Response to Ofcom's consultations on the Physical Infrastructure and the Business Connectivity Market Reviews

BT Group's Response to the consultations published on 2 November 2018

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About this document

We note that the response date for Ofcom's consultation on the PIMR has been put back to Friday 1 February 2019. Notwithstanding we are submitting this combined response on 18 January 2019 to both the PIMR and BCMR consultations. This combined response reflects the views of BT plc. We note that Openreach, a wholly owned subsidiary of BT, intends to submit its response to the PIMR consultation on 1 February 2018. We reserve the right to amend or supplement this response to reflect any developments in the Openreach response to that consultation.

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1 Executive summary

1.1 The Physical Infrastructure Market Review 'PIMR' 2018 and Business Connectivity Market Review 'BCMR' 2018 are Ofcom's first market reviews since it spelt out its Strategic Policy Position in July 2018. In many respects, Ofcom's proposals are consistent with its policy objectives which now focus on promoting investment and competition (with timely interventions where there is no commercial case to build networks). Ofcom targets regulation upstream (through the PIMR) and proposes remedies downstream which are intended to incentivise investment (with a view to removing them as competition becomes effective).

1.2 Ofcom's strategic aims would, however, be better delivered through a different approach in several areas. Physical infrastructure access (the new focus of regulation) will materially reduce fibre deployment costs and drive network competition. Markets should be allowed to respond to this game-changing intervention without as much prescriptive regulation downstream of physical infrastructure. This would better support competitive investment and good outcomes for customers.

Achieving better alignment with strategic objectives

1. Ofcom should wait until 2021 before removing duct and pole access usage restrictions. The existing (mixed usage) duct and pole remedy will support Ofcom's investment and competition objectives until 2021. This would allow unrestricted duct and pole access 'UDPA' to be properly assessed, looking across business and residential markets, to ensure it delivers tangible benefits for customers without over-reaching
2. The regime for regulating physical infrastructure should provide long-term stability, predictability and a fair opportunity for Openreach to recover the efficiently incurred costs of providing shared access, with an appropriate allocation of risk
3. If Ofcom does mandate UDPA earlier than 2021, it should not remove usage restrictions in effectively competitive business markets as this could damage competition and investment. Ofcom should stick with mixed usage duct and pole access in these areas i.e. access that is primarily for consumer broadband (and some business) provision
4. If Ofcom does implement UDPA everywhere, it should de-regulate business connectivity markets far more extensively than has been proposed. DPA will materially increase CPs' ability and incentive to deploy fibre to businesses (including within the review period), and this will increase the competition facing Openreach
5. Even if Ofcom is not inclined to give weight to DPA (which is an error) it should not regulate in certain urban areas or the high value business segment as these are already competitive
6. Mandating dark fibre offers no significant benefits and should be deferred until the areas where network competition is likely (and unlikely) are clearer. If implemented now, there is a risk of harm to investment incentives (not least due to a high risk of mis-use)
7. Ofcom materially underestimate the cost of capital. Changes in key parameters with no discernible change in market fundamentals creates an unhelpful regulatory environment when large and long-term investments are in prospect

Removing duct and pole access usage restrictions is premature and cannot be justified in effectively competitive business markets

1.3 There is an extensive duct and pole access requirement on Openreach already, which allows access for (primarily) residential and (some) business services (so called 'mixed usage' duct and pole access). This will go a long way towards meeting Ofcom's investment and competition objectives as it already allows much cheaper access to Openreach's infrastructure and the supply of multiple services over the networks created. Removing usage restrictions completely (as proposed by Ofcom in the PIMR) would allow the remedy to be used (for the first time) to solely target the business segment,[1] without the need to demonstrate a firm intention to deploy consumer broadband.

1.4 Such a substantial change in the duct and pole regime assessment cannot be undertaken without evaluating the need for it across both residential and business connectivity markets. Ofcom accepts this is necessary and has started, but not yet completed, its integrated review. Without an assessment of competition issues through this lens (allowing for appropriate geographic differentiation) the remedy may over-reach in areas where network competition already exists (or is expected due to mixed usage DPA); or it may be irrelevant because there is no commercial case to build additional networks.

1.5 If Ofcom nevertheless goes ahead, the proposed obligation is too extensive and could adversely affect those who have already invested in competitive networks without regulatory help. In business markets which are already effectively competitive, mixed usage DPA is clearly enough – the removal of usage restrictions in these areas cannot be justified.

1.6 Equally, Ofcom has not made the case for limiting its obligation to Openreach. Virgin Media has physical infrastructure that would be attractive to network rivals in many cases (most notably in areas where Openreach's network is not usable by third parties). Virgin Media's narrower footprint is not an issue as ubiquity is not a pre-requisite for competitive investment in fibre infrastructure. Ofcom's proposals also fall short of the Government's ambition to address barriers to the use of non-telecoms infrastructure to promote network competition.

1.7 We assume that any obligation would require Openreach to provide unrestricted access to its duct and poles to address any market power in downstream wholesale fixed access markets (and associated retail markets), as is currently the case for the mixed usage DPA obligation. This is consistent with the legal and economic requirement that upstream remedies relate to downstream competition issues, in this case in the provision of fixed connectivity services in residential and business markets. Use of Openreach's physical infrastructure on regulated terms to host radio transmission / reception equipment to provide wireless connections is out of scope.

[1] Companies offering high-speed lines for large businesses, as well as networks carrying data for mobile operators.

Ofcom must establish enduring DPA pricing principles to ensure fair recovery of the cost of BTs physical infrastructure in the long term

1.8 Principles must be established upfront so that the charging regime for UDPA creates a stable, predictable long term regulatory regime that allows Openreach a fair opportunity to recover the costs of its shared physical infrastructure network (which amount to some [✂] of Openreach's mean capital employed, representing about [✂] of the total asset base in SMP markets). The regime should incorporate the well-established principle that financial risk is not imposed on a regulated entity when is not able to manage the source of the risk. This is to incentivise good management of those risks and avoid a significant financing cost premium if risks are borne which are beyond the management's control. In this case, this principle would mean that Openreach should not bear risks from fluctuations in active volumes in seeking to recover physical infrastructure costs.

1.9 An enduring regime also requires greater clarity on how allowances for network adjustment costs should be established, as well as uncertainty mechanisms to address in-period changes to these expenditures beyond Openreach's reasonable control. In short there is merit in considering a regime more akin to the regulatory asset base 'RAB' framework used in other regulated sectors.

Ofcom's analysis of the business connectivity markets understates actual and potential network competition and therefore over-states Openreach's alleged market power

1.10 There is a lot more competition in business connectivity markets than Ofcom's analysis suggests. Ofcom's analysis does not capture important distinctions between customers (and the nature of their demand) – particularly between the high value/high bandwidth segment and the lower value/low bandwidth segment. For example, competitors to Openreach are prepared to dig (and create new duct) approximately <u>twice as far</u> to serve high value customers (with high bandwidth requirements) than for lower value customers (with lower bandwidth requirements).[2] By aggregating these segments, Ofcom has missed these distinctions, leading to flaws in the assessment of market power which must be re-done.

1.11 In the high network reach 'HNR' Metro areas (across all bandwidths), and the very high bandwidth 'VHB' segment in wider areas, the evidence points to effective competition (even before the impact of duct and pole access is considered). There is already a high level of rival infrastructure within reach of customers in these cases, and this drives competitive outcomes. These can be de-regulated <u>now</u> (irrespective of where Ofcom lands on UDPA). Regulating where there are existing (or emerging) competitive pressures risks stifling innovation and making investment less attractive. This would harm both competition and, ultimately, customers.

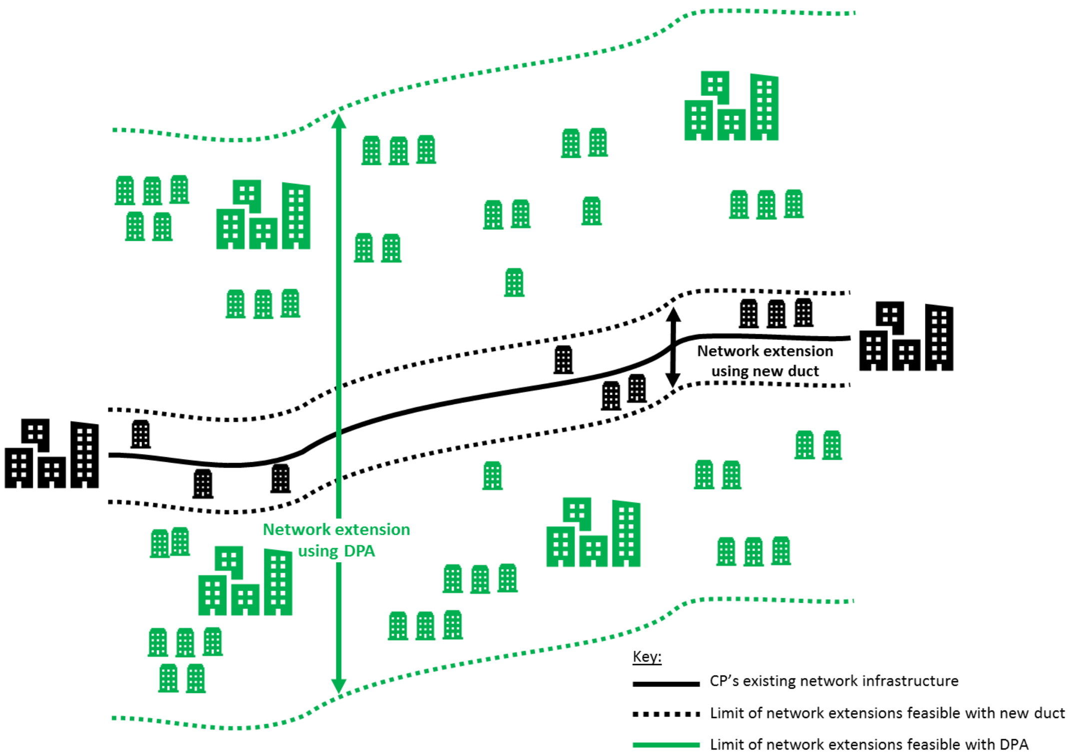
1.12 The current mixed usage DPA remedy will increase competitive pressure still further by materially increasing the ability and incentive of network rivals to deploy fibre. The

[2] Ofcom, 2018. *Business Connectivity Market Review*, 2 November, paragraph 5.18.

removal of usage restrictions (i.e. UDPA) would accelerate this impact by allowing solely business customers to be targeted. This would encourage a much broader range of CPs (who focus on business services) to take up duct and pole access (in addition to the multi-service operators who can already supply business services under the mixed usage regime).

