REO cost model to ascertain the costs of an REO and set the charge control to reflect that.

3.2.4 CityFibre also notes that Ofcom's prices of Ethernet services at 1Gbit/s and below have been regulated with the intention that they reflect efficient costs at the end of the 2016-19 LLCC, and that for the 2019-21 LLCC, the charge control is set to CPI-CPI[21], with the result that prices will decline in real terms (assuming positive inflation). Ofcom believes that this nominal charge control should lead to BT recovering £15 to £25m more than if it was to set a cost-based charge control over this period.

3.2.5 However, due to the uncertainties in future inflation levels, and the likelihood of forecasting errors in Ofcom's modelling, CityFibre believes that there is considerable uncertainty regarding the level of Ethernet prices in 2021 in relation to efficient costs at that time. We therefore believe that a further review, including the development of an REO model, will be necessary before deciding on the most appropriate price control for 2021 onwards.

3.2.6 It is vitally important that the price levels frozen into a real-terms charge control from 2021 both allow BT to recover efficiently incurred costs, and also incentivise efficient investment by competing operators. So, the review should also recognise 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.

3.2.7 Consideration should also be given to BT's opportunity for targeted price reductions in order to harm competing network rollout. This could be addressed either by sub-basket caps, or by an REO approach to setting price floors.

3.2.8 As was highlighted in CityFibre's response to the recent BCMR consultation, the proposed sub-basket charge controls require stringent rigidity in order to prevent BT's ability to game the charge control design. Specifically, CityFibre raised its concerns with the CPI+5% sub-basket charge control, which in its modelling demonstrated BT's ability to increase its (current) higher volume 10Mbit/s and 100Mbit/s EAD lines and offset this and significantly decrease its price for 1Gbit/s circuits, whilst keeping within the basket and sub-basket charge controls and maintaining overall basket revenue.[22] CityFibre therefore encourage Ofcom, to implement a sub-basket which is more narrow than the proposed CPI+5% charge control for the current BCMR.

3.3 BCMR-specific issues relating to non-competitive areas

Dark fibre remedy

Introducing dark fibre in parallel with unrestricted duct and pole access

3.3.1 Ofcom proposes to impose a dark fibre access (DFA) remedy in the non-competitive geographic market, as Ofcom believes that areas in this market will not attract investment in alternative fibre networks, despite the imposition of an unrestricted duct and pole access DPA remedy nationally in

[21] Ofcom. (2019). 'BCMR Draft Statement.' Vol. 2. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/149339/volume-2-bcmr-draft-statement.pdf.
[22] CityFibre. (2019) 'Business Connectivity Market Review and Review of BT's Regulatory Financial Report: Response submitted by CityFibre Infrastructure Holdings.' Pages 10-11. Section 8.3..
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/136629/CityFibre.pdf.

the UK.

3.3.2 CityFibre disagrees with Ofcom's definition of the non-competitive geographic market[23].

3.3.3 In addition to CityFibre's overall views on Ofcom's proposed geographic market definitions, there are specific concerns in relation to the business connectivity market (BCM). Ofcom does not know what the impact of the unrestricted DPA remedy will be and, whilst it may be more challenging to deploy broadband networks using DPA in more sparsely populated areas, that is not true to the same extent for the provision of point-to-point connectivity. DPA can significantly reduce the cost of providing individual point-to-point connections and, as the pricing of such connections are typically distance related, it is likely that increased competition in the business connectivity market would result from the introduction of unrestricted DPA. Longer connections in more remote areas would benefit from the inclusion of DPA for long distance connections as well as the ability to use the remedy for point-to-point connectivity without this having to be combined with a pre-specified volume of applications for broadband connectivity.

3.3.4 It remains our view that a DFA remedy should be considered only once the limits of competitive infrastructure deployment enabled by DPA have been established. The remedy should not therefore be introduced or extended in this market review. If infrastructure competition stalls for whatever reason within the market review period, that decision could of course be revisited. We are sympathetic to arguments advanced by the MNOs in particular that the current mobile backhaul market and provided extensive commentary and evidence on the barriers to competition in that sub-market during the BCMR consultation. It remains our view that Ofcom should carefully examine the current barriers to competition in that market before reaching for regulated dark fibre as a solution to a problem which it has yet to thoroughly examine. We also note that we have offered to many of those asking for regulated dark fibre, our own competitive dark fibre offerings as a direct replacement for existing active backhaul circuits, with little take up from them. This reinforces our view that regulated DFA is not the obvious solution to the market failure that currently exists in that market segment.

3.3.5 As described in section 2 above, CityFibre believes that the introduction of unrestricted DPA will change the investment cases for smaller communities and the connection of premises further away from operators' existing networks to reduce the number of locations that remain commercially unviable for competitive fibre investment. We believe it is imperative that Ofcom provides a window of time for the unrestricted DPA remedy to take effect, before introducing DFA as well. The longer term benefits from new full fibre network investment will outweigh the risk of slightly reduced market entry during the period of this review. Additionally, Ofcom would have the power to modify remedies during the review period, should it find that DPA is not having the effects it had hoped.

3.3.6 The European Commission (the EC) has made it clear that it considers that national regulatory authorities (NRAs) should impose regulatory remedies as far upstream as possible and only intervene further downstream if the upstream remedies have proven ineffective. Specifically, Recital 154 of the European Electronic Communications Code (EECC) states as follows:

"National regulatory authorities should be able to impose access to active or virtual network elements used for service provision on such infrastructure if access to passive elements would be economically inefficient or physically impracticable"

Further, Article 61(4) of the EECC states:

"In those circumstances where access and sharing of passive infrastructure alone does not suffice to address the situation, national regulatory authorities may impose obligations on sharing of active infrastructure."

[23] See section 2 of this document.

It is clear from these examples that the European Commission considers that downstream remedies should only be applied when upstream remedies have been shown to have failed. CityFibre considers that the parallel introduction of unrestricted DPA and DFA is contrary to the EC's guidance and will harm investment incentives in the UK.

3.3.7 If market 3 was defined more narrowly, then the risk of harm would be reduced, but it should be remembered that BT has in the past offered regulated products and terms in unregulated areas, simply due to the ease of management in relation to billing systems and other systems and processes that would be complicated by differentiating terms and product specifications/availability by geography.

3.3.8 There is therefore a real risk that BT could decide to introduce dark fibre nationally, using the DFA remedy specification and terms. If that were to happen, then it is clear that this would cause real harm to investment incentives. In fact, Ofcom sets out clearly in its draft BCMR Statement for 2019 – 2021 why it would be harmful to investment incentives to impose the DFA nationally[24].

Setting the regulated dark fibre price using BT's costs

3.3.9 If Ofcom is concerned that not imposing DFA for this 5-year review period could result in consumer harm (perhaps due to lack of service-level competition as well as infrastructure-level competition), then it would be possible to introduce the DFA remedy in a manner that reduces harm to infrastructure investment incentives. This could be achieved by setting the regulated price for DFA at the level that could be replicated by a competitive provider using the unrestricted DPA remedy and pulling its own fibres between the relevant locations to provide point-to-point connectivity. Introducing DFA in this manner would assist CPs that wish to use DFA to deliver customer connections, but also safeguards the feasibility of builders of new fibre networks to compete with BT for that dark fibre business from other CPs and building new, modern full fibre networks in the process.

3.3.10 Ofcom's proposal, however is to set the price for DFA at BT's efficiently incurred costs. Due to the effect of BT's significant economies of scale and scope, BT's efficient costs of providing a dark fibre connection is likely to be substantially below that which can be achieved by a reasonably efficient operator (REO), competing with BT in the provision of the dark fibre connection (whether for retail or wholesale customers). In order to avoid irreparable harm resulting from premature imposition of a remedy that is a direct disincentive from investment in competing infrastructure, Ofcom could potentially achieve the 'best of both worlds' by introducing the DFA in parallel with the unrestricted DPA remedy, but ensuring that the remedy is priced such as to not disincentivise infrastructure investment.

3.3.11 It seems rash and short-sighted for Ofcom to insist on introducing the DFA remedy in parallel with the unrestricted DPA remedy AND price the DFA remedy at BT's efficiently incurred costs. CityFibre urges Ofcom to reconsider and adjust either the timing of the DFA remedy or, at least, the pricing of the remedy.

[24] Ofcom. (2019). "BCMR Draft Statement". Vol. 2. Page 203. Paragraph 10.47: *"Imposing access to dark fibre (in addition to unrestricted PIA) in those areas subject to competitive investment or potential future competitive investment could negatively affect current and future network investments and therefore impact the effectiveness of the upstream remedy".* Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/149339/volume-2-bcmr-draft-statement.pdf.

4 WLAMR specific issues

4.1 Ofcom's approach and objectives

4.1.1 As highlighted earlier in this document, the next market review period will be a significant time for competitive investment into network infrastructure. There has been a recent influx of competitive fibre deployment announcements from industry which are either set to take place and/or set to finish during this period[25], CityFibre has publicly stated its intent to roll out to 1 million premises by 2021, 5 million by the end of 2024 and has already begun deployment in 7 cities[26].It is thus vitally important that any charge control remedy Ofcom sets and implements during this time ensures the realisation of the aforementioned deployments and continues to incentivise competitive investment into full fibre infrastructure.

4.1.2 CityFibre agrees with and welcomes Ofcom's stated intentions to incentivise investment in full fibre networks to deliver broadband services across the UK, by BT and by competitive providers such as CityFibre. Some aspects of Ofcom's proposed remedies appear to be clearly designed to deliver on that objective, whereas others (remedies proposed and/or omitted) appear designed to carve out where investment should happen, assigning more than 30% of UK premises to a status of BT network monopoly[27] for the long term.

4.1.3 As set out in section 2 above, CityFibre does not agree with Ofcom's approach to defining the geographic markets and believes that market 3 should be significantly smaller than defined by Ofcom. CityFibre believes that there is significant scope for competitive investment in parts of what Ofcom has defined as market 3. The combination of the way market 3 is defined and the remedies proposed by Ofcom for market 3 will likely cause a reduction in overall investment during the period covered by this review (2021 – 2026), particularly by competitive providers targeting rural areas.

4.1.4 Additionally, the absence of explicit remedies to prevent anticompetitive pricing and other anticompetitive behaviour by BT either nationally or in the areas where competitive operators are or are planning to invest[28] is, however, a sign that Ofcom does not appear to appreciate the significance of the mere threat of BT acting anticompetitively on the perceived risk of the investments competitive providers are seeking to fund.