1.13 Access takers (whether those with scale ambition or the business specialists) would face materially different supply economics. Using Ofcom's own model, AlixPartners finds material cost savings from using duct and pole access for business services (e.g. a 70% cost reduction for a 1Gbit/s circuit requiring 100m of duct).[3] This could substantially increase the viable supply distance between a customer site and a rival's infrastructure by a factor of ten (as shown in the illustration below). CPs would have a strong incentive to get to high value customers quickly and secure their business through contracts. Customers are already delaying procurement decisions pending the outcome of PIMR. Ofcom is wrong, therefore, when it concludes that there will be little take up of duct and pole access in this market review.

Figure 1: Stylised illustration of the impact of DPA on CPs' ability to reach business sites



Source: AlixPartners

1.14 Without capturing the game changing effects of both mixed usage and UDPA, Ofcom's market power findings are not robust. Ofcom needs to rectify this and re-consider its proposed remedies, with greater scope for de-regulation and lighter regulation reflecting the competitive pressure that upstream remedies will unleash.

[3] Assuming a 5-year contract.

Openreach and BT need to have commercial flexibility to compete fairly where there is competitive pressure

1.15 Where market power remains, regulation should still allow fair competition between network rivals (including Openreach). Allowing Openreach the flexibility to respond to pressure from infrastructure rivals is critical to the (market-driven) dynamic which ultimately delivers benefits to its customers. This must include the ability to tailor its offerings to the needs of specific customers and customer segments (especially in the VHB segment should Ofcom continue to find SMP) and to differentiate its prices by geography.

1.16 In areas and market segments where network competition is emerging, the obligation to supply on an equivalence of inputs 'EOI' basis, is not required because competition will prevent discriminatory behaviour in favour of BT's downstream businesses. In any event, where it has SMP, Openreach is still subject to the no-undue-discrimination condition; the requirement for prices to be fair and reasonable; to treat all its downstream customers equally in accordance with the BT Commitments ('the Commitments') and general competition law.[4] EOI is disproportionate and may prevent Openreach from fairly responding to competition in order meet the needs of specific customers or customer segments.

1.17 BT's downstream businesses (which are large customers of Openreach) depend on competitive supply by Openreach so that they can compete on a level playing field with their rivals. Regulation should not, therefore, prevent or dis-incentivise Openreach from fairly responding to competition. Equally, we expect our downstream businesses to have the same commercial flexibility as rival CPs in respect of their network supply options. Our downstream businesses will use DPA (and dark fibre if mandated) to deploy networks as necessary to maintain competitiveness (and within the terms of the Commitments).

Dark fibre is not justified over other remedies and may have unintended consequences that are not in customer's interests

1.18 Mandating dark fibre at this stage will not bring any additional benefit beyond remedies already envisaged by Ofcom. It should be put on hold until there is greater clarity on the areas where network competition is likely (and unlikely).

1.19 Aside from design issues, mandated dark fibre is poorly conceived in light of broader industry trends – i.e. the move to a full-fibre future and a lower cost operating model with fewer exchanges. It would be a poor outcome for customers if our transformation plans were delayed, and a poor experience for CPs if they had to subsequently move from exchanges which were closing where they had recently invested in dark fibre.

1.20 Equally, Ofcom cannot yet be sufficiently certain that UDPA will not be effective in promoting infrastructure competition for the routes where dark fibre is proposed. A better (and more proportionate) approach would be to combine UDPA and active

[4] https://www.btplc.com/Thegroup/Ourcompany/Theboard/Boardcommittees/BTComplianceCommittee/Publications/Commitments.pdf

remedies. This would allow the former to reveal more accurately the viable scope of competition, whilst the latter would protect customers where competition is not viable during the two-year transition. This would also be more consistent with Ofcom's policy of only considering dark fibre where UDPA is not effective or available, as well as maximising the scope and incentive for competing fibre build.

1.21 There are also strong arguments against proceeding with the remedy as specified given unintended consequences where dark fibre is strung together to provide a route through competitive areas. All those who have invested in competitive fixed backhaul would be harmed if this gaming opportunity was exploited.

1.22 Finally, if Ofcom does proceed with dark fibre now, it cannot expand the remedy later without a fresh assessment of the costs and benefits (against a counterfactual without dark fibre). Ofcom should not expect that it will be easier to demonstrate proportionality for an expanded dark fibre remedy later simply by imposing dark fibre (and shifting the counterfactual) in the first instance on weak grounds. Ofcom would need to have very solid grounds for extending dark fibre into the access segment given the risk it poses to investment incentives. Even in uncompetitive areas, investment may still be commercial, and regulation will need to be designed carefully to support and bring this forward.

2 Removing duct and pole access usage restrictions is premature and cannot be justified in effectively competitive business markets

2.1 Ofcom wants to promote telecoms network competition by making it cheaper and easier to build new high-capacity business and residential networks. We understand the objective and have indicated our willingness to work with Ofcom to facilitate unrestricted access to our duct and poles.

2.2 But there is an extensive duct and pole access requirement on Openreach already which allows access for (primarily) residential and (some) business services (known as 'mixed usage' DPA). This will go a long way towards meeting Ofcom's investment and competition objectives as it already allows much cheaper access to Openreach's infrastructure, and the supply of multiple services over the networks created. Removing usage restrictions completely (as proposed by Ofcom in the PIMR) would allow the remedy to be used (for the first time) solely to target companies offering high-speed lines for large businesses, as well as networks carrying data for mobile operators (without the need to demonstrate a firm intention to deploy consumer broadband).

2.3 Such a substantial change in the duct and pole regime cannot be undertaken without assessing the need for it across both residential and business connectivity markets. Ofcom agrees that such an assessment is required and has commenced this consolidated review.[5] Without an assessment of competition issues through this lens (allowing a proper assessment of the proportionality of any spill-overs into already or prospectively competitive markets)[6] the remedy may over-reach risking damage to competition, investment incentives and ultimately customers. Ofcom can avoid this risk by sticking with mixed usage DPA until it has undertaken the necessary analysis.

2.4 If Ofcom nevertheless goes ahead, the proposed obligation is clearly too extensive (pending the assessment described above) and could adversely affect those who have already invested in competitive networks without regulatory help. In business markets which are already effectively competitive, the existing mixed usage duct and pole remedy is clearly enough – the removal of usage restrictions in these areas cannot be justified.

2.5 Competitive investment in full fibre networks would have the best chance of success if physical infrastructure access is facilitated more generally (rather than limited to Openreach). Virgin Media has physical infrastructure that would be attractive to network rivals in many cases (most notably in areas where Openreach's network is not usable by third parties). Virgin Media's narrower footprint is not an issue as ubiquity is not a pre-requisite for competitive investment in fibre infrastructure. Physical networks of different sorts (including non-telecoms infrastructure) can be combined to support

[5] Ofcom, 2018. *Physical Infrastructure Market Review*, 2 November, paragraph 1.5 'Over the coming months we intend to set out different elements of our holistic approach to regulation of business and residential markets, which will take effect from spring 2021.'

[6] If Ofcom wishes to intervene upstream of markets which are effectively competitive because it sees this as necessary spill-over to promote investment in multi-service networks (which will serve both competitive and less competitive markets), it must clearly set out the costs and benefits of doing so, ideally with a quantitative assessment. Ofcom has not undertaken such an assessment in the PIMR.

fibre deployment (and the Government has made clear that it wants any barriers to be addressed).

2.6 Any obligation would require Openreach to provide unrestricted access to its duct and poles to address any market power in downstream wholesale fixed access markets (and associated retail markets), as is currently the case for the mixed usage DPA obligation (and consistent with the legal and economic underpinning for such an intervention). Use of Openreach's physical infrastructure on regulated terms to host radio transmission/reception equipment to provide wireless connections is out of scope.

2.7 Principles must be established upfront so that the charging regime for UDPA ensures that Openreach will be able to recover the costs of its physical infrastructure network under different scenarios and does not bear risk that it is unable to manage.

Removing duct and pole access usage restrictions is premature pending Ofcom's integrated review of residential and business markets

2.8 There is an extensive duct and pole access requirement on Openreach already which allows access for (primarily) residential and (some) business services (known as 'mixed usage' DPA). This will be in place until 2021 (and is fully implemented from April 2019). Openreach are seeking to make this a 'best in class' access solution and have made significant progress to this end. Mixed usage DPA will go a long way towards meeting Ofcom's investment and competition objectives as it already allows much cheaper access to Openreach's infrastructure and the supply of multiple services over the networks created (which delivers economies of scope).

2.9 Ofcom now proposes (in the PIMR) to remove usage restrictions completely. This is explained by reference to Ofcom's July 2018 Strategic Policy Position in which Ofcom signalled a need to consider access networks and services more holistically, focusing first on continuing to open up Openreach's physical infrastructure. Ofcom also explained the need for a more holistic regulatory approach recognising that full-fibre networks can supply a range of different services for business and residential services.[7] Ofcom has already commenced this consolidated review of residential and business telecoms markets (as well as physical infrastructure) which will take effect 2021.[8]

Ofcom is seeking to mandate an unrestricted form of duct and pole access before it has undertaken the holistic analysis it says is required (and is doing)

2.10 We agree that a more holistic assessment looking across business and residential markets is sensible. But Ofcom has jumped the gun by seeking to mandate an unrestricted form of duct and pole access before it has undertaken the holistic analysis it says is required (and is doing).

2.11 To regulate access to physical infrastructure, Ofcom must show that competition

[7] BCMR 2018 Consultation, para 2.5-2.9, '…since the same underlying fibre network will increasingly be used to deliver a range of different services for business and residential customers, it makes sense to consider residential and business access markets together.' (para 2.6).

[8] BCMR 2018 Consultation, para 1.4.

problems in defined retail markets[9] arise due to Openreach's control of physical that infrastructure.[10] Or, more simply, Openreach faces insufficient competition from other telecoms operators (with their own physical infrastructure or using alternatives)[11] to deliver good outcomes for customers in the relevant retail markets.[12]

2.12 Absent a holistic review, Ofcom relies on its analysis in the 2018 BCMR Consultation and the 2018 Wholesale Local Access 'WLA' Statement (which concluded a market review in 2017) to show that Openreach has SMP in relevant wholesale markets and that 'BT's control and ownership of its physical infrastructure' is a 'key source of its market power'.[13] But these reviews (which are distinct in their focus as well as their timing) do not provide the basis for a finding that Openreach has market power nationwide through the control of its physical infrastructure <u>when business and residential market are considered together</u>.

2.13 Ofcom attempts to address this shortcoming by asserting that multi-service networks '*supplying the full range of downstream services to most premises within an area*' will become the '*predominant*' business model.[14] But an (un-evidenced) belief in a particular business model is not a substitute for a proper (holistic) analysis of retail markets, and is not an objective basis on which to define a new upstream market or justify remedies which extend into competitive markets. Nor has Ofcom given itself the opportunity to consider recent market developments and the implications of a geographically differentiated approach (again looking across residential and business markets).[15]

<u>Ofcom's piecemeal and discontinuous (rather than holistic) approach means that it misses key market developments</u>

2.14 Ofcom has not considered key market developments which provide important information on Openreach's alleged market power and therefore the remedy that may be required to deliver good outcomes for customers.

2.15 Specifically, Ofcom has ignored a major change in the wholesale local access market arising from [✂]. Openreach responded with its fibre deal which offers all CPs a discount if they can grow their fibre broadband customer base on Openreach's superfast or ultrafast network by an agreed proportion over a 3 or 5-year period. This means that wholesale superfast prices are potentially lower than the cap set by regulation for CPs who can meet the relevant volume requirements.

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[9] European Commission Recommendation on relevant product and services markets of 9 October 2014 (C(2014) 7174), paragraph 7.

[10] And that the Three Criteria test as set out the European Commission is satisfied. See European Commission Recommendation on relevant product and service s markets of 9 October 2014 (C(2014) 7174), paragraph 11 *et seq*.

[11] Also referred to in Ofcom's analysis as 'indirect constraints'.

[12] Previously, Ofcom has only imposed wholesale remedies on Openreach following an analysis showing that it has significant market power ('SMP') in the delivery of services which are needed as inputs to defined retail services that would otherwise not be competitively supplied. The same analytical approach must apply in assessing the need to intervene at the physical infrastructure level.

[13] PIMR 2018, para 3.97.

[14] PIMR 2018, para 3.17.

[15] PIMR 2018, para 3.98. Ofcom acknowledges that markets change. It states '…we are mindful that the telecoms sector is dynamic, with continually evolving demand and supply, driven by innovation in technology and end-user services and changes in consumer preferences'.

2.16 This points to a market-driven constraint on wholesale prices (and – indirectly – on prices for physical infrastructure inputs) as well as significant countervailing buyer power. Ofcom acknowledges that such a constraint is possible[16] but has not treated the price reductions (and the circumstances in which they were offered) as strong evidence of this constraint. It does not mention the episode at all, even though it is a game changer with significant implications for the assessment of market power.

2.17 These events clearly show that Openreach has been obliged to compete (fairly) in the wholesale local access market [✂].

2.18 Openreach's control of its physical infrastructure is not a source of market power where [✂]. It certainly cannot be assumed that BT has 'enduring' SMP at the wholesale level, and this brings into question any inferred market power upstream.[17]

2.19 The Openreach fibre deal will deliver lower prices to CPs (and their end customers) due to competition between two large entities – BT and Virgin Media - each with their own physical infrastructure. And there are other competitors (such as Gigaclear) with ambitious plans who have grown (to date) by using innovative and low-cost methods for laying their own fibre (such as narrow trenching).[18]

2.20 There is a strong case, in light of these developments, to pause before mandating unrestricted duct and pole access (leaving mixed usage DPA in place) to allow Ofcom, as part of its integrated market review, to fully assess and take account of relevant market developments. It could then assess (with full information) the competitive constraints on Openreach from existing network rivals (and their likely developments) as well as how well this competition is delivering good outcomes for end customers.

2.21 This would ensure that any UDPA remedy could be properly and proportionately targeted on areas where objective assessment would show Openreach as having market power, and where mixed usage has not been (and is unlikely to be) effective in addressing it.

If UDPA is mandated earlier, there is no justification for broadening the remedy beyond what currently exists in business markets that are already competitive

2.22 If UDPA is mandated earlier (without the required holistic market analysis) there is no justification (or legal basis) for broadening the remedy beyond what currently exists (i.e. mixed usage DPA) in business markets that are already competitive. Regulating where there are existing or emerging competitive pressures risks stifling innovation and making investment less attractive. This would harm customers in the longer run.

2.23 Even though access to Openreach's ducts and poles has not been available for specific business purposes, a lot of rival network (focused on leased lines) is present in certain areas, creating enough choice for business customers that Ofcom is satisfied the market

[16] PIMR 2018, para 3.136.
[17] PIMR 2018, para 3.146.
[18] https://www.gigaclear.net/gigaclear-signs-international-contractor-lite-access-technologies-to-deliver-full-fibre-broadband-to-west-oxfordshire

is competitive. The Central London Area 'CLA' is considered by Ofcom to be effectively competitive in certain wholesale (and we presume associated retail[19]) markets. The other HNR Metro areas should also be found to be effectively competitive given the high density of physical infrastructure within reasonable reach of customers in these areas (as set out in section 3).

2.24 If network competition already exists (and is delivering well for customers in retail markets as in the CLA), then making subsequent entry easier may have unintended consequences. Returns on investment for the first movers will be less certain and investment incentives may be undermined, which would not be good for customers.

2.25 To address this, Ofcom should retain the requirement that duct and pole access is used primarily for consumer broadband (i.e. mixed usage DPA) in geographic areas where the supply of business connectivity is found to be effectively competitive, to avoid regulating where this is not required, and to avoid the attendant risk of distorting competition unnecessarily in those areas.

Alternative network investment is more likely to be facilitated if there are viable options for accessing physical infrastructure more generally (i.e. not just Openreach's infrastructure)

2.26 As discussed above, physical infrastructure cannot act as a source of market power where there is enough of it in the hands of rival telecoms operators to deliver competition in retail (or wholesale) markets and good outcomes for customers (for example in certain business markets). But for any remaining pockets of concern, competitive investment in full fibre networks would have the best chance of success if physical infrastructure access is facilitated more generally (rather than limited to Openreach). In many cases, it is not clear that Openreach has distinct advantages from control of its physical infrastructure over other owners of physical infrastructure.

2.27 Ofcom's reasoning is as follows:

- First, non-telecoms physical infrastructure is not seen as an '*attractive alternative to infrastructure that has been specifically built for scale deployment of telecoms networks*',[20] (except in isolated cases which are costly to address where non-telecoms infrastructure may be used as an 'add-on' to a scale deployment). Ofcom cites various reasons why using such infrastructure at scale is either not viable or involves higher cost and operational complexity. It is, Ofcom provisionally concludes, a '*poor substitute*' for telecoms physical infrastructure, and so is outside the relevant product market.[21]
- Second, although non-BT telecoms infrastructure is included in the relevant product market (so exercises a competitive constraint to some extent) it is not judged by Ofcom to be an effective competitor to BT in the geographic areas

[19] There is no retail market analysis in the 2018 BCMR Consultation.
[20] PIMR 2018, para 3.35.
[21] PIMR 2018, para 3.38.

where they overlap (as BT is deemed to have SMP).[22] Virgin Media (Ofcom says) lacks the ubiquity of BT's physical infrastructure and cannot match the cost and capacity advantages of BT's lead-in infrastructure.[23] Alternative infrastructure used for leased lines (Ofcom says) would not be attractive to an access seeker wishing to deploy a multi-service network and, in any event, would be higher cost and limited to high network reach areas.[24]

2.28 Ofcom reaches these provisional conclusions by considering the relative attractiveness of product characteristics[25] primarily to a specific type of user, namely, those building multi-service networks at scale.[26] Little reference is made to different business models (e.g. business focused),[27] nor to actual usage of physical infrastructure (in the UK and other countries), nor is it clear that Ofcom has systematically asked users for their views.[28]

2.29 We disagree with the advantages claimed by Ofcom in respect of Openreach's physical infrastructure. Contrary to Ofcom's reasoning, the evidence below suggests that Openreach will face effective competitive constraints from alternative infrastructure in many cases. To the extent access obligations are required, it is not clear that Ofcom's objective to promote competitive fibre investment is best met by a narrow BT-focused intervention. A more holistic consideration of physical infrastructure is required (as indicated by the Government as part of the Future Telecoms Infrastructure Review).[29]

Case studies indicate that non-telecoms physical infrastructure may be viable in more than isolated cases

2.30 Evidence of non-telecoms physical infrastructure being used in the provision of telecoms services is set out in the Openreach PIMR submission and the attached Analysys Mason report (the 'AM report'). The AM report identifies nuances in the

[22] Ofcom does not explore the competitive constraint from Virgin Media as part of its market definition because it starts with a focal product that includes all telecoms physical infrastructure. It can be inferred, therefore, that Ofcom considers Openreach and Virgin Media to be competitors but not effective competitors.