4.1.5 Whilst Ofcom makes explicit statements of wanting to incentivise investment in full fibre networks[29], and proposes some remedies in support of that objective, CityFibre is concerned that the remedy

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[25] Jackson, M. (2019) "Building UK: Summary FTTP Broadband Rollouts Investment". ISPreview. 9th May 2019. Available at: https://www.ispreview.co.uk/index.php/2018/04/building-uk-summary-fttp-broadband-rollouts-investment.html/2

[26] CityFibre. (2018) "CityFibre announces a £2.5bn investment plan to expand its full fibre network and unlocks the UK's next generation broadband". CityFibre Press Release. October 23 2018. Available at: https://www.cityfibre.com/news/cityfibre-announces-2-5bn-investment-plan-expand-full fibre-network-unlock-uks-next-generation-broadband/

[27] CityFibre understands that Ofcom will be encouraging service-based competition through access to the BT infrastructure in these areas. See: Ofcom. (2019) "Consultation promoting competition investment approach remedies". Page 20. Paragraph 3.3. *"In designing the proposed remedies for non-competitive areas, consistent with our duties we will have regard to the following objectives: (a) preserving the investment incentives faced by BT; (b) protecting customers against the risk of high prices;* ***(c) promoting retail competition, which will continue to be based on access to Openreach's network.*** [emphasis added] Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0018/142533/consultation-promoting-competition-investment-approach-remedies.pdf,

[28] CityFibre acknowledges that Ofcom proposes to continue the remedy to limit BT's ability to offer regional discounts. in potentially competitive areas (market 2), Ibid Page 18. Paragraph 2.34.

[29] Ofcom. (2018)'Regulatory certainty to support investment in full fibre broadband'. 24th July 2018. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/116539/investment-full fibre-broadband.pdf;

package is not complete and that Ofcom's approach is inconsistent and risks not optimising fibre investment as well as enabling BT to further entrench its position of dominance at the network level.

4.2 WLAMR Charge control remedies for potentially competitive areas

4.2.1 CityFibre welcomes Ofcom's approach to the charge control for this product market and Ofcom's understanding that it is important that prices are not regulated down further as this would cause additional harm to investment incentives.

However, CityFibre notes that the nominal price Ofcom projected in the WLAMR final statement was £12.06 per month[30] for MPF + GEA 40/10. [✂].

4.2.2 In CityFibre's previous response to the Wholesale Local Access Market Review (WLAMR), a concern was raised regarding the cost allocation mechanism Ofcom had used to calculate Openreach's cost, which ultimately formed the basis for an aggressive downward charge control for Openreach's VULA "anchor product". In particular, CityFibre raised its concern with the proposed (now current) 40/10 VULA product price being regulated down aggressively and ultimately disincentivising competitors to BT from investing in competing fibre infrastructure. CityFibre argued that Ofcom's remedy in the 2018 WLAMR was diametrically opposed to Ofcom's strategic objective of encouraging investment in new fibre infrastructure.[31]

4.2.3 As it remains Ofcom's explicit objective to encourage investment in full fibre networks by competitors to BT (as well as by BT), it would be rational for Ofcom to ensure that the regulated price for the anchor product is set at a level that can be replicated by an REO deploying full fibre infrastructure (consuming the unrestricted DPA remedy).

4.2.4 CityFibre accept the benefit of CPI-0% as it would keep prices stable in real, rather than in nominal terms, a requirement ever more important in light of the very unpredictable global and national market conditions that prevail at the moment.

4.2.5 However, CityFibre remains concerned that, [✂]

4.2.6 [✂]

See also: Ofcom. (2018) 'Consultation Promoting investment and competition in fibre networks'. Page 1. Paragraph 1.1Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0005/130001/Consultation-Promoting-investment-and-competition-in-fibre-networks.pdf ;
See also: . Ofcom. (2019) 'Consultation promoting competition investment approach remedies.' Page 1. Paragraphs 1.1-1.2.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0018/142533/consultation-promoting-competition-investment-approach-remedies.pdf, Ofcom. (2019). 'BCMR Draft Statement.' Vol. 2. Page 3, Paragraph 1.3.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/149339/volume-2-bcmr-draft-statement.pdf. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/149339/volume-2-bcmr-draft-statement.pdf.Ofcom. (2019) 'Consultation promoting competition investment approach remedies.' Page 1. Paragraphs 1.1-1.2.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0018/142533/consultation-promoting-competition-investment-approach-remedies.pdf, Ofcom. (2019). 'BCMR Draft Statement.' Vol. 2. Page 3, Paragraph 1.3.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/149339/volume-2-bcmr-draft-statement.pdf. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/149339/volume-2-bcmr-draft-statement.pdf.

[30] Ofcom. (2018) 'Wholesale Local Access Market Review: Statement – Volume 2.' Table 1.1. Page 3.

[31] CityFibre. (2017) "Wholesale Local Access Market Review and Duct and Pole Access". Paragraph's 8.1.1-8.1.7. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0010/105013/Cityfibre.pdf

4.2.7 [✂]

[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	

4.2.8 **Table 2 shows Openreach's monthly rental prices for its 'anchor 40/10 product' under the current WLAMR charge control and proposed WLAMR charge controls (CPI-0%)[32] for 2021-2026.**

	Potentially Competitive Areas							
	WLAMR 2018-21			WLAMR 2021-26				
Fiscal Year	**18/19**	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**
40/10	£5.80	£5.09	£4.99	£5.09	£5.19	£5.30	£5.40	£5.51
MPF	£7.12	£7.08	£7.07	£7.21	£7.36	£7.50	£7.65	£7.81
40/10 + MPF	£12.92	£12.17	£12.06	£12.30	£12.55	£12.80	£13.06	£13.32
CC	**CPI+X**			**CPI-0%**				

4.2.9 [✂]

4.2.10 [✂]

4.2.11 CityFibre believes that it is essential that Ofcom performs its own REO modelling to determine the appropriate price level at the start of the 2021 charge control, rather than relying on the unlikely assumption that the prices at the end of the current control will reflect REO costs.

How to value the incremental benefits of fibre over copper

4.2.12 In paragraphs 5.17 – 5.20 Ofcom explains that it believes that it would be wrong to set the same price for the anchor product (40/10 Mbps) on the fibre network as on the copper network. They explain that fibre offers some additional benefits over and above copper and that if the same regulated price was set for the anchor product on both network it would undermine investment incentives.

[32] [✂]

4.2.13 Ofcom sets out three additional benefits of fibre over copper, with the same headline speed:

a) A slightly higher and more stable speed.
b) Fewer faults and so will deliver a more reliable service for consumers.
c) Access seekers will benefit from cost-savings in the value chain as a result of delivering a more reliable service to customers.

4.2.14 With regard to point (a) we assume that Ofcom means that the actual speed experienced by users on fibre will be higher and more stable that the same speed delivered over copper, even though the headline advertised speed is the same.

4.2.15 CityFibre is concerned that Ofcom's approach is over simplified and does not take account of the benefits other than speed that Ofcom refers to in para. 5.19. We agree with Ofcom that fibre offers additional benefits other than speed and believe that Ofcom should invest more in establishing just what it is that consumers value about fibre so that the price difference it allows it based on better evidence.

4.2.16 As Ofcom points out, the improved quality of service is made up of several components:

I) The actual speed of access compared with the headline advertised speed;
II) Speed stability, which can be presented as variation around the average speed; and
III) Reliability, or number of faults.

Establishing the increased utility of fibre can be done through a number of well-known research techniques that are widely used by marketers looking to establish the optimum price for their product.

4.2.17 Foremost amongst such research techniques is conjoint analysis. This methodology seeks to establish the trade-offs consumers make between the various features of the products and their prices. We would expect that consumers would have the same utility for the same headline speed offered on fibre and copper, but obtain more utility from the lower variation from headline speed provided by fibre, the speed stability and the greater reliability of fibre. An effective research programme could establish consumers' increased utility for these features.

4.2.18 Without prejudice to the results of any such survey, we would hypothesise that consumers may place a constant value on the increased reliability and stability of fibre and the variable utility linked to the difference in actual average speed. This could be presented as the equation below:

$$WTP_f = WTP_{cu} + \alpha + \beta_s$$

4.2.19 Where Uf is the utility of fibre, Ucu is utility of copper, α is the constant value for reliability and stability, and βs is the coefficient for the utility of each additional megabit per second of speed.

4.2.20 This proposal seeks to establish the value consumers place on the additional reliability of fibre and speed stability. It is our view that these are important benefits to capture and should not be left out of the analysis. By only assessing the value consumers place on increased speed, we believe that Ofcom is missing very important drivers of the increased value of fibre access and underestimating that value if only measuring the value of the additional speed.

4.3 WLAMR Charge control remedies for non-competitive areas

4.3.1 CityFibre understands Ofcom's proposals to mean that regulation in market 3 will not involve anchor pricing, but that all prices will be regulated down to cost by means of charge controls and a new regulatory asset base (RAB) costing methodology.

4.3.2 Charge controls would be applied to copper/FTTC services up to 80Mbit/s, and would not allow pricing freedom for above 40/10 products as is the case in market 2 (although it is unclear from the

proposals whether the pricing gradient by speed would be cost-based or based, for example, on existing price ratios). We assume that the charge controls would be based on a CPI-X% formula, with "X" set to ensure that by the end of the regulatory period BT recovers only its costs, excluding any HON adjustments (for market 3, Ofcom proposes that the HON adjustment should not be included, and that the price of the copper and GEA services up to 80 Mbit/s should be reflective of BT's costs).

4.3.3 There are, however, several factors which would differentiate BT's unit costs in market 3 from those in market 2: geographic line density would be lower than the national average, increasing dig distances and hence unit costs; market share would be higher, increasing economies of scale and reducing unit costs. While these two factors act on the price in opposite directions, it is not clear that they would cancel out, and without detailed analysis there is no evidence that the 2021 40/10 anchor price for market 2 would equate to a cost-based price for market 3.

4.3.4 We also note that BT's market share may be considerably less than 100% due to competition from fixed wireless technologies as well as competitive providers already investing in fibre networks in areas that Ofcom considers to be too small to constitute separate markets and thus become subsumed in the overall market 3.

4.3.5 We understand that Ofcom will not create a separate RAB model for market 3, but make adjustments to the national costing model (which we believe combines FAC for copper components and LRIC for fibre components). Specifically, we understand that Ofcom plans to remove the HON adjustment, make adjustments to costs for the increased average cost to serve premises and an assumption of a higher market share for Openreach in market 3, compared with market 2.

4.3.6 It is also very possible that Ofcom will impose an up-front one-off price 'P^0' adjustment to reduce the cost-based price for broadband services up to 80/20 in market 3. In fact, if Ofcom wants to effect an immediate incentive for Openreach to deploy fibre in market 3, then an up-front downward adjustment to the prices for FTTC-based services would be essential. Given the lack of clarity on Ofcom's plans for the market 3 charge control, it is highly uncertain what the FTTC price level would be in market 3.

4.3.7 For FTTP and G.fast services pricing flexibility would be allowed, and BT would be permitted to recover the costs of its fibre investments across both copper and fibre-based products via the RAB. In this case, the RAB value (forecast and agreed in advance with Ofcom) would set the upper limit for the broad basket of fibre services. Ofcom believes that, with the proposed market definitions, the resulting prices would be no higher than those in the competitive area (although it is not clear whether that refers to the 40/10 fibre anchor price after copper-switch-over or to the FTTC-based 40/10 anchor price), making allowance for public funding interventions such as BDUK, R100, Gigabit Voucher Scheme and LLFN.