[23] PIMR 2018, para 3.110-3.119.

[24] PIMR 2018, para 3.121-3.123.

[25] It is a long-established principle of market analysis (for regulatory or competition law purposes) that product characteristics are not enough, on their own, to determine market distinctions or competitive constraints. (see, for example, European Commission Recommendation on relevant product and services markets of 9 October 2014 (C(2014) 7174). There is no substitute to understanding demand and how product characteristics influence product choice (as well as price/quality trade-offs). Ofcom accepts this point (PIMR, footnote 20) but has still not undertaken a robust analysis of demand.

[26] We don't think that regulation should be designed to support a 'predominant' business model (namely, scale deployment by multi-service operators). Regulation should promote competitive processes and not favour the interest of particular competitors. Ofcom's duties refer to the promotion of competition generally and not the protection of specific competitors - see the Communications Act s3(1) and 3(4). Further, competition law, the principles of which underpin the SMP regulatory regime, is focussed on the protection of the competition process (acknowledging that, for example, inefficient competitors should be allowed to fail and not protected).

[27] We would expect CityFibre (a multi-service operator with scale ambitions) to have very different preferences to Colt (a business specialist), particularly on issues such as the importance of ubiquity (which users with more targeted plans will be less concerned about).

[28] Ofcom says that it has '*engaged with a range of potential access seekers to understand the importance of different characteristics affecting the suitability of different types of physical infrastructure*', PIMR, para 3.22. But this does not constitute a comprehensive assessment of demand. Ofcom does not set out the number of access seekers asked for input, their type, nor the substance of their submissions. Without such evidence, Ofcom's statements (for example, that access seekers combine self-build and alternative infrastructure for reasons of '*necessity, rather than preference*' PIMR, footnote 85) can be treated as assertion.

[29] DCMS, 2018. *Future Telecoms Infrastructure Review*, page 6.

suitability of different types of infrastructure which Ofcom's broad-brush assessment has missed.

2.31 Low voltage electricity infrastructure is highlighted by AM as having been used successfully in the deployment of full fibre networks. Several international case studies are cited including the SIRO joint venture in the Republic of Ireland between Vodafone and ESB, and the Enel/Open Fibre partnership in Italy. In the UK, the report gives the example of TrueSpeed which has recently signed a deal with WPD to use its electricity network for FTTP deployment with the aim to reach 75,000 premises.

Network ubiquity is not a prerequisite for competition

2.32 Ofcom explains the importance it attaches to ubiquity as follows:

'*Telecoms networks are built to connect to premises, or sites. Therefore, the ability to connect to as many residential premises or business sites within a deployment area as possible, and the flexibility and certainty to be able to provide any connection in the future quickly and without significant additional connection cost, is important to access seekers*.'

A ubiquitous telecoms physical infrastructure (both in terms of the overall coverage it provides, and the contiguity of that coverage within a particular area) provides this. Combining multiple infrastructures to provide the same level of connectivity introduces additional cost, time and operational complexity, which is likely to lead access seekers to prefer use of a single telecoms physical infrastructure where possible.'[30]

2.33 Ofcom also notes that combining self-build and alternative infrastructure (i.e. not relying exclusively on a single physical infrastructure) may be undertaken in some cases but '*in general, this is based on necessity, rather than preference*.'[31]

2.34 Contrary to these assertions, the evidence suggests that ubiquitous coverage is not critical to competition and that network rivals can compete effectively without going to every premise or site in an area.

2.35 It is commonplace for suppliers to enter and operate successfully in telecoms markets without being ubiquitous.[32] In fact, operators often choose to target the most profitable customers and geographic areas, or are prepared to 'mix and match' self-build with wholesale inputs if they are seeking wider coverage.[33] Entry on such a basis has been successful both in the UK and in other countries.

[30] PIMR 2018, para 3.106-3.107.
[31] PIMR 2018, footnote 85. Ofcom support this by quoting the view of only one operator (PIMR 2018, Annex 8, footnote 250).
[32] Economic theory allows for the possibility that a rival can exercise a competitive constraint without contesting all of the same customers provided that the activity to win customers and gain a network position puts sufficient competitive pressure on existing firms. This is typically the case where there is uncertainty over the precise customers that are contestable in this way, resulting in a pricing constraint across all customers.
[33] Ofcom has already reflected this in business markets by defining distinct geographic markets. Put simply, rivals target their infrastructure build in particular areas where the economics are favourable – they don't seek to achieve ubiquity nor is this required for them to compete successfully.

- Virgin Media's coverage, for example, is materially less than 100% in the UK suggesting that ubiquity is not central to its commercial model and this has not proved a barrier to commercial success in areas where it operates.
- Smaller operators such as Hyperoptic, CFL and TrueSpeed have also successfully adopted targeted strategies in the UK, as have business specialists such as Colt, and Zayo.
- Even operators with scale ambitions (such as CityFibre) are unlikely to cover entire urban areas (as observed in the AM report).

2.36 Equally, providers often successfully adopt a mixture of deployment options (including self-build, as well as seeking access, potentially to multiple physical infrastructures) to meet both cost and differentiation objectives (for example adopting differentiated network designs and using innovative civil engineering techniques to reduce deployment cost).[34] The AM report comments that a 'mix-and-match' approach could potentially lead to innovation from potential access seekers, a competitive benefit that may not have been recognised by Ofcom.'[35] Such benefits would need to be weighed against any additional cost, time or operational complexity of adopting such a strategy before concluding that these were barriers (an analysis which Ofcom has not done).

2.37 These suppliers do not need to rely on one physical infrastructure network to address all their customers. Other utility infrastructure networks offer clear alternatives to BT's network as in the case of TrueSpeed's arrangement with WPD. As AM show, it is also clear that breaking in and out of different networks has been overcome in a number of instances and does not constitute a significant barrier to entry.

2.38 In placing so much weight on ubiquity, Ofcom also discounts a role for the Access to Infrastructure Regulations,[36] which are due to be reviewed in 2019 (as set out by the DCMS in the Future Infrastructure Market review).[37] Such regulations clearly show the potential value in the use of 'mix and match' deployment options. More generally, the Government has made clear that it would like to see any barriers to the use of non-telecoms infrastructure addressed (including by Ofcom working with the other sectoral regulators).[38]

2.39 The evidence does not, therefore, indicate that competition requires access to a single ubiquitous physical network, and a preference amongst users for access on this basis (if it does exist) is not sufficient to find market power.

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[34] It is possible to differentiate a service through the architecture of the underlying physical infrastructure (particularly for business services) and this drives incentives to self-build rather than be tied to the architecture of existing physical infrastructure. Innovation in civil engineering techniques can make self-building economically viable. Ofcom has celebrated such innovation saying 'micro-trenching and slot-trenching enables narrower digging of trenches to lay micro-ducts which fibre can then be blown into, significantly reduced the time and cost of digging and repairing the carriageway', para 3.9 and footnote 31, https://www.ofcom.org.uk/__data/assets/pdf_file/0008/101051/duct-pole-access-remedies-consultation.pdf.

[35] Ofcom find that 'mix and match' usage '*is based on necessity rather than preference*' but Ofcom support this by quoting the view of only one operator (PIMR 2018, Annex 8, footnote 250).

[36] http://www.legislation.gov.uk/uksi/2016/700/pdfs/uksi_20160700_en.pdf

[37] DCMS, 2018. *Future Telecoms Infrastructure Review*, p.6

[38] DCMS, 2018. *Future Telecoms Infrastructure Review*, pp. 6 and 253, '*Ofcom should work collaboratively with other regulators to ensure that multi-utility passive sharing opportunities are explored, and barriers addressed*.'

Differences in lead-in costs on which Ofcom relies have not been demonstrated

2.40 Ofcom also points to differences in lead-in costs between BT and Virgin Media as a justification for finding BT to have SMP in areas where they compete. Specifically, Ofcom asserts that lead-ins from Virgin Media's network would be more expensive for third parties than using Openreach's lead-ins.

2.41 However (as set out in detail in the AM report) Virgin Media's deployment approach means that lead-in lengths are considerably shorter.[39] Overall, there is no evidence that there is likely to be a material difference in connection costs per premise between Openreach and Virgin Media, nor that any such difference (if its exists) is material relative to the value at stake.[40] Nor does Ofcom explain why Virgin Media has not been impeded by these alleged disadvantages. In fact – as discussed above, it competes effectively with rivals using its own physical infrastructure (which it has been extending).

2.42 As pointed out by Openreach in its submission, in some parts of the country Openreach cables are directly buried and therefore not suitable for sharing and, further, there are geographies in which Virgin Media has duct and Openreach does not.