4.3.8 In Section 5 of the consultation, Ofcom proposes a higher charge for the 40/10 service when offered over a fibre network[33] but although it appears that Section 5 is intended to apply to both competitive and non-competitive areas, we believe that this approach cannot be relevant to the non-competitive areas, as there is no 40/10 anchor price in that market and it would not be consistent with the RAB methodology.

4.3.9 Reviewing the pricing approach set out above and comparing it with the anchor pricing approach for market 2 it seems that, even if the final unit cost level in market 3 (once all of market 3 has had fibre installed) coincidentally turns out to be similar to that in market 2 after copper switch-over, it is likely that the two cost levels will diverge substantially between 2021 and when market 3 fibre deployment

[33] Ofcom. (2019) 'Consultation promoting competition investment approach remedies.' Page 38. Paragraph 5.20.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0018/142533/consultation-promoting-competition-investment-approach-remedies.pdf,

has been completed. In fact, the completely different approaches would make it virtually impossible for costs to be very similar over time.

4.3.10 If BT invests in new fibre in only a small number of locations in market 3, and the costs of that investment is distributed across all copper and fibre connections in market 3, then it is very possible that the average cost for fibre connections in market 3 will be lower than in market 2. This is especially the case if Ofcom imposes a significant starting adjustment as part of the market 3 charge control, to bring the current nation-wide VULA price down to a RAB level.

4.3.11 Whilst there is a 'first principles' argument that can be made for cost-reflective pricing in different parts of the country we note that the principle of geographic averaging has been a constant feature of the regulatory system since 1984 and deviating from this may have some profound social, economic, and political impacts. It is not at all clear that BT/Openreach will want to bear the reputational impact of this alone, and we are therefore wary of this approach having some marked unintended consequences. As a first step therefore CityFibre considers it imperative that Ofcom reviews the impact of the pricing in markets 2 and 3 not being aligned for significant parts of the review period. It would be dangerous to not do so given these potentially substantial medium-term impacts.

RAB-related issues

4.3.12 As mentioned in section 2 of this document, the presupposition of non-competitive conditions in market 3[34] informs the objectives Ofcom has set itself for this market and the remedies designed to achieve those objectives. CityFibre believes that there is a significant risk that the current market 3 definition includes areas which are in fact potentially competitive and that the remedies selected by Ofcom for market 3 make the presumption of no development of competition a self-fulling prophecy.

4.3.13 As described above, it seems likely that Ofcom would make a significant initial downward adjustment to the FTTC price in market 3, giving Openreach the incentive to deploy fibre in order to bring the market 3 price up to or near the level for equivalent services (presumably Ofcom is focusing on the 40/10 price level only) in market 2.

4.3.14 There seems to be significant potential for Openreach to game Ofcom's proposed market 3 charge control, in that Openreach would be able to deploy fibre in a small number of locations in market 3 where the economics are close to areas in market 2 (that is the economic case for fibre deployment is nearly as good as for market 2 locations) and benefit from the near guaranteed rate of return afforded by the RAB approach and its ability to recover fibre costs across both copper and fibre-based products. This is a 'real world' concern because of the potential shape of public procurements by local authorities of full fibre connectivity. Many local authorities are seeking to bundle into connectivity contracts both urban centres in a local authority area and outlying peripheral villages. Thus, CityFibre can well envision scenarios where the shape of public procurement requires it to straddle the Market 2 and Market 3 boundary in order to obtain public 'anchor tenancy' contracts[35].

[34] That is, that there will be no infrastructure competition of note.

[35] Three recent LFFN public procurements in which CityFibre was the successful bidder highlight the importance of this issue: West Sussex (https://www.cityfibre.com/news/cityfibre-chosen-in-west-sussex/), Suffolk (https://www.cityfibre.com/news/mll-telecom-partner-cityfibre-selected-provide-full-fibre-network-public-sector-sites-region-speeds-1gps-minimum/), and Highlands (https://www.cityfibre.com/news/digital-transformation-lined-highland-communities-following-full-fibre-deal/).
In each case, the procurement straddles what would, in Ofcom's proposed market segmentation, be a mix of market 2 and market 3 areas. The Suffolk contract covers ten locations, Ipswich, Bury St Edmunds, Lowestoft, Haverhill, Felixstowe, Woodbridge, Sudbury, Stowmarket, Mildenhall and Newmarket, of which we estimate only Ipswich would clearly fall into market 2 based on Ofcom's proposed market segmentation. Similarly, the West Sussex procurement straddles nine communities, eight of which we estimate would fall

4.3.15 This advantage would enable Openreach to firmly close off the parts of market 3 (as currently defined by Ofcom) that are potentially competitive, as it would result in a price only marginally above the FTTC RAB cost, which would not be replicable by any competitors.

4.3.16 Having thus grabbed the potentially competitive areas in market 3 and foreclosed them to competition, Openreach would be able to decide when/whether it would prioritise fibre deployment in the remainder of market 3. It seems commercially more pressing for Openreach to deploy fibre in parts of the country where competitive investment is likely, as its market share and dominance is not threatened in the lesser attractive parts of market 3. CityFibre does not believe that the prospect of a near guaranteed rate of return in market 3 would be sufficiently attractive for Openreach to prioritise those areas above areas in market 2 where competitive investment is likely to happen or is already in progress.

4.3.17 As we believe that it is unlikely that Openreach would commence a comprehensive fibre deployment programme in market 3, which would see the RAB-based charge increase substantially across the whole market, it is in our view very likely that the RAB-based charges in market 3 would be below the FAC/LRIC-based 40/10 anchor price in market 2. This wholesale pricing difference across what the public (and politicians) would consider arbitrary boundaries would cause a retail price tension which could result in forcing down prices in market 2 and thus having a very negative impact on investment incentives in market 2.

4.3.18 In summary, CityFibre has severe concerns about Ofcom's proposed RAB approach for the following reasons:

- The likely significant up-front reduction to the FTTC prices will make Ofcom's assumptions of market 3 being not prospectively competitive a self-fulfilling prophecy;
- Openreach could game Ofcom's proposed approach to its own benefits and against the interests of the consumers and citizens in the market 3 areas; and
- Prices of fibre-based services in market 3 could thus be significantly lower than in market 2, which could cause a spill-over effect and cause harm to investment incentives in market 2. This would be particularly the case where, as described above, public contracts involve the bundling of what are, in Ofcom's terms, market 2 and 3 areas in a single public procurement for an entire local authority area.

4.3.19 CityFibre believes that a differentiated costing approach between markets 2 and 3, could potentially work if the following principles were applied:

- Market 3 was defined to include only the 10% least economically attractive locations in the UK, thus removing Openreach's opportunity to get near-guaranteed return on investment that are likely to be commercially viable anyway, and retaining investment incentives for competitive providers to provide services in the locations/premises that would now become part of market 2; and

- Fibre costs would be recovered from fibre-based services only, so as to avoid spill-over effects and harm to investment incentives in market 2.

Although the definition of a smaller market 3 would likely result in a higher average cost of servicing the premises in that market, Government is actively looking at targeting subsidies in that 10% least economically attractive area, so it is feasible that this additional funding could result in a cost base similar to that in market 2 (which would increase slightly by the inclusion of the remainder of what is currently defined as market 3).

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below the 20,000 property count: Bognor Regis, Burgess Hill, Chichester, Crawley, Haywards Heath, Horsham, Littlehampton and Shoreham. The Highlands procurement covers Inverness (market 2) along with three communities, Fort William, Thurso and Wick which have respective population counts of 10,459, 7,933 and 6,954. It should be noted that LFFN procurement does not involve a subsidy of actual construction costs, merely the cost to the local authority of specifying and conducting the procurement.

4.4 Geographic discounts

4.4.1 CityFibre has made several submissions to Ofcom over recent years setting out the risk and impact of BT introducing discounts with the explicit purpose of preventing competitive network investors from achieving critical mass penetration on their new full fibre networks[36] [37].

4.4.2 In this consultation Ofcom proposes to overcome one of the weaknesses in the current remedy, namely that the current remedy applies only to copper-based services, to G.fast or full fibre connections. CityFibre welcomes Ofcom's move to now include G.fast and full fibre services under the scope of the geographic discounts remedy.

4.4.3 CityFibre is, however, disappointed that Ofcom does not propose to overcome other significant weaknesses in the current remedies including (but not limited to):

- That the current remedy does not prohibit BT from introducing geographic discounts, simply requires that BT justifies discounts with costing information. If, for example, BT were to introduce geographic discounts covered Coventry (where CityFibre is currently deploying an full fibre broadband network), BT would (as we understand the remedy) have to justify that the costs in Coventry are lower than the national average and we fully expect that BT would be able to substantiate such a claim. If, on the other hand BT could only introduce geographic discounts if it applied those discounts to all locations where the cost base is the same or lower than the target location, then that would reduce BT's incentives to introduce targeted discounts and CityFibre considers that this would be a substantially more effective remedy.

- That the current remedy applies only to rental charges, not to installation charges. In its response to Ofcom's recent BCMR consultation the IIG demonstrated clearly that BT primarily targets its discounts at installation charges[38] and as such, a remedy limiting geographic discounts for rental charges only is unlikely to act as a significant constraint on BT's behaviour. CityFibre encourages Ofcom to include installation charges in the geographic discounts remedy.

4.4.4 CityFibre and other competitive network operators are investing now and are having to deal with BT's discounting initiatives in real time. By 2021, a significant amount of damage could have been done to new market entrants (and consequently to the appetite for future investment), by BT's heavy geographic and/or installation charge discounts. CityFibre believes that Ofcom needs to consider amending the remedy applied in the current market review period as soon as possible and by January 2020 at the latest. We believe that Ofcom has the powers (and duty) to modify its existing remedy in the light of rapidly changing market circumstances. We understood Ofcom's limitation of the scope of the remedy to be because (at the time the remedy was proposed) there was limited evidence of head-to-head deployment of competing full fibre networks in the review period (2018-21) and Openreach's stated intentions were still to principally upgrade its network to offer G.fast FTTC. Since then, Openreach has made a series of public announcements that have shifted the balance of its activities towards a much greater proportion of FTTP deployment and a reduced focus on G.fast.

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[36] See Annex 4 for a copy of CityFibre's paper submitted to Ofcom on September 12th 2017.

[37] See CityFibre's response to Ofcom's consultation on geographic discounts for G.fast services: https://www.ofcom.org.uk/__data/assets/pdf_file/0022/110992/CityFibre.pdf and CityFibre's response to Ofcom's WLAMR response in June 2017: https://www.ofcom.org.uk/__data/assets/pdf_file/0010/105013/Cityfibre.pdf – paras 6.4.1 to 6.4.16.

[38] See Paragraph 7.4.8 of the IIG's response to the BCMR and PIMR consultations: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/136638/IIG.pdf
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.

Thus, objectively, the situation has changed and this both justifies and necessitates an immediate reconsideration of the scope of the remedy imposed[39].

4.4.5 In addition to the flaws and limitations of the current geographic discounts remedy, CityFibre is very concerned at other potentially anticompetitive actions that BT could engage in at this very important time for competitive network investors. We address those in section 6 below.

[39] Article 69(6) of the European Electronic Communication Code, provides specifically for adjustment of remedies during the term of a review period, especially if market circumstances change. Although the WLAMR Statement was issued under the current regulatory framework, CityFibre is not aware of any provision in this framework that prevents an NRA for doing in-term reviews of remedies.

5 Issues common to BCMR and WLAMR

5.1 Overarching policy issues

Introduction

5.1.1 The driver behind Ofcom's decision to align the timing of the WLAMR and the BCMR processes, and to ensure that regulation in the two markets provides effective, efficient and consistent investment incentives, is Ofcom's revised strategy of encouraging investment in new full fibre networks, and Ofcom's recognition that competitive providers need access to the same economies of scope and scale that BT enjoys.

5.1.2 CityFibre welcomes this move. In addition to ensuring that Ofcom's interventions in the BCMR and the WLAMR do not conflict, there are other aspects of the market which influence the incentives on all parties significantly (that is, both BT and competitive network investors) and which, if addressed, could both speed up full fibre network deployment and increase the number of UK consumers and citizens that benefit from both competition and full fibre networks.

5.1.3 The following issues fall into that category and CityFibre believes that Ofcom would be remiss were it not to consider each of them seriously as part of the 'all access' review and remedies:

- Encouraging the deployment of open access wholesale-only networks;
- Enabling 'mutualisation' of access networks or at least part thereof;
- Ensuring that Openreach has the right incentives to offer upstream access to facilitate full fibre network deployment across the UK; and
- Prohibition of anticompetitive behaviour by BT (the SMP operator).

Encouraging open access wholesale-only networks

5.1.4 Whilst there is clearly value to consumers and citizens from the deployment of full fibre networks by vertically integrated providers, the resulting increase in competitive intensity from such investment is, by its very nature, to add one provider to the choice available to consumers (and often only at the retail level). From investment in open access wholesale networks, however, a number of wholesale and retail competitors will likely be introduced. Thus, to maximise the economic benefits per £ invested in new networks, there are clear advantages from open access wholesale-only networks.

5.1.5 There are already vertically integrated networks in the UK, including BT's. We describe below in section 6 why we do not consider Openreach has the incentives of an open access wholesale-only provider, and outline the measures Ofcom could take to remedy that situation.

5.1.6 Encouraging open access wholesale-only network investment is economically efficient for UK plc. CityFibre is not aware of any significant drawbacks from a policy of encouraging such networks and, as indicated above, there are significant potential benefits.

5.1.7 To encourage investment in open access wholesale-only networks, Ofcom should consider the following initiatives:

- Limiting access to BT's ducts and poles to providers that undertake to offer open access to the networks they build. This was proposed by CityFibre in 2016 when considering how to manage access to the scarce resource that is the existing physical infrastructure operated by BT. This could be achieved through the introduction of contractually binding terms in the PIA contract.
- Differentiate the regulated price for using PIA services, depending on whether the provider commits to providing open access to the networks constructed using the BT's physical infrastructure. This could also be enforced through the contractual terms for PIA services.

- Make an early statement of intent as to how Ofcom would implement the new 'wholesale only networks' provision in the EECC (which the Government has said it intends to implement into UK law, regardless of the eventual form of Brexit). That provision clearly envisages lighter touch regulation of wholesale-only networks in the event that these networks attract a finding of SMP. Whilst the objective circumstances in which alternative networks could be found to have SMP are clearly some distance into the future – and likely outside the timescale of the AAMR – this would nonetheless orient the market towards adoption of the wholesale-only model as a preferable form of market structure that eliminates the risks and complexities of continued policing of discrimination and margin squeeze between upstream and downstream markets.

5.1.8 CityFibre does not of course suggest that vertically integrated providers should not be able to build new full fibre networks. But the reality is that any resultant infrastructure market of closed, vertically integrated providers would be highly concentrated and would create ongoing competition problems even if narrowly successful in Ofcom's own terms. BEREC made the case in the course of the EECC negotiation that the regulatory toolkit needed to be expanded to grant greater powers for NRAs to police highly concentrated infrastructure markets noting their tendency towards oligopoly conditions and tacit co-ordination Specifically BEREC stated:

"The draft Code does not address non-competitive oligopolies of this sort and the Commission has argued that as a matter of principle access regulation in oligopolistic markets should be minimal. However, this blanket approach creates the risk that NRAs will not have adequate tools to address competition concerns in concentrated markets. Ultimately this leads to higher prices and lower investment, innovation and consumer welfare."[40]

5.1.9 On analysis this problem is really one that arises where vertically integrated undertakings tacitly co-ordinate their behaviour in the downstream market. Wholesale only infrastructure providers that allow for greater degree of competitive entry in the downstream market eliminate much of this risk. Ofcom should encourage the most economically efficient manner of providing competition and full fibre networks to the maximum number of consumers and citizens in the shortest time possible.

Enabling mutualisation of network elements

5.1.10 CityFibre has submitted to Government and Ofcom its views in relation to the need to overcome certain barriers to the deployment of new full fibre networks, and the risk of creating new barriers by the way in which remedies such as the DFA remedy are designed.

5.1.11 An example of a new barrier resulting from remedy design, is the current need to providers to deploy new fibre connections from BT's poles to customer premises each time a customer changes supplier. At the time of a customer switching supplier the existing supplier must remove its fibre and the new supplier must install a new fibre connection to the customer's premises.

5.1.12 This is inefficient, it significantly increases the risk of customers service downtime – not only for the customer switching supplier, but for all customers serviced from that pole, and it increases the costs to all providers.

5.1.13 An example of an existing barrier to competition that could be overcome by mutualisation is the need for providers to replace in-house wiring in multi-dwelling units (MDUs), when the existing wiring would likely meet the needs of the new provider.

5.1.14 We attach in Annex 1 a paper shared with Ofcom on 18th May 2019 that sets out more fully the issues that could be overcome, were Ofcom to facilitate or mandate mutualisation of certain network elements.

Ensuring that Openreach is incentivised to provide upstream access

[40] file:///C:/Users/gitas/Downloads/7090-updated-press-release-on-berec-papers-on_15.pdf

5.1.15 It is widely accepted in economics that a vertically integrated firm with market power in the upstream bottleneck has the incentive and ability to foreclose downstream markets to competition. A remedy to address this problem is to separate the upstream business from the downstream elements such that the upstream entity no longer has the incentive to discriminate, which should result in a more level competitive playing field downstream. This was also the original motivation of Ofcom to impose functional separation and behind the recent change to legal separation. Ofcom's proposal document to establish legal separation was entitled "Strengthening Openreach's strategic and operation independence".

5.1.16 This purpose is summed up in Tropina et al (2010), which states: "Regardless of the form [of separation] that is adopted the motive is the same, namely, to resolve the tensions that exist within industries characterised by containing both competitive and non-competitive elements."41

5.1.17 Cadman (2010) describes functional separation as a means to implementing EOI rather than an end in itself42 and de Bijl (2005) says that the key argument in favour of separation is that it eliminates the vertically integrated dominant firm's incentives to raise rivals' costs through non-price discrimination43.

5.1.18 However, CityFibre is concerned that the effect of the remedies proposed by Ofcom is that Openreach will be responsible for supplying PIA, DFA and CI products. It will, therefore, once again be vertically integrated: selling products at all levels of the value chain to the very firms with which it competes downstream. Openreach is already in a similar position to this in the WLA market where it has been selling PIA for a number of years, although there has been very little take up of the product.

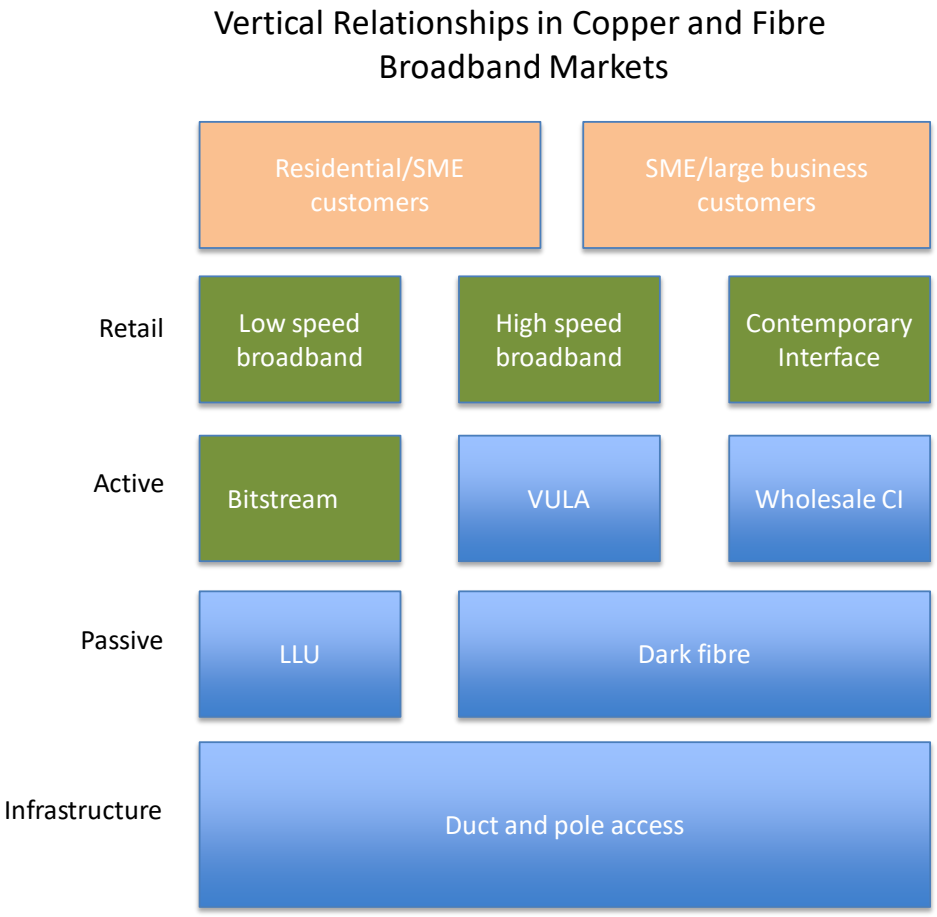
[41] Tropina, T., Whalley, J., & Curwen, P. (2010). Functional separation within the European Union: Debates and challenges. Telematics and Informatics, 27(3), 231-241.

[42] Cadman, R. (2010). Means not ends: Deterring discrimination through equivalence and functional separation. Telecommunications Policy, 34(7), 366-374.

[43] De Bijl, P. W. (2005). Structural separation and access in telecommunications markets. *Journal of Network industries*, (2), 95-114.

5.1.19 What this means is that the incentives to discriminate, which functional and legal separation were supposed to remove from BT, will now be transferred to Openreach and will be just as strong as those incentives were before the TSR. The illustration below of the different levels in the fixed broadband market, shows that Openreach (in blue) is active in three out of four levels.