A 'one size fits all' approach to physical infrastructure access will not deliver Ofcom's objectives

2.43 There are nuances in whether access to physical infrastructure (without restriction) is required to promote infrastructure competition and better outcomes for customers. Ofcom's 'one size fits all' proposal risks undermining incentives of operators to differentiate and innovate which would not be in the interests of final customers.[41]

2.44 There is no case for going beyond a mixed usage form of DPA in effectively competitive business markets. In fact, the case for going beyond mixed usage now, rather than in 2021, more generally is weak given that Ofcom has not analysed key market changes which indicate a high degree of existing infrastructure competition.

2.45 Where access is required, Ofcom has not justified loading these obligations on Openreach nor is this the best way of promoting competitive fibre investment (which is Ofcom's policy objective). We disagree with the advantages claimed by Ofcom in respect of Openreach's physical infrastructure (particularly vis-a-vis Virgin Media). The evidence indicates that Virgin Media's physical infrastructure is much more suitable for fibre deployment than suggested by Ofcom.

2.46 It is very likely that altnets (and indeed Openreach) would value access to the Virgin Media infrastructure to reduce costs of fibre deployment and support plans for bringing ultrafast services to customers quickly and widely in the years to come. There is no reason, therefore, why Virgin Media should not have some form of obligation to provide access to its infrastructure where it passes customers' premises. It is also unclear that

[39] Virgin Media's network is built much closer to the customer premises (usually from the kerb) than Openreach's (where [✂] of premises are served by Openreach from a nearby pole).

[40] For valuable business sites, any lead-in cost difference (were they to be substantiated) will not be large relative to value.

[41] Equally, regulatory best practice requires targeting intervention to where it is needed and avoiding imposing regulatory burden where unnecessary Communications Act, s3(3) and s6.

Ofcom's proposals go as far as the Government would like in addressing any barriers to the use of non-telecoms infrastructure as highlighted in the Future Telecoms Infrastructure Review.

Unrestricted access to Openreach's physical infrastructure (if implemented) would be available to address any market power in downstream fixed markets

2.47 Any obligation would require Openreach to provide unrestricted access to its duct and poles to address any market power in downstream wholesale fixed access markets (and associated retail markets), as is currently the case for the mixed usage DPA obligation (and consistent with the legal and economic underpinning for such an intervention).

2.48 This is consistent with Ofcom's strategic objective to enable more fibre investment by alternative providers and by Openreach.[42] Giving unrestricted access to Openreach's ducts and poles is intended to give 'greater flexibility to lay fibre networks that serve residential or business customers'.[43] It is clear, therefore, that Ofcom wishes to facilitate (through regulated access to BT's physical infrastructure) deployment of the fibre elements of telecoms networks not deployment of telecoms network of any description.

2.49 Use of BT's physical infrastructure on regulated terms to host radio transmission / reception equipment to provide wireless connections is therefore out of scope. Ofcom cannot impose regulation to facilitate the deployment of wireless connectivity which forms an input to downstream retail markets where Ofcom has not identified consumer harm.[44]

2.50 In any event, there can be no suggestion that Openreach has any enduring advantage in this context, as providers of wireless connectivity can host such equipment on dedicated masts (e.g. mobile cell site masts), municipal street furniture (e.g. lamp posts), or buildings. Equally, Openreach does not have a unique or ubiquitous 'overhead network' suitable for mobile operators.

2.51 Nor would it be proportionate to expect Openreach to undertake potentially costly 'network adjustments' for mobile networks given the large number of sites which 5G might require, and the fact that such network enhancements would not be of shared value to other users (as Ofcom has argued is the case for network adjustments required for the deployment of fixed networks). Mobile operators should be responsible for the network costs that their services entail, and these cannot be passed through to customers of fixed suppliers (with Openreach waiting 40 years until it recovers its

[42] PIMR 2018, para 1.2.
[43] PIMR 2018, para 1.4.
[44] Ofcom has previously found wireless access services to be outside of the market for local fixed access connections including copper/fibre or cable connections (WLA Statement, March 2018, para 3.115). In its most recent assessment of mobile markets, Ofcom found competition in mobile retail markets to be functioning well. Ofcom states '*having looked at competition in the UK mobile services sector today, we consider that the current provision of mobile services is functioning well, with competition between the four MNOs delivering good outcomes for consumers*', para 5.17 https://www.ofcom.org.uk/__data/assets/pdf_file/0019/130726/Award-of-the-700-MHz-and-3.6-3.8-GHz-spectrum-bands.pdf

costs).[45]

The regime for regulating physical infrastructure should provide long-term stability, predictability and a fair opportunity for Openreach to recover efficiently incurred costs

2.52 Certainty is important for BT as the owner of the assets which Ofcom is proposing that Openreach sells access to. Sharing of BT's physical infrastructure on regulated terms reduces the cost and risk of building full fibre networks, allowing active services to be offered competitively by rival networks. Following this logic, it is Ofcom's intention that, over time, rival full fibre networks (facilitated by physical infrastructure sharing) will compete more effectively for the current volumes of Openreach's active services.

2.53 In this context, a long-term view is needed of the sustainability of duct and pole pricing. If full fibre competitors are particularly successful in winning volumes of active services from Openreach, then two possibilities arise. First, overall occupancy levels might decline if new network providers displace Openreach in the market for active services and require less use of physical assets than Openreach in the supply of these services. For cost recovery, Openreach would then need to raise its active prices to increase its notional contribution to physical infrastructure costs but, in doing so, make itself less competitive. Second, Openreach may set active prices to allow itself to compete but, in doing so, it may not recover costs across both levels of the value chain taken together. No actions available to Openreach will allow it to recover costs.

2.54 The duct and pole pricing regime should ensure that cost recovery is not sensitive to these dynamics. In other words, whatever happens to Openreach's share of active services, there should be a fair opportunity for Openreach to recover the efficiently incurred costs of providing shared access to its physical infrastructure. Openreach should not bear risks from fluctuations in active volumes in seeking to recover physical infrastructure costs. This is a principle that Ofcom should state up-front so that this aspect of regulatory risk can be mitigated, and so that DPA access takers are aware that the regime operates in this way. If Ofcom does not abide by this principle, it would allocated a risk to Openreach that it is not well placed to manage, in turn resulting in a premium on financing costs, and higher prices for duct and pole access than would be the case under a regime which only allocated to Openreach those risks it could reasonable manage.

2.55 Openreach is obliged to fund network adjustment costs (up to a financial limit) to make the shared physical infrastructure asset usable. A forecast allowance is made for this cost and added to the regulatory cost base. Ofcom notes that this could reach around £700m if entrants achieve a 40% share.[46] A regime where Openreach invests in shared infrastructure at the behest of competitors and where these costs (and existing assets)

[45] A further concern is that the DPA regime could add to unnecessary costs being incurred if it were to result in a requirement for Openreach to provide capacity relief and/or adjust its existing infrastructure when alternative non-telecoms infrastructure is available and suitable for network operators to use. The DPA regime should not crowd out the use of such infrastructures and require the unnecessary duplication of physical networks which customers will ultimately need to fund.

[46] PIMR 2018, footnote 186.

are recovered over a 40-year life, requires a more enduring regulatory framework which allows risks (for example technology risk) to be allocated appropriately.

2.56 As part of the establishment of an enduring regime, a mechanism is a required for addressing in-period changes (for example in network adjustments expenditure) beyond the reasonable control of Openreach management (e.g. a trigger for intervention where actual and forecast expenditure diverge beyond agreed tolerances and 'true up', which should include any additional financing costs incurred as a result).

2.57 This regime would need to be specified in advance of the implementation of the consolidated review in 2021. And the features of the regime should form part of Ofcom's consultation in the run up to 2021.

3 Ofcom's analysis of business connectivity markets overstates BTs market power

3.1 We set out in this section why Ofcom has underestimated the degree of competition in business connectivity markets. Even before considering the impact of physical infrastructure access:

- Ofcom has not made the case that Openreach has SMP in the HNR Metro areas; and
- Ofcom has not demonstrated that Openreach has SMP in the VHB segment in many additional areas.

3.2 In the business connectivity markets downstream of physical infrastructure, an analysis of demand and supply factors points to clear differences in competitive conditions between services at 1Gbit/s and below, and the VHB segment. Taking these differences into account, there is a lot more competition in business connectivity markets than Ofcom's analysis suggests.

3.3 VHB customers are larger, higher value and tend to buy through tenders and long-term contracts. Ofcom's own analysis shows that competitors to Openreach are prepared to dig (and create new duct) approximately twice as far to serve these customers than for lower bandwidth customers.[47] The evidence points strongly to a highly contested VHB segment (particularly in the HNR Metro areas), and a lower bandwidth segment which will increasingly be cannibalised by FTTP (which will also develop, first, in areas of high population density).

3.4 These findings underpin our assessment in section 2 that Ofcom has not made the case for removing (completely) the usage restrictions on duct and pole access in these competitive areas and segments.[48]

3.5 If, notwithstanding this, Ofcom were to introduce UDPA everywhere, then it must properly reflect the increased competitive pressure that this will unleash in business connectivity markets. Ofcom does not, however, do this: it gives no weight to the competitive impact of DPA (either mixed usage or UDPA) in its market definition analysis, and there is only a very limited consideration in its assessment of market power.

3.6 This is an error because DPA will materially increase CPs' ability and incentive to deploy fibre (including in the time-period of this market review), and this will materially increase the competitive constraints on Openreach. The existing mixed usage DPA remedy already allows businesses to be targeted (provided an intent can be shown to deploy to consumer broadband at some point). The removal of usage restrictions (i.e.