Blue boxed indicate where Openreach is active



5.1.20 CityFibre is extremely concerned about this apparent reversal of policy by Ofcom, which led the world in the separation of the upstream business unit that controls the enduring economic bottleneck. Coming so soon after agreeing the legal separation of Openreach in the DCR, we now see Openreach as being given the very incentives to discriminate that separation was supposed to remove.

6 Remedies to prevent anticompetitive behaviour

6.1 Price floors

6.1.1 CityFibre has on a number of occasions submitted analysis to Ofcom arguing the benefits of price floors and showing that the potential economic costs of imposing price floors would be significantly outweighed by the benefits from doing so[44]. This is because, even if BT were not planning to engage

[44] CityFibre. (2017) 'Wholesale Local Access Market Review and Duct and Pole Access.' Page 34, Paragraph 6.4.12 and 6.4.16.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0010/105013/Cityfibre.pdf.

in anticompetitive pricing, the existence of a clear rule-set limiting its scope to do so reduces investment risk and would make it easier and quicker for competitive providers to finance and deploy full fibre networks across the UK, including in many parts of what Ofcom is presently proposing to categorise a non-competitive areas.

6.1.2 We have highlighted to Ofcom on several occasions that Ofcom's own analysis of how and when to apply different approaches to regulatory costing and pricing[45] states clearly that where the market is immature (as is the case for full fibre networks) and Ofcom wants to encourage investment by competitors, it is appropriate to impose price floors to prevent the incumbent from foreclosing the market to competitive investment.

6.1.3 In our response to Ofcom's BCMR response consulting in January 2019, we set out a number of practical options that Ofcom could adopt to reduce the risk of BT engaging in anticompetitive pricing[46], recognising that it would take time to develop a full price floor model and solution, but Ofcom has not engaged positively with these proposals at all. This is despite Ofcom's stated objective of wanting to encourage investment in competitive network infrastructure.

6.1.4 Given the time between now and April 2021, Ofcom has an opportunity to investigate the most appropriate measures to reduce the potential for BT engaging in anticompetitive pricing practices. CityFibre is willing to commit considerable resources to work with Ofcom to build the remedy set for this purpose and is confident that other investors in competitive network infrastructure would also participate actively. We are keen to understand whether Ofcom's refusal to act on this issue arises because Ofcom considers it does not have the legal ability to impose such rules (despite previous commentary suggesting otherwise), or because Ofcom simply does not see the need. If the former, CityFibre considers that the legal arguments should be publicly aired and, if necessary, a case can be made for an extension of Ofcom's powers via legislation. What is clearly quite unsatisfactory is for such matters to be subject only to resolution under competition law, which Ofcom's own previous experiences (notably the Whistl case in the postal sector) suggest is an ineffective solution to prevent anti-competitive practices successfully driving competitors from the market.

6.2 Volume discounts and loyalty schemes

6.2.1 CityFibre has noted before, in our response to the BCMR, that it is concerned with some BT pricing policies, in particular for mobile backhaul circuits, that appear to provide anti-competitive discount schemes.

6.2.2 The economics of using volume discounts as a means to effect a predatory price or an exclusive deal are well established. Examples of such practices include:

- Providing a rebate on sales once a threshold volume or value has been reached, such that the marginal price on sales above the threshold is negative. This was the case in the famous Michelin I case[47] . Here Michelin agreed a threshold sales volume with independent retailers and once that level was reached in provided a rebate on sales above that volume, meaning the marginal price of additional tyres was negative. The independent retailer had no incentive to buy from other tyre companies as those sales would not count towards the threshold agreed with Michelin.

CityFibre. (2019) 'Business Connectivity Market Review and Review of BT's Regulatory Financial Report: Response submitted by CityFibre Infrastructure Holdings.' Page 16 -18, Section 9.1.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/136629/CityFibre.pdf.
and G.fast pricing responses

[45] Ofcom. (2013) 'Cost Orientation.'
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0018/63261/cost_orientation.pdf.

[46] CityFibre. (2019) 'Business Connectivity Market Review and Review of BT's Regulatory Financial Report: Response submitted by CityFibre Infrastructure Holdings.' Section 9.
Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/136629/CityFibre.pdf..

[47] Lyons, B. (2009). *Cases in European Competition Policy*. Cambridge University Press.

- A similar scheme was introduced by Post Danmark in relation to bulk mail and was applied to mail services over which it had a monopoly and those where it faced competition. This is explained in the judgement of the European Courts of Justice: *"At the beginning of the year, Post Danmark and its customers concluded agreements setting out estimated quantities of mailings for that year. The rebates were granted and invoicing took place periodically on that basis. At the end of the year, Post Danmark made an adjustment where the quantities presented were not the same as those in the initial estimate. The price of mailings for each customer was adjusted at the end of the year, with retroactive effect from the beginning of that same year, on the basis of the quantity of items of mail actually sent. The rebate rate finally applied was thus applicable to all mailings presented during the period concerned and not only to mailings exceeding the quantity initially estimated. In the same way, a customer whose volume of mailings proved to be lower than the quantity estimated had to reimburse Post Danmark."* The effect of this pricing scheme was to foreclose the market to competitors as the customer had no incentive to use an alternative supplier for even those mail items that were subject to competition.

6.3 Duct co

6.3.1 For Ofcom's ambition of multiple competing fibre networks to become reality[48], builders of alternative networks are going to be reliant on duct and pole access (DPA) wherever it is available to reduce the capital costs of building the network. DPA is going to be an increasingly important part of the market. This is not surprising given that some 70 – 80% of the cost of building a network is accounted for by civil engineering. This cost can be avoided for at least some of the network through access to existing physical infrastructure.

6.3.2 The major problem that CityFibre sees is that Openreach will be providing DPA both to itself[49], which it uses to provide passive and active products, and its rivals who sell these services in competition with Openreach. As we have explained above, this structure fundamentally undermines the entire raison d'etre for the legal separation of Openreach.

6.3.3 As a hypothetical example, suppose Openreach is supplying DPA to CityFibre in a particular city, knowing that CityFibre will use those ducts or poles to lay their own fibre to provide either dark or lit fibre products to a retail ISP. As Openreach is active at several layers of the value chain, it could also be seeking to provide fibre access products to the same ISPs. It therefore has an incentive to behave in a discriminatory manner towards CityFibre, making it difficult or more expensive for CityFibre to access the Physical Infrastructure that Openreach itself uses to build fibre access products. This discrimination could be through price or, more likely, non price means, such as delaying access to the ducts or offering poorer quality terms. At the extreme, Openreach could foreclose the market for downstream wholesale access products to its rivals.

6.3.4 The very fact that Openreach is in a position to do this could deter investment by rivals. As a parallel, when Ofcom conducted the Telecoms Strategic Review in 2004/05, it became clear that the very possibility of discrimination was sufficient to deter investment in downstream markets by rivals. It was only once Equivalence of Input, supported by Functional Separation, was introduced that rival operators began to invest in access products based on LLU.

6.3.5 It is our view that there is a clear and straight forward remedy that could deter such behaviour, and this remedy is well known to Ofcom: the separation of the physical infrastructure into a separate entity and placing constraints on that entity so that it does not have the incentive to harm non-BT players because it does not see them as rivals in the same downstream markets. Separation of physical infrastructure into a "duct co" would give rivals the confidence that they are unlikely to be

[48] And even for ensuring that full fibre networks are deployed in as many aprts of the country as possible without the need for Government subsidies.
[49] Although we note that Ofcom is not imposing an EoI remedy on Openreach and as such Openreach does not consume the DPA product.We believe it is important that EoI or something very close toit is established for DPA as soon as practicable.

harmed by discriminatory and exclusionary behaviour by Openreach. The creation of a separated duct co, proving DPA on equal terms to all downstream operators could give the same fillip to investment in rival infrastructure as the creation of Openreach as functionally separated entity did to access based on LLU.

6.3.6 It is our view, therefore, that Ofcom should seriously consider making such a move.

6.3.7 Whilst the introduction of DuctCo seems like an obvious and logical longer term solution that could form the basis of the 2021-2026 remedies, the immediate, short-term priority remains to drive near-term improvements in the PIA product. The very fact that Ofcom was seriously considering a DuctCo option might spur Openreach to deliver the 'Day 2' improvements to PIA which industry has demanded as essential to allow PIA to be used in scale, including relevant systems development and the outstanding SLAs and SLGs for aspects of PIA such as overhead pole Network Adjustments. Ofcom should set a deadline for these improvements ahead of its second consultation on 2021-2026 remedies – for example, requiring improvements by the end of Q3 in this calendar year – in order to focus Openreach's efforts on delivering the necessary improvements

6.4 Competition issues in the mobile backhaul market

6.4.1 CityFibre has made numerous submissions to Ofcom over the past several years on the subject of competition problems in the mobile backhaul, more specifically the consequences of restrictive agreements practiced by BT Wholesale (BTW) in its supply of mobile backhaul services to mobile network operators (MNOs)[50].

6.4.2 CityFibre has explained the importance of mobile backhaul contracts for anchoring entry into new towns and cities for a new provider of full fibre networks, especially a wholesale-only provider that does not have an existing downstream customer base, that it can transfer across to the new network. Although we do not have copies of the restrictive contracts[51], we have learned a lot about them over the years and it is clear that their effect is to loch MNOs in to the procurement of the vast majority of their mobile backhaul circuits from BTW.

6.4.3 CityFibre has repeatedly asked that Ofcom launch an investigation into these contracts to determine whether they do indeed have provisions that can give rise to this effect. In the most recent BCMR, just concluded, Ofcom concluded that the supply of mobile backhaul circuits by BTW is downstream from the BCM, despite Ofcom also arguing that mobile backhaul circuits are very much part of the BCM, rather than a separate market. Given that BTW is understood to provide the very large majority of all mobile backhaul circuits in the UK, it is difficult to reconcile those two positions and CityFibre is concerned that Ofcom may be intentionally not engaging with this issue.

6.4.4 We will not restate our concerns in relation to the mobile backhaul market in this response, but set out submissions we have made in recent submissions to Ofcom in Annexes 2 and 3.

[50] See Annexes 2 and 3 for further detail
[51] As they are confidential.

CityFibre

Annex 1

24th May 2019

Access Network Mutualisation
CityFibre's response

Background

Ofcom has existing powers to impose regulation on access network providers to require sharing of network elements. These powers are separate to the SMP regime. The powers are likely to be enhanced should the European Electronic Communications Code (EECC) be transposed into UK law, as the Government currently intends.

Other Member States, notably France, already have in place 'mutualisation' rules that require that certain access network elements can be shared (in effect, their use gifted) to other providers when a customer switches from one network provider to another. From our understanding, this relates to in-building wiring in MDUs but also can extend further back into the network to the 'first point of concentration' (which might be a break-out point more distant from the end-user, such as a junction box or street cabinet).

Ofcom has asked CityFibre along with other network providers for their early views on the potential salience of such rules in a UK market context.

CityFibre's framework of analysis

CityFibre builds open access full fibre networks serving a variety of downstream markets including residential broadband consumers. Our underlying interest is in ensuring that full fibre networks can be rolled out as extensively as possible at the lowest possible cost.

CityFibre's starting point, which we recognise is not shared in its entirety by Ofcom, is that duplication of passive network elements (both civil infrastructure and dark fibre) is not necessary to deliver a competitive and dynamic full fibre market. We believe that some degree of passive infrastructure sharing is both necessary and desirable, in order to maximise the footprint of full fibre rollout at the lowest possible cost. We also think there are significant negative externalities and inefficiencies, including potential consumer harms, that arise from an unalloyed policy of end-to-end fibre infrastructure replication. Our framework of analysis therefore starts from a perspective that some degree of network-sharing is desirable and should be encouraged through the regulatory regime. To the extent that this may necessitate a symmetrical regulation regime that applies access obligations to us along with other providers, we are comfortable with this in principle, subject of course to the caveat that any such regime would need to be proportionate and allow the firm that deploys the shareable asset to make a return on its initial investment.

The 'PIA pole-top problem'

Ofcom has now established a strengthened regime for duct and pole sharing. Our early experience of seeking to make use of DPA on overhead poles strengthens our view that some degree of dark fibre sharing may be necessary.

At present, under the Openreach PIA product, where CF installs fibre to a customer from the top of an OR pole we take on a liability, should the customer concerned decide to switch to a rival network in the future, to remove our installed fibre from the pole top at our own cost and risk. This would then, in principle, pave

the way for the provider to whom the customer has switched to separately install its own fibre from pole top, again taking on a risk of having to remove that fibre in a subsequent switching scenario.

The reason why Openreach insists on an obligation to remove fibre is – as we understand it - that pole top capacity is ultimately constrained by the physical dimensions and weight-bearing capacity of a pole. Whilst in theory new poles could be deployed that would support multiple fibre connections to a single property, this is in practice unlikely to be feasible in many cases, would impose significant negative externalities in terms of the impact of a larger, strengthened pole on visual amenity, and also runs the risk of property fronts and curtilages being festooned with multiple fibre connections.

This obligation to remove fibre connections increases the cost and risk profile of using PIA. It also raises the general risk of passive infrastructure reuse: because pole tops are not only highly congested already but have a mix of passive and active network components serving multiple premises, each engineer visit that involves work at pole top runs the risk of impairment to other physical assets and in the worst scenario, loss of customer service to both the served premise which has triggered the switch, but also adjacent premises. Resolving resultant problems can then potentially involve co-ordination of engineering visits by several different network operators. This inherent risk can only be mitigated to a certain degree through operating protocols and SLAs.

Hence it is our view that such a process should be avoided, if at all possible. The most obvious short-term solution would be to require the operator that has installed the fibre to then make that fibre connection available to the gaining operator in a switching scenario. This potential solution starts to look conceptually similar to the regime operating in France that requires 'mutualisation' of the final connection to the customer.

MDU in-building wiring

Deploying full fibre to MDUs here in the UK presents similar but not identical challenges. As with pole top deployments, multiple in-building wiring deployments supporting multiple competing networks will impact on visual amenity, and by its nature, installing in-building wiring will impose noise and disruption to residents which it would be preferable to avoid.

However, the main reason why some form of regulated sharing of in-building wiring may be desirable is the practical problem of obtaining consent to deploy.

MDUs come in multiple shapes and sizes, and with a variety of ownership structures: in Scotland, common ownership of the shared spaces in a building (curtilage, gardens, hallway and stairwells etc) appears to be prevalent, whilst in England & Wales it is more usual to encounter a model in which a single entity owns the freehold to an MDU (with associated rights to grant access to the shared spaces) whilst individual properties are granted on a leasehold or rental agreement that confers differing levels of access rights to the owner/renter of individual properties.

For the entity that has the legal right to grant access to the shared spaces necessary to construct an in-building fibre access network, there is an obvious route of redress to prevent the disruption and impact on visual amenity problem: to grant exclusive rights to deploy in-building wiring to a single entity. But, of course, this then substantially curtails consumer choice for leaseholders or tenants who can neither receive service from an alternative network provider ab initio or switch to an alternative network provider in the future. An alternative provider could, in theory, challenge the in-building exclusivity granted by a freeholder in the court and force a right of access, but this is a lengthy, timeconsuming and uncertain process. Protracted disputes in the past over tenants' rights to erect satellite TV antennae on MDUs – where resolving disputes has involved the balancing of the conflicting rights of landlords, individual tenants seeking service and other tenants who might be affected by the work – suggest this would be highly fraught.

The obvious alternative therefore is to seek to impose some form of mutualisation rule to make in-building wiring available to the gaining operator in a switching scenario.

It is worth noting in passing that even this probably does not resolve all the issues involved in MDU deployments where the individual properties are rented, not owned. It is possible in this scenario for the landlord to curtail, via the contract with the tenant, their rights to seek service from anyone other than the landlord's preferred supplier. The same effect may also be achieved in the case of leaseholders by the imposition of restrictive covenants in the leasehold. The ultimate resolution of this may ultimately require legislative change.

Where would 'mutualisation' occur?

If the principle of mutualisation to facilitate consumer choice and switching between network providers is accepted, the question that then arises is where should this mutualisation occur.

We have already noted that the first and most obvious problem in replication is at pole-top in a PIA-enabled deployment. As slide 4 in our attached presentation 'Ofcom architecture options' shows, it is possible to share an already installed dropwire fibre, so that when a customer switches from one provider to another, the asset from pole top to premise is transferred to the gaining provider.

The obvious challenge to this approach is that, at present, pole top deployments are not standardised. The PIA ruleset establishes general parameters for deployment (eg the total space envelope that pole top apparatus can occupy), but does not specify the connector equipment itself: this means transfer would involve not just a transfer of the fibre drop from one connector to another but potentially the removal of the pre-existing connector and its replacement with a new connector of different configuration. The risk is that what ought to be a switch with relatively low costs involving a single truck roll still involves at least two sets of engineers to attend to (1) remove existing connector apparatus, leaving the drop fibre rolled for subsequent reconnection, and (2) a second visit by the gaining provider to install their own connector and reconnect the drop fibre.

Only some of the complexities of the status quo are addressed in such a scenario and in fact the cost of complexity of switching is still substantial.

It would be possible to impose rules that addressed this standardising deployed apparatus so that a switch involved switching the input to the connector rather than removing one connector and replacing it with another. Inevitably though, given that significant deployments are already taking place with non-standardised connectors, a substantial rump of non-standard connections are likely to be in situ by the time any such rules can be put in place.

Hand-over further back in the network

Pole-top handover is the solution that accords most closely with Ofcom's stated aim of encouraging end-to-end infrastructure competition but in engineering terms, a more elegant solution would be to effect handover at a more distant point in the network. In slide 5 of the attached presentation, we note how handover could be achieved at the cabinet (or, as described in the presentation, the 'Fibre Presentation Point'). This means that each competing network owns its own infrastructure (including active layer) all the way to the FPP but there is a handover onto a shared passive fibre network at that point. In our view this causes no difference in terms of operational control of the underlying asset or ability to differentiate services compared with a pole top deployment, but it substantially reduces cost and complexity. It does still require a separate truck roll for each switch, as physical routing has to be established from the FPP.

Our preferred solution, set out in slide 6, would effect handover even deeper into the network at the Optical Line Terminal (OLT). In line with general architectural principles adhered to by most full fibre network builders, this is the boundary in our network between the PON and the AON. If the aim of policy is to encourage competition at the service creation layer, this is the critical point in the architecture in terms of providing a means for such service creation and differentiation. We think there is a strong case from first principles that replication of the PON beyond this point adds little in terms of scope for service creation and differentiation, other than benefits that would result from the adoption of different technical standards concerning the actual build of the PON: with full fibre networks under construction in the UK and elsewhere

generally now following a similar technical specification, it is not immediately apparent that the scope for differentiation on design and build of the PON itself is a material consideration.

The relative merits of different forms of mutualisation

From a legalistic perspective, it is probably easier to justify a mutualisation rule that applies to a minimum set of network assets closest to the customer – ie, on our example, only the fibre drop from pole top to customer. However, as noted this presents some practical difficulties and does not entirely remove the costs and risks of a complex switching process.

Handover deeper in the network, up to and including at the AON/PON boundary, theoretically secures all the benefits of competition in the active layer and substantially reduces costs of deployment. The switching process can be effected with minimum cost and risk under this scenario. Thus, the advantages of this approach are compelling. However, we would expect Ofcom to want to be satisfied that the passive infrastructure consumed by the gaining operator in this scenario does indeed offer the same scope for competitive differentiation as would be the case should the gaining operator elect a handover point nearer to the end-user. This is essentially an empirical question that turns on the nature of the consumed passive infrastructure on the one hand and the degree of service innovation that is possible at the various handover points. But from first principles, it seems to us that there is no intrinsic reason to choose a handover closer to the end-user than the AON/PON boundary.

Future evolution of the FTTP network

As we have previously discussed with Ofcom, CityFibre's reference design for FTTP has gone through several iterations but the underlying aim is to build a passive network with sufficient flexibility in its design – both in terms of fibre count and handover points – to cater for all current anticipated future needs.

We already make dedicated dark fibre available on a wholesale basis to a range of customers. This is a dedicated, one-to-one dark fibre from the end-user to our wholesale customer's handover point. In principle, we could expand this model to our FTTP architecture and create a dedicated, end-to-end dark fibre network for another Layer 2 provider such as Openreach. This model is set out as Option 4 in the attached slide deck 'Architecture Capacity Overview'. There is a practical constraint on how many wholesale customers could consume our network in this configuration given the need to duplicate end-to-end dark fibre.

An obvious future use-case which we are anticipating in our reference architecture is the capability to support 5G small cell deployments on behalf of one or more MNOs across the footprint of our cities.

Based on our current conversations with MNOs, we believe that such demands are likely to manifest themselves on a slightly longer timescale. But this anticipated need is driving certain decisions about both fibre count and potential evolution of the network towards eventual wavelength unbundling.

We set out the anticipated evolutionary path of our network towards a model that would support multiple 'Layer 2' operators including MNOs consuming our network. This model is based on a presumption of evolution to NGPON2 (with a minimum lead time of 2-3 years – this is driven by wider market dynamics, ie the interaction of network operators' evolving demands, time to market for NGPON2, and the downward trend in active electronics equipment costs, but this is, in our view, a realistic time horizon that also lines up with the likely evolution of MNOs' plans for small cell deployment).

Not only will this evolution allow for a step-change in performance from symmetrical 1Gbit connectivity as standard to symmetrical 10 Gbit as standard, but it will also allow for 'virtual unbundling' of the dark fibre network – ie wavelength unbundling. This in turn, as shown in the slide deck (option 2), allows for several operators to consume the passive network via their own OLT.

The implication of this evolution of network design is that, on a time horizon of perhaps 3-5 years, our full fibre network may be supporting multiple wholesale customers via an NGPON2 wavelength unbundling

approach, creating end to end network architectures that allow for the same degree of service creation and innovation as would be available to the wholesale customer from purchasing their own, dedicated dark fibre network as outlined in Option 4 on the slide deck. We expect that as a purely commercial decision, most wholesale customers will elect to consume our network in this configuration given the relative costs and benefits of these differing approaches.