[47] Ofcom note that the maximum economic dig distance for VHB services is significantly longer than for lower bandwidth services giving the example of a three-year payback period: the maximum economic dig distances for 100 Mbit/s and 1 Gbit/s are 27m and 43m respectively, while for 10 Gbit/s Ofcom says it is 95m. BCMR 2018 Consultation, paragraph 4.57.

[48] If, as we suggest in section 2, Ofcom did not remove the duct and pole usage restrictions in markets which are effectively competitive (but kept mixed usage DPA) then HNR Metro areas should still be deregulated as well as VHB across a larger geographic footprint. Beyond these areas, where Ofcom might impose DPA (without restrictions), we expect competition to be more intense allowing the areas where competition is considered to be in prospect to be defined more broadly.

UDPA) would accelerate this impact by allowing solely business customers to be targeted, thereby attracting a much broader range of CPs (who a focus on business services) to take up duct and pole access (in addition to the multi-service operators who can already supply business services under the mixed usage regime).

3.7 Access takers would face materially different supply economics. Using Ofcom's own model, AlixPartners finds material cost savings from using duct and pole access for business services (e.g. a 70% cost reduction for a 1Gbit/s circuit requiring 100m of duct).[49] This could substantially increase the viable supply distance between a customer site and a rival's infrastructure by a factor of ten.[50]

3.8 CPs have been gearing up to consume mixed usage DPA for some time (as it was mandated as part of the WLA Statement in 2018 with full implementation in spring 2019). Given the cost savings available, CPs have strong incentives to get to high value customers quickly, and secure their business through contracts. Customers are already delaying procurement decisions pending the outcome of PIMR. The active engagement of CPs in DPA implementation progress meetings (attended by CP CEOs, hosted by Ofcom and chaired by Sharon White) suggests a high degree of interest and readiness. Ofcom is wrong, therefore, when it concludes that there will be little take up of duct and pole access in this market review.

3.9 Without capturing the distinct dynamics of the HNR Metro areas and the VHB segment, as well as the game changing effects of DPA (mixed usage as well as UDPA), Ofcom's market power findings (which are not sufficiently forward looking and do not appear to meet the three criteria test) are not robust and must be revised.[51] Its proposed remedies are also not robust: they are not required in areas where effective competition exists now, and lighter regulation is appropriate where it is likely to emerge in the next two years. Regulating where it is not required will interfere with the dynamics of infrastructure competition which Ofcom expects to deliver benefits for customers.

There are clear differences in competitive conditions (between geographies and bandwidths) which reflect the characteristics of end customer demand

3.10 The competitive landscape for business connectivity – now and looking forward – reflects demand characteristics for different types of customer.[52] Competition conditions are influenced by customer size and value, purchasing behaviour,

[49] Assuming a 5 year contract.

[50] To illustrate, Ofcom's model indicates that the one-off cost of providing a 1Gbit/s circuit which requires 100 metres of new duct construction is £11,000 in present value terms over five years, but only £2,300 if the duct is already in place.

[51] Furthermore, the EU Recommendation on relevant markets notes that markets may justify regulation ex ante where '*market structure does not tend towards effective competition within the relevant time horizon*.' https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0710&from=EN. In section 4 we also consider the third criterion, sufficiency of ex post competition law.

[52] Ofcom has not explored the drivers of competition from the bottom up by undertaking an analysis of the downstream retail markets (and segments), notwithstanding that the correct approach is to start the market analysis by considering the dynamics in the retail market (see European Commission Recommendation on relevant product and services markets of 9 October 2014 (C(2014) 7174), paragraph 7).

site/demand clustering, and migration patterns (as set out in greater detail in the Openreach response to the BCMR consultation).[53]

3.11 These features, together with other evidence on the functioning of the market, point to (at least): (i) a competitive VHB segment; and (ii) a lower bandwidth market which will be increasingly cannibalised by ultrafast broadband.[54]

3.12 In the same vein, the geographic markets associated with a (properly defined) VHB market and the (separate) lower bandwidth market (i.e. 1Gbit/s and below) are also likely to be distinct, reflecting how different demand characteristics drive different build incentives.

Demand characteristics in the VHB segment drive intense competition underpinned by buyer power

3.13 Customers with demand above 1Gbit/s (typically MNOs, very large businesses and data centre providers)[55] tend to be sophisticated and well-funded. They issue tenders or engage in a dedicated search for infrastructure partners to provide their connectivity requirements. This means long-term contracts and partnerships are favoured, whereby lower prices can be secured by helping to de-risk investment by the infrastructure provider (for example, investment in physical infrastructure to connect a site, and where DPA is used, investment in fibre).

3.14 Customers will factor foreseeable price reductions (due to DPA and increased infrastructure competition more generally) into their purchase decisions, potentially delaying a tender if a cost reduction opportunity is anticipated (see evidence below). Equally, business lost in this context cannot be quickly won back because of the long-term nature of these contracts.[56]

3.15 Such large-scale long-term commercial agreements can drive fierce price competition given the 'all or nothing' nature of such transactions. CPs do not know the precise network locations of their rivals, and this uncertainty can also drive keen pricing as providers factor in the chance of losing a bid, even where the risk is low in reality.

3.16 Examples (in the public domain) of the types of supply arrangements for these customers include: (i) supply of mobile backhaul to Three and O2 using a combination of SSEs existing fibre ring, Openreach exchanges and Thames Water's sewage

[53] As Ofcom also indicates in Chapter 3 and Annex 7 of the 2018 BCMR consultation that there is a very wide range of services sold in wholesale and even more so retail markets all enabled by similar infrastructure. Indeed, in business markets downstream of DPA we observe differences in price by a factor of 1000 from lowest to highest in business markets; compared to a factor of perhaps three at most in consumer broadband. It would be very surprising if a hypothetical monopolist could not make a profit by grouping customer segments within this very wide range in business markets.

[54] There may be additional distinctions for example between MNO backhaul and other business access within the business access market as set out in the Openreach response to the BCMR consultation.

[55] Ofcom has appropriately deregulated data centres reflecting the demand and supply conditions which drive high levels of competition. There are many other high value sites with very high bandwidth demand (including CP nodes, and sites with enterprises in the financial services and broadcast sectors as well as MNO sites) that are competitively supplied in the same way and should be treated accordingly.

[56] This also means that the benefits of competition (for example, from a switch to a CP using duct and pole access away from Openreach Ethernet) would be locked in for some time.

network;[57] (ii) supply of high-density fibre and duct network to Kao Data's datacentre campus in London by euNetworks;[58](iii) supply of a long distance fibre ring by Zayo to multiple customers; [59](iv) fibre supply to Arqiva's neutral host network by CityFibre (a scale pilot at this stage)[60] and a similar self-deployment of fibre by WIG with O2 as the anchor customer;[61] and (v) supply of dark fibre to Google in St Pancras by altnets. It is likely that the duration of the contracts in all of these examples is in excess of 3-5 years and sometimes longer – in particular for MNO backhaul.

3.17 In addition, [✂].

3.18 Examples confidential to BT's downstream business divisions are provided in the text box below.

[✂]

<u>Demand in the lower bandwidth segment at 1Gbit/s and belowmarket is characterized by less buyer power, more standardised products and increasing substitution from FTTP</u>

3.19 Demand in this segment is more fragmented and 'off the shelf' products are more common. 'Internet Access' solutions for enterprises and SMEs (e.g. external communications and connectivity to public cloud and Data Centres) can also be contested by operators with FTTP products targeted at residential customers. In addition, software-based technology (such as software-based wide-area networks) is expected to increase the extent of existing competition from vendors and players without assets.

3.20 Lower bandwidth demand also comprises private connectivity between enterprise sites requiring high performance and availability ('site connectivity'). These customers will increasingly embrace hybrid networks combining IPVPN (a form of private network that is software based so does not require a leased line[62]) with internet access. At the retail level, customers with multi-site requirements can be (and are) supplied by a range of

[57]http://www.threemediacentre.co.uk/news/2018/three-uk-sse-enterprise-telecoms.aspx;
https://www.ispreview.co.uk/index.php/2018/09/sse-enterprise-telecoms-three-uk-and-o2-grow-london-fibre-network.html;
https://www.ispreview.co.uk/index.php/2018/07/sse-enterprise-telecoms-unbundle-177-more-bt-exchanges-in-the-uk.html

[58] Kao Data is the UKs leading entrant to the wholesale co-location market. The new infrastructure is advertised as providing unique routing opportunities, taking advantage of Harlow's 'strategic' location between Dublin and Amsterdam. It also offers fast connection to Slough, to the West of London, and Docklands in the East of London
https://www.globalbankingandfinance.com/kao-data-invests-in-eunetworks-high-density-fibre-as-part-of-a-north-london-artery/

[59] In November 2018, Zayo announced that it is extending and upgrading a new long haul fibre ring in the UK to enable multiple tenants to traverse the country via the most direct, low-latency paths. https://investors.zayo.com/news-and-events/press-releases/press-release-details/2018/Zayo-Expands-and-Upgrades-Long-Haul-Fiber-in-the-UK/default.aspx

[60] Arqiva have recently announced a scale pilot (claimed to be UK's largest) neutral host network in Hammersmith & Fulham. Their network will have over ninety equipment cabinets connected using 15km of fibre provided by CityFibre. Arqiva say they will deploy a centralised C-Ran architecture and 5G. The network uses street furniture drawn from their wireless city concession contract with Hammersmith & Fulham, which was signed in 2014. https://www.arqiva.com/news/press-releases/arqiva-and-cityfibre-deliver-uks-largest-pilot-of-5g-ready-small-cell-infrastructure-/

[61] WIG has deployed their own fibre in Aberdeen and are planning a larger deployment in the West Midlands between Coventry and Birmingham. O2 will be anchor for both. https://www.ispreview.co.uk/index.php/2018/11/o2-uk-preps-europes-largest-fibre-connected-small-cell-network.html

[62] [✂]

operators who can package and re-sell the requisite connectivity (and often IT) inputs.[63]

3.21 BT and Openreach expects both internet access and site connectivity to be increasingly challenged by FTTP. Indeed, Openreach's fibre cities business case assumes [✂].

3.22 In summary, the bandwidth segment at 1Gbit/s and below is increasingly commoditised with vigorous competition at the retail level pushing down margins; and increasingly competitive wholesale supply including by FTTP altnets who are expanding their presence including in second tier cities.[64]

3.23 The evidence provided above, and in the Openreach submission, indicate that the market at 1Gbit/s and below on the one hand, and above 1Gbit/s on the other, have distinct characteristics both on the demand and supply side. Separate product markets should be defined to allow more appropriate targeting of SMP findings and any associated regulation to avoid regulating where this is unnecessary and may damage the competitive process (as discussed further below).

<u>Geographic boundaries are likely to differ between bandwidths at 1Gbit/s and below and above 1Gbit/s</u>

3.24 The geographic markets associated with these product markets are also likely to be distinct, reflecting how distinct demand characteristics drive different build incentives. In simple terms, network rivals will tend to dig further – extending geographic boundaries – to reach higher value customers.[65]

3.25 Ofcom recognises the differences in build incentives driven by customer value but does not reflect this in its analysis of geographic markets. It notes that the maximum economic dig distance for VHB services is significantly longer than for lower bandwidth services giving the example of a three-year payback period: the maximum economic dig distances for 100 Mbit/s and 1 Gbit/s are 27m and 43m respectively, while for 10 Gbit/s is 95m. Ofcom note therefore that *'a supplier of a VHB service would not necessarily be willing to dig to provide lower bandwidths, as it may not find it economic to do so'*.[66] We

[63] There are many retail competitors who are well versed in buying and packaging connectivity and IT inputs from a variety of providers, nationally and internationally. This includes software specialists, system integrators and many other resellers in addition to telecom operators such as TalkTalk, BT Enterprise, Virgin Media or Colt and a large number of small local resellers serving SMEs. Most retail providers of business connectivity bundle other services with connectivity – including cloud services, managed email, voice, cyber security, IT and other services. The connectivity input can be supplied by Openreach, Virgin Media or other wholesale providers using mix and match approaches (e.g. combining some or all of self-build, Openreach active services, and wholesale inputs from altnets).

[64] Increased competition from FTTP providers such as CityFibre, Hyperoptic, Gigaclear and others in capital and second tier cities (often supported by local councils as anchor tenants) is acknowledged by Ofcom (for example at paragraphs 3.24, 4.73, 6.22, 6.72, 7.49 and Annex 14 (as well as in section 9 in relation to Hull). We use the term 'second tier' cities as the non-capital cities of the UK. See also:
https://people.uta.fi/~atmaso/verkkokirjasto/Second_tier_cities_policy.pdf

[65] The interactions between geographic and product market definition were noted by the Competition Appeal Tribunal as follows: *'if [the CAT] … set aside its product market definition, [Ofcom] … would also have to revisit its decision on geographic markets. In particular, we would envisage that if, as a result of its reconsideration, Ofcom were to define the product market(s) differently, it would likely have to adjust the main criteria that drive the design of its infrastructure presence.'* CAT Judgment in BT's appeal against Ofcom's 2016 BCMR, paragraphs 157, 336 and 400.

[66] Ofcom note that these indicative results may be distorted as a result of Openreach pricing (given Openreach is a monopolist and VHB prices have been deregulated), which Ofcom claim are likely to be inconsistent with prices that would prevail in a competitive market. Yet, as noted further below, prices in the VHB segment have been falling as a result of increased competition. It seems unreasonable for Ofcom to justify its SMP finding based on a hypothetical counterfactual of VHB

agree with this assessment and consider that it points strongly to distinct competition conditions.

Ofcom does not present sufficient evidence to show that Openreach has SMP even without DPA

3.26 Even on Ofcom's own analysis (which finds the impact of DPA to be immaterial in the time-frame of the review), there is more competition than Ofcom suggests, and therefore less need for regulation at all or, where it is needed, more scope for it to be targeted to the specific issues identified). The latter is set out in greater detail in section 4 below.

<u>There are more effectively competitive HNR Metro areas (across all bandwidths) than just the Central London Area</u>

3.27 The percentage of large businesses and mobile sites within 50m of two or more rival infrastructure providers is 89% across the combined Metro areas, compared to 90% for the Central London Area,[67] indicating a comparable level of rival network presence.[68] By Ofcom's own measure, therefore, the vast majority of customers in these areas already have access to competitive business connectivity services across all bandwidths.

<u>There is a strong case for finding additional areas to be effectively competitive in the VHB market</u>

3.28 First, as noted above, the VHB market is a high value market in which tendering and long-term contracts are commonplace. Even absent duct and pole access, rival providers find it economic to dig <u>much</u> further to connect a VHB customer than a lower bandwidth customer; the 10G radial dig distance is around <u>double</u> that of a 1Gbit/s circuit (assuming either a 3-year payback and a 5-year payback period).[69]

3.29 Second, prices have continued to drop in this segment by 30%-40%.[70] That there remains a margin between prices and costs in this segment is not inconsistent with a competitive market: a bandwidth gradient is commonly used (by Openreach and rivals) to recover fixed and common costs efficiently (i.e. in a way which maximises output and consumer welfare).**[71]**

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margins in a presumed competitive market, without any evidence on pricing in competitive parts of the market and contrary to economic theory which suggests that where large common costs are present, price cost mark-ups will tend to vary depending on willingness to pay including in competitive markets.

[67] BCMR 2018 Consultation, Table A12.12.

[68] The Temporary Conditions Statement Ofcom 2017 did not propose regulation in Birmingham, Glasgow and Leeds – see Ofcom, Business Connectivity Markets, Temporary SMP Conditions in relation to business connectivity services, 23 November, 2017.

[69] BCMR 2018 Consultation, para Table A10.6.

[70] BCMR 2018 Consultation, para A14.45.

[71] Where there are there are economies of scope between different bandwidths a competitive differentiated product market would tend to deliver a mark-up over fixed and common cost that differs materially depending on the value of a service to the user. Ofcom recognises this also in the context of charge-controlled products where it notes that '*the bandwidth gradient can also reflect efficient common cost recovery where products with a higher willingness to pay make greater contributions to common costs, allowing fewer common costs to be recovered from lower bandwidth products*.' (BCMR 2018 Consultation, Annex 10, footnote 28). Last but not least where a market is competitive and there is innovation, prices will be higher initially

3.30 Third, Openreach's market share (based on the installed base of circuits) falls under the threshold where dominance concerns typically arise[72] in the BT+1 and HNR areas (it is between 31% and 40% according to Ofcom).[73] We doubt that market shares based on new connections (which are higher) are reliable.[74]

3.31 Put simply, Ofcom has not made the case that Openreach has SMP in the HNR Metro areas nor in additional areas for the VHB segment (which the evidence indicates should be assessed separately from the lower bandwidth segment, and indeed constitutes a separate market). Regulating where effective competition exists now or is likely to emerge in the next two years, may interfere with the dynamics of infrastructure competition which Ofcom expects to deliver benefits for customers (as discussed further in section 4).

Ofcom has not properly assessed the potential competitive impact of DPA during the review period

3.32 Ofcom compounds the under-statement of competition described above by giving no weight to the impact of DPA in its market definition analysis, and only a very limited consideration in its assessment of market power. This is an error because DPA will materially increase CPs' ability and incentive to deploy fibre, and this will materially increase the competitive constraints on Openreach. This is even more so in the VHB segment given the removal of the usage restriction which will allow high value business customers to be targeted (and with strong incentives for CPs to move quickly) without the need to show an intent to deploy consumer broadband.

3.33 Ofcom has proposed to remove the remaining usage restrictions on Openreach's duct and pole access product in the PIMR. But the DPA remedy is by no means new (dating back to 2011 but initially rarely used). The 2018 WLA Statement introduced measures to make the DPA remedy more attractive for rivals by lowering the rental; spreading network adjustment costs across active prices, and relaxing – but not removing - usage restrictions. All except the latter two of these changes have been effective since May 2018.[75]

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as only customers who value the product highly purchase it; later on, as the market matures, and a greater number of customers adopts the product, the additional demand will incentivise entry, and prices will tend to become more aligned with cost.

[72] The EC SMP Guidelines note that '*the European Commission's experience is that market shares less than 40% means that dominance is not likely*'. BCMR 2018 Consultation, paragraph 6.14 and footnote 116.

[73] In BT+1 and in HNR Metro Areas it finds that Openreach's largest rival has a market share of 41%-50%; and a share of 21%-30% in Other HNR areas (see BCMR 2018 Consultation Table A14.3).

[74] The market share analysis in the VHB market appears to rely on data that is not comparable between providers (see Openreach's separate submission to the BCMR) and appears to indicate a share of new 2017 connections 51%-60% of Openreach in the VHB segment in BT+1 and HNR Metro Areas and 61%-70% in other HNR Areas. This does not reflect the experience of BT of the competitiveness of this market segment. It is also inconsistent with the VHB market share data published by Ofcom in the 2017 Temporary Conditions. We therefore urge Ofcom to recognise the importance of data validity in conducting its analysis.