Conclusions: Timing of a regulatory intervention, taking into account market and technology

In considering where and how Ofcom should intervene, therefore, we believe that the timing of such an intervention is the key determinant of what a successful, pro-competitive intervention would look like.

In the near term, the pressing problem is resolving the issue of what should happen when a customer, served with fibre via PIA delivered from pole-top, switches to a rival network. At present, as noted, the PIA product specification would necessitate a complex and risky process of swapping out identical fibre drops. However, to intervene to mandate handover of the fibre drop would necessitate an intervention that also standardised (at least to some degree) the method of pole top deployment and the fibre connectors to be used. So an intervention of this kind would need to happen very quickly if it is not to involve slamming the stable door after the horse is bolted, given that large numbers of non-standardised deployments are already taking place.

In practice, we suspect most operators in such a scenario would probably prefer to effect a handover of dark fibre further back into the network than at pole top. This could be done at the street cabinet or the POP.

In the longer term – but within a realistic timescale for imposition of remedies in the all access review, ie 3-5 years - we think the evolution of NGPON2 and the commercial requirements of our customers will lead to the creation of new wholesale products on our network based on wavelength unbundling. If this does, as widely anticipated, give operators the same end to end control and scope for service innovation and differentiation as they would get from a dedicated passive fibre network, this could in turn have profound implications for operators' willingness to build or consume dedicated end-to-end fibre networks.

As we have discussed with Ofcom, this opens up a possible scenario in which mutualisation closer to the customer becomes a regulatory long-stop – essentially, a mechanism to intervene should satisfactory commercial agreements for consumption of wavelength-unbundled networks not arise.

The evolution of the wholesale market has been distorted hitherto by Openreach's desire to shoehorn its customers into purchasing active layer products, but the evolution of the market, as demonstrated by our own customer interactions, suggests a much richer and deeper array of wholesale fibre products can be made available, given the right regulatory incentives and reduced dependency on Openreach as the sole provider of these products.

CityFibre
May 2019

Annex 2

[✂]

Annex A: [✂]

Annex B: Extract from Oftel Leased Lines Market Review 2003

B.49 Retail leased lines are priced independently of other products or services. The pricing depends on the volume of a customer's private circuit business and on the term over which that business is committed. The ubiquity of BT's network means that in many areas customers have no alternative to BT. If these customers also need leased lines in other areas where other operators also provide leased lines, they are likely to buy these leased lines from BT in order to maximise their volume discounts. In such circumstances communications providers would be forced to compete against BT's marginal price of leased lines in the areas where they compete, which is lower, and sometimes significantly so, than BT's average price. It can thus be inferred that BT's discounts may make entry and growth by other operators more difficult.

B.50 Customers say that the discounts offered by BT make them less likely to consider other leased lines suppliers, whose average prices are cheaper, in areas where these suppliers are active. If they used other, cheaper suppliers for some of their leased lines, it would mean a possibly significant reduction in the discount obtained from BT, which is calculated on the basis of total purchased volume and which applies to the whole purchase. Operators have also commented on this issue.

B.51 The Director considers that this may be a contributory factor to BT's SMP.

Annex 3 [✂]

Annex 4

Pricing of >100Mbps local access services by Openreach during competitive CP FTTP network roll-out

Confidential Version

Additional paper submitted to Ofcom by CityFibre Infrastructure Holdings PLC in relation to Ofcom's WLAMR consultation March 2017

September 2017

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CityFibre

Additional submission by CityFibre in relation to Ofcom's WLAMR consultation published March 2017

1. Executive Summary

1.1.2 The threat that Openreach may price >100Mbps access services below a level that can be replicated by a reasonably efficient operator constitutes a significant deterrent to investment in FTTP networks by competitive operators in the UK.

1.1.3 CityFibre and other potential investors in full fibre networks in the UK believe that Openreach is likely to use the pricing freedom proposed by Ofcom for SuperFast Broadband (SFBB) access services delivered over FTTP to undermine competitor roll-out of FTTP services. A safeguard price floor should be imposed to prevent Openreach from pricing its >100Mbps access services below that of the REO LRIC level.

1.1.4 The imposition of a price floor to remove the threat of Openreach pricing below the level that can be replicated by a reasonably efficient operator would significantly strengthen the willingness of investors to back the deployment of FTTP networks across the UK. We believe that the potential costs to consumers would be limited whereas the benefits of FTTP deployment across large parts of the UK are recognised as being substantial.

1.1.5 Whilst it is not possible to state with certainty that Openreach would price it's >100Mbps access services below a REO LRIC level, the obvious incentive on Openreach to do so and the resulting risk that it may do so represents a real risk to investment in full fibre networks in the UK.

1.1.6 The costs, on the other hand, of imposing such a price floor are likely to be limited. This is primarily because of the small number of consumers expected to take up >100Mbps broadband services during the forthcoming charge control period.

1.1.7 Ofcom's Cost Orientation Review in 2013[52] identifies 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 cab 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 and such benefits are typically measured in £b, significantly higher that the likely costs almost regardless of how Openreach might price its >100Mbps services if left unconstrained, and of the number of consumers that would migrate to the 100<bps services during the charge control period.

1.1.8 CityFibre urges Ofcom to build an REO LRIC model and to impose a price floor to prevent Openreach from effectively foreclosing the market for competitive FTTP deployment in the UK.

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

2. Introduction

2.1.1 CityFibre and other competitive CPs plan extensive FTTP network investment during the period covered by the forthcoming WLAMR charge control period. At the same time, BT is planning to start rolling out G.fast services[53] with advertised download speeds of more than 300Mbps. According to BT[54], the roll-out of G.fast services involves considerably lower costs than FTTP network roll-out and can also be done much faster than FTTP.

2.1.2 This means that it would be possible for BT to target its G.fast roll-out at locations where competitive CPs have announced they plan to invest in FTTP networks. If that were to happen, and if BT priced the >100Mbps service very competitively (as there are currently no proposed regulatory constraints on pricing above the 40/10Mbps VULA service), then it is likely that a substantial number of those customers who would be early adopters of FTTP services would move to the G.fast-based >100Mbps services and subsequently would be very unlikely to move to FTTP in the short, and possibly even medium, term. This is because >100Mbps services are likely to satisfy most consumers' short term needs for improved speed in the residential and SME market, and (although the FTTP product is substantially higher quality, more consistent and resilient than G.fast[55]) customers will not be aware of the superiority of FTTP connection until they have tried it, a problem exacerbated by inaccurate claims that FTTC-delivered services are 'fibre broadband'.

2.1.3 If BT successfully ties up a large proportion of the customer segment that is most likely to move to FTTP, then the investment case for FTTP will suffer substantially and could become unviable. Moreover, CPs that consume Openreach broadband products today but are considering a transition to competitive FTTP may have their confidence eroded to the point where the decision to migrate customers to FTTP is delayed or cancelled altogether. Therefore, whilst it is good for the regulated dominant provider to react to existing or emerging competition, it is important that such reaction is within the bounds of rules set to ensure that the emerging competition is not foreclosed thus denying the benefits of competitive FTTP networks to consumers. As it is Ofcom's stated objective to encourage a third network in at least 40% of the country, Ofcom should seek to create market conditions that are conducive to this happening rather than taking a laissez faire approach in which any anticompetitive behaviour by BT would be scrutinised ex-post.

2.1.4 CityFibre has considered the different options open to Ofcom to establish a set of rules within which BT can react to the emerging competition from competitive CP FTTP roll-out and considers that a price floor for speeds over the 80/20Mbps VULA service currently offered by BT (referred to in the remainder of this paper as >100Mbps services) would provide an appropriate balance between promoting competition and delivering short term consumer gains. This paper sets out the underpinning economic rationale along with indicative levels of wholesale prices resulting from our proposed approach.

[53] For the purposes of this paper, we have defined G.fast services as VULA services at higher speeds than currently offered by Openreach on the FTTC platform – for ease of reference we assume this to be VULA services > 100Mbps download speed.
[54] See Paragraph 6 of the Openreach consultation "Upgrading the Access Network with FTTP" (the Openreach FTTP consultation).
[55] See paragraph 5 of the Openreach FTTP consultation.

3. Rationale for the introduction of a price floor for VULA services > 100Mbps

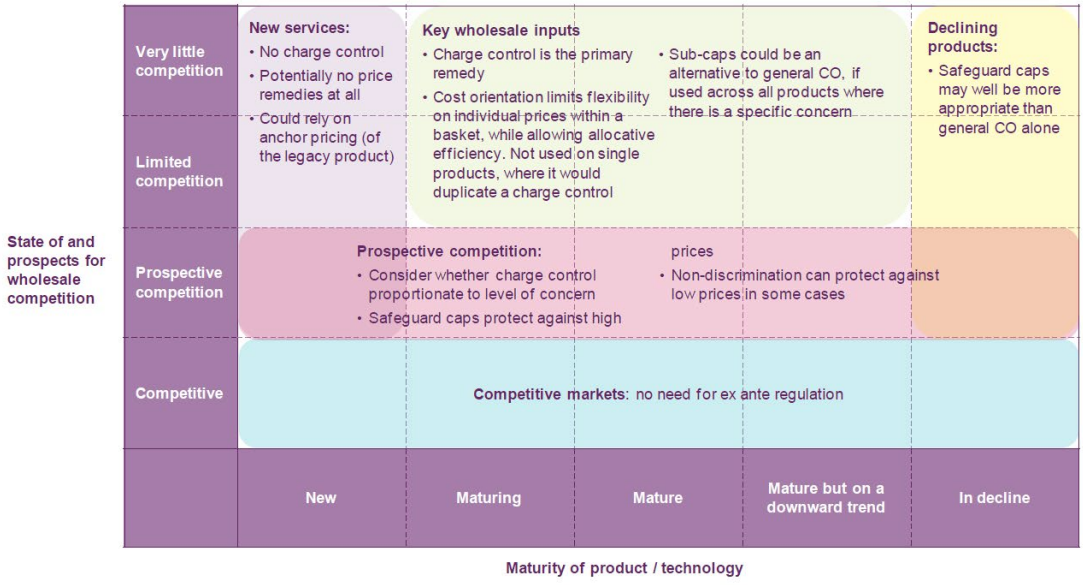
3. 1 Ofcom's cost orientation principles

3.1.1 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, 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]

3.1.2 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



3.1.3 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 presented above.

3.1.4 It is clear from evidence produced by Ofcom in the WLAMR consultation document, and detailed evidence submitted to Ofcom by CityFibre and other CPs, that the wholesale market for superfast broadband (SFBB) and ultrafast broadband (UFBB) services is prospectively competitive if appropriate regulatory policies are pursued. Indeed, Ofcom specifically seeks in the Strategic Review of Digital Communications to create conditions that will produce three broadband networks across 40% of the UK, with several downstream service providers offering services across those networks.