[75] Currently Openreach have published a draft reference offer which is intended to become effective at the start of April 2019 (https://www.openreach.co.uk/orpg/home/products/ductandpoleaccess/ductandpoleaccess/downloads/PIAProductDescriptionAug18_Draft_v5_6_Clean.pdf) which intends to fully implement the changes required in the 2018 WLA Statement. In

3.34 In April 2019, concurrently with the expected BCMR 2019 Statement, the changes introduced in the WLA Statement will be completed (as Openreach will no longer charge access seekers for duct repairs that may be required when they use DPA). Shortly after, in Spring 2019, Ofcom proposes that UDPA should come into force, extending the permitted use of DPA to provide services <u>solely</u> to business-only providers.

3.35 Based on the active engagement of CPs in DPA implementation working groups run by Openreach and Ofcom we expect a high degree of interest and readiness.[76] In fact, [✂].[77]

3.36 Using DPA, CPs – including, if all usage restrictions are removed, future leased line-only providers – can deploy networks without investing in their own physical infrastructure. This will allow (in many cases) faster roll-out at lower cost and less risk than self-build.

3.37 More specifically, should Ofcom remove the remaining usage restrictions on DPA (as it proposes to), two models of network competition will be facilitated, namely:

- <u>Tactical network build</u>: targeting of high value sites (or contracts) by niche providers.[78] For example, business specialists such as SSE, Zayo, Exponential E or Colt will be able to connect high value sites (including data centres, MNO backhaul, and large corporate sites) at a lower cost quickly, and as demand arises; and
- <u>Strategic network build</u>: scale build of FTTP covering both residential and business sites (including sites of very high bandwidth demand). Strategic builders (for example CityFibre) will aim to cover clusters of public sector entities or businesses at 1Gbit/s and below or entire postcode areas with FTTP.

3.38 The strategic and tactical models of competition are mutually reinforcing. There is likely to be a race to win tenders for high value sites not least to secure these customers quickly through long term contracts. In addition, these could act as a catalyst for strategic FTTP build for residential and smaller business premises by de-risking it.

3.39 The high value of VHB circuits means that it is likely to be worth deploying DPA instead of actives even for a small number of individual sites.[79] In the chart below, the total cost of ownership (TCO) where DPA is used is more economic than buying actives for less than a single customer (where costs are spread a five-year period).

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addition, in the 2018 PIMR consultation Ofcom proposes that Openreach should have a new reference offer for unrestricted DPA in place one month after the PIMR Statement.

[76] CPs have been meeting regularly, together with representatives of the Office of the Telecoms Adjudicator (OTA) and Ofcom, to identify and resolve process and systems challenges to facilitate third party use of Openreach ducts and poles.

[77] The registration process is referred to as 'establishment process'. For CPs to become established they need to demonstrate capability of using DPA safely (in the same way Openreach does itself) to ensure the integrity of the network, the safety of its employees and third parties (as DPA involves construction work in public spaces). [✂]

[78] Ofcom also anticipates selective competition for leased lines in the short term. It states '…*we plan to introduce proposals that seek to provide unrestricted access to Openreach's ducts and poles nationwide. An unrestricted remedy would provide greater flexibility, better reflecting the needs of operators investing in full-fibre networks to provide a range of services; for example, initially leased lines to businesses, and later broadband to homes*.' https://www.ofcom.org.uk/__data/assets/pdf_file/0025/116539/investment-full-fibre-broadband.pdf, paragraph 1.16

[79] The chart assumes that a CP does not already have presence in the area where it considers deploying enterprise connectivity; however, most strategic builders or their CPs customers will already have such presence, by virtue of having built up this presence as a result of prior investments in LLU.

Figure 2: TCO per mobile site using DPA vs Wholesale Mobile Connect (WMC)

[✂]

3.40 For lower value sites, DPA is likely to cost in for clusters of customers.

Figure 3: TCO per site using DPA vs Wholesale Ethernet at 1Gbit/s

[✂]

3.41 Ofcom under-estimates the likelihood of take-up within the next two years by focusing only on strategic build. It notes that *'the main network expansion plans that may affect the CI market by 2023 are by* [Ofcom redacted] *and Cityfibre*'.[80] It is not clear, therefore, whether Ofcom has assessed the scope for rapid DPA take-up to support tactical build by CPs (large and small) in many different locations in or close to metropolitan areas and particularly focused on the VHB segment. [81] This could be a stand-alone strategy or as part of a subsequent strategic build.

3.42 AlixPartners, in their expert report provided in the Annex, also conclude that Ofcom has not properly assessed the potential competitive impact of DPA in the review period. The report agrees with the evidence set out above that DPA will significantly increase CP's ability, incentive and the speed of deploying their own fibre.

3.43 Further, the AlixPartners Report finds that this is likely to materially increase the competitive constraints on Openreach across most areas defined by Ofcom, allowing CPs to economically address demand 10 times further away from their existing networks than when they need to build their own physical infrastructure. This makes CPs own fibre connections to end users cheaper than even the cheapest Openreach wholesale Ethernet service (100Mbit/s EAD LA) for distances up to just under 300m. For higher bandwidth services, particularly over longer contract terms, DPA allows cheaper deployment for even greater distances (i.e. up to c.1.6km using a seven-year payback period).

3.44 AlixPartners also find that taking the likely impact of DPA into account would materially increase the size of the areas considered by Ofcom to be HNR. While Ofcom does not disclose the information on CP network location used to determine geographic markets, the sensitivity analysis undertaken by Ofcom shows that, by increasing the buffer distance from 50m to 100m, the number of postcode sectors classified as HNR more than doubles from 576 to 1,261. Furthermore, the number of postcode sectors categorised as 'BT Only' falls by over 20%. If the VHB segment was correctly considered a separate market, the impact of UDPA would be even more pronounced; and particularly so if Ofcom were to conduct the analysis on an exchange by exchange basis (as it should).

3.45 Ofcom's SMP assessment in the BCMR for both the access segment and in interexchange backhaul, is predicated on Openreach's control of physical

[80] BCMR 2018 Consultation, para 6.72.

[81] BCMR 2018 Consultation, para 6.74. Ofcom also note - without any additional explanation or evidence - that '[i]*n addition, we consider that any usage of a duct access remedy is unlikely to be in widespread use in the relevant geographic markets within the period of this review and therefore unlikely to lead to effective competition by 2021.'*

infrastructure. For example, Ofcom states: '*BT's ubiquitous network gives it an advantage over other operators as it will more often have a physical infrastructure connection (fibre or duct) to customer sites*.'[82] DPA allows BT's downstream rivals equivalent access to its duct network. Therefore, any competitive advantages that BT may be argued to have in the past derived from its duct and pole network will soon be available to all CPs with no restriction on how they choose to use that access, and on equivalent terms (including cost) to Openreach.

3.46 In fact, the availability of DPA will affect competitive constraints even if some CPs do not actually intend to use DPA. Just the availability of, and the knowledge that it can effectively reduce deployment costs, is likely to affect Openreach's incentives when setting the terms and conditions for its Ethernet services and BT Enterprise for its retail business connectivity products.

3.47 These game-changing impacts also cast (additional) doubt on the interpretation of historic market shares as an indicator of market power. If Openreach's SMP reflects its advantages resulting from its control of physical infrastructure, then DPA will remove the ability to gain competitive advantage from this control. In this context, historic shares are an even less reliable indicator of Openreach's future market power than they have been in past market reviews. (We noted the concerns raised by Openreach about Ofcom's reliance on (likely biased) shares based on new connections in 2017).

3.48 These considerations imply that Ofcom should undertake its SMP analysis again, taking DPA into account and using more appropriate indicators of market power. The evidence in the report by AlixPartners indicates that – following such a reassessment – Ofcom would find SMP in fewer areas and (at least) find the HNR Metro areas to be effectively competitive (in addition to the CLA). We also doubt that Ofcom would find market power in additional areas were it to appropriately define VHB as a separate market. Indeed, we consider these areas to be effectively competitive even before a consideration of the impact of DPA.

3.49 Without capturing the distinct dynamics of the VHB market (as also required by the CAT)[83], and the game changing effects of DPA, Ofcom's market power findings are not robust. Nor are its proposed remedies which are not required in areas which are effectively competitive, or if required could be lighter, where competition is likely to emerge in the next two years. Similarly, taking into account DPA (and assessing exchanges one by one rather than using an average distance approach in its assessment of geographic markets) would likely reduce the number of BT exchanges where Ofcom deems competition to be unviable.

3.50 The lack of proper consideration of the impact of DPA in a forward-looking assessment of markets is a major error. Imposing regulation where it is not required could interfere with the dynamics of infrastructure competition, as discussed further in section 4.

[82] BCMR 2018 Consultation, para 6.23.
[83] See Openreach response and Competition Appeal Tribunal Judgement in BT vs Ofcom, 1260/3/3/16, 10 November 2017.

4 Openreach and BT need to have commercial flexibility to compete fairly where there is competitive pressure

4.1 Ofcom expects competing full-fibre networks to emerge and describes its regulatory strategy as supporting this development while providing protection to customers where that investment is unlikely. It therefore seeks to target regulation upstream on passive network infrastructure; remove regulation where competitive conditions allow; and protect consumers by regulating where necessary.[84]

4.2 The PIMR and BCMR are Ofcom's first market reviews after this strategy was spelt out in Ofcom's July 2018 Strategic Policy Position. In many respects, Ofcom's remedy package shows a high degree of consistency with its policy objectives.

4.3 But in several important respects regulation in the BCMR can be more appropriately tailored to reflect actual