3.1.5 It is also clear that, in the UK, the deployment of technologies needed to deliver >100Mbps broadband speeds is at an early stage. Openreach plans to use G.fast, which has only just been launched

commercially by BT, and is in an early phase of consultation on possible expansion of its FTTP rollout. Other CPs (including CityFibre) have announced significant plans to roll out FTTP networks starting in 2018.

3.1.6 The market conditions for the supply of >100Mbps wholesale broadband services in the UK therefore fall towards the bottom left of Ofcom's Figure 5 as shown above, and specific care should be taken to tailor the remedies applied in the initial (and relative fragile) stage of competitive development. CityFibre has presented arguments in its main response to the WLAMR consultation in relation to the price regulation of the 40/10 VULA product which are based on exactly the parameters as those used by Ofcom in its Cost Orientation Review paper and this supplementary response builds further on that principle.

3.2. The application of a price floor to >100Mbps local access services

3.2.1 The consideration of a price floor to encourage investment in competing infrastructure to the current market for wholesale SFBB and UFBB services is fully in line with Ofcom's stated principles as explained above. The remaining question is therefore whether it would be proportionate to do so in the specific prevailing circumstances? – i.e. would the likely benefits outweigh the likely costs? In other words, are the risks associated with the application of a price floor to Openreach's >100Mbps local access services larger than the likely benefits that would result from increased investment by competing CPs?

The cost and benefits of introducing a price floor for >100Mbps local access services

3.2.2 Ofcom will have learnt from the WLAMR responses submitted by CPs planning to (or evaluating) investment in FTTP networks in the UK, that one of the main risks is considered to be the foreclosure of the market for >100Mbps services by Openreach through rapid and targeted roll-out of relatively cheap G.fast services.

3.2.3 See for example Vodafone's response to the WLAMR consultation page 2 paragraph 5: "*the lack of regulatory control over Openreach's GEA product pricing means that third party investment can be thwarted on a local basis without any real disruption to Openreach's revenue lines. Targeted build and pricing of G.Fast based services, sufficient to dent an already fragile business plan would retain dominance in local access networks for Openreach for years to come.*"

3.2.4 Ofcom, on the other hand, appears to be primarily concerned that BT would price products of higher speeds than the 40/10 service so as to make an excessive return, but considers that the lack of price regulation of higher speed products, and the likely resulting above-cost pricing by BT, would create investment incentives for CPs. By implication the assumption on which Ofcom is working is that pricing across the FTTC/GEA product set will be set in a linear fashion relative to performance, but this ignores Openreach's strategic incentive to foreclose the market to alternative FTTP competition.

<u>The costs of applying a G.fast price floor</u>

3.2.5 There appears to be a fundamental disconnect between Ofcom's view of Openreach's likely pricing behaviour and that of BT's main competitors. Therefore, when considering the costs of applying a price floor to Openreach's >100Mbps local access services, it is prudent to consider both scenarios:

3.2.5.1 Based on Ofcom's assumptions, Openreach would likely set high prices for >100Mbps VULA services. If that were the case, then a price floor would likely not cause any loss of benefits to consumers as the prices set by Openreach would likely be above the floor in any case;

3.2.5.2 If the competing CPs' assumptions were correct, then there would be some loss of immediate consumer benefits, as consumers would not be able to access the >100Mbps services as cheaply as would be the case if there was no price floor.

3.2.6 Naturally, that actual cost (in scenario 2 above) would depend on two parameters: (a) how much below the price floor Openreach would have set its price if left unconstrained; and (b) how many customers would likely take the cheaper >100Mbps services during this charge control period. Taking each of these in turn:

a) It is not possible to estimate at what level Openreach would set its >100Mbps VULA prices once the WLAMR process is finished. One can consider the early market deployment prices Openreach recently

published for the commercial launch of G.fast services on 1st September 2017[56][57], but it should however be noted that those prices should not be taken as an assurance that BT will not change its prices radically once the WLAMR process is finished.

b) In the WLAMR, Ofcom presents research suggesting that the vast majority of consumers of broadband services in the UK are likely to retain the 40/10 (or it's replacement product at [50/10]) service[58]. Based on that research, which we are not aware that any stakeholders have disputed, it is unlikely that the level of the >100Mbps local access pricing would affect many end consumers over the period of the review.

3.2.7 Given the likely low volumes of customers moving to the >100Mbps services during the forthcoming charge control period, and regardless of Openreach's intentions to price the >100Mbps local access services high or low, it is unlikely that the cost of imposing a price floor would be significant.

The costs of not applying a >100Mbps price floor (or the benefits of introducing the price floor)

3.2.8 The prevailing expectation of CPs planning or considering investment in FTTP infrastructure in the UK, is that BT's freedom to price >100Mbps broadband services as it pleases constitutes a major risk: they believe that Openreach will deliberately set prices low to deter competitive entry.

3.2.9 CityFibre's negotiations with downstream CPs for anchor tenancy on CityFibre's FTTP networks show that CPs are unwilling or reluctant to commit unless a level of constraint is imposed on BT's pricing freedom for the >100Mbps services.

3.2.10 As is widely recognised in academic literature, the threat of, and belief that the dominant provider will reduce its prices to a level where market entrants cannot compete is a significant deterrent to investment. Ofcom needs to recognise that, given the very large investment required to deploy FTTP networks, the risk of Openreach pricing below a level that is replicable by an efficient entrant could cause potential investors to withdraw.

3.2.11 Whilst it is recognised that only a portion of broadband consumers will be willing to move to a higher speed service during the period covered by the forthcoming charge control, this makes it even more important that that consumer segment is not tied up in contracts for G.fast-based services sold at a very low price. Removal of a significant portion of the early adopter consumer segment from the addressable market could make the planned FTTP investments unviable and makes it impossible for downstream CPs to commit to any significant level of market penetration on new FTTP networks.

3.2.12 It is therefore CityFibre's view that not imposing a price floor on Openreach's >100Mbps services constitutes a considerable risk to the achievement of the level of projected benefits of FTTP roll-out[59] with estimates of benefits measured in £b – clearly significantly higher than costs which may (or may not) be incurred by the imposition of a price floor on Openreach's >100Mbps services.

3.3. The cost benefit balance of introducing a price floor for >100Mbps local access services

3.3.1 In the preceding paragraphs, we have shown that the likely costs (in the form of lost benefits to consumers who would have purchased lower price >100Mbps services using Openreach's G.fast-based local access services) of imposing a price floor on Openreach's >100Mbps local access services are low, and that the potential benefits are substantially higher.

[56] https://www.openreach.co.uk/orpg/home/updates/briefings/ultrafastfibreaccessbriefings/ultrafastfibreaccessbriefingarticles/nga200217.do

[57] Please note that CityFibre understands that Openreach was due to launch the >100Mbps access services on September 1 2017, but has not seen any announcements to that effect.

[58] See for example paragraph 3.51 of WLAMR consultation document Volume 1.

[59] See for example: SWQ 'UK Broadband Impact Assessment Study (2013) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/257006/UK_Broadband_Impact_Study_-_Impact_Report_-_Nov_2013_-_Final.pdf and Analysis Group 'Early Evidence Suggests Gigabit Broadband Drives GDP' (2014) Available at http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/gigabit_broadband_sosa.pdf

3.3.2 Ofcom expects the take-up of >100Mbps services to be limited in the forthcoming charge control period, but it is during this period that investors will be making commitments to the deployment of FTTP networks in many parts of the UK.

3.3.3 In the scenario where Ofcom imposes the price floor during this charge control period, but only little investment materialises, the costs of having done so will be limited and the price floor can be removed for the following charge control period (if Ofcom considers there to be a continued need for charge controls in this market).

3.3.4 On balance, therefore, CityFibre considers it to be consistent with Ofcom cost orientation principles (and in support of Ofcom's explicit strategic objective of encouraging investment in new FTTP networks to the point that there are three networks serving 40% of the UK and two networks in the majority of the remainder of the country) to impose a price floor on >100Mbps local access services for the period of this charge control to remove the substantial threat of Openreach setting prices below a level that is replicable by an efficient competitor.

4. Setting the price floor

3.3.5 [✂]

3.3.6 [✂]

3.2.1 [✂]

4.2. Defining the objective of the price floor

4.2.1 [✂].

4.2.2 [✂]).

4.3 Determining the appropriate costing methodology

4.3.1 Conventionally, in competition law contexts, the marginal cost of the dominant firm is the *de facto* price floor as to price below this would normally be considered predatory. In network industries, however, and in Ofcom's Cost Orientation Review, the preferred costing approach for setting price floors is typically long run incremental costs (LRIC).

4.3.2 The challenges associated with simply using the dominant provider's LRIC costs for setting price floors in telecommunications (and other network industries) is that the sector is characterised by the existence of large economies of scope and scale. For the price floor to meet its stated objective (see above), it is necessary to set the level of the price floor using the costs of a reasonably efficient operator in the relevant market – e.g. the provision of broadband wholesale local access services. A price floor set at BT's LRIC would not meet the stated objective of the price floor as it would allow BT to price at a level that cannot be replicated by a reasonably efficient competitor.

4.3.3 A reasonably efficient operator (REO) costing approach is therefore required. This does not, however, mean that the principle of using LRIC costing should not also be applied. The use of LRIC costing excludes common costs, and CityFibre agrees that (for the purposes of a price floor) common costs should be excluded, thus allowing a provider to recover its common costs through other services than those where the price floor is applied.

4.3.4 LRIC costs for a market entrant, however, are different to LRIC costs for an established provider. This is because the physical infrastructure (e.g. ducts, poles and fibre) is part of the long run incremental costs for the market entrant, but is a sunk cost (treated as a common cost) for the established provider.

4.3.5 Thus, CityFibre proposes that Ofcom determines that a price floor should be applied to Openreach for local access services of >100Mbps, with the level of the price floor set at the REO LRIC level.

4.3.6 [✂]:

4.3.7 [✂]

4.3.8 [✂].

5. Conclusions

5.2.1 In this brief paper, CityFibre has presented clear facts and a rationale grounded in competition economics theory to assist Ofcom in determining how to best encourage investment in new full-fibre networks without preventing Openreach and BT retail from reacting to existing and emerging competition. CityFibre agrees with Ofcom that competition is beneficial to consumers and that action to constrain competition should only be taken when there is clear evidence that consumers are better served in the medium to longer term if short term restrictions are imposed.

5.2.2 We recognise that Ofcom is generally reluctant to set price floors, though the reasons for this (other than the risk of uninformed commentary that this is somehow 'against consumers' interests) are unclear. In this case, failure to act to introduce a price floor would put at risk the existing appetite for investment in full fibre networks in the UK by alternative network operators supported by major investment houses. The action required to ensure that these investments go ahead would likely be at very limited short term cost to consumers and is therefore in line with the principles set out in Ofcom's own Cost Orientation Review paper.

5.2.3 CityFibre urges Ofcom to impose a REO LRIC based price floor on Openreach >100Mbps local access services for the duration of the forthcoming charge control period and is confident that Ofcom will see the clear benefits of that action in the form of significant investment during that period and commitment to further investment beyond that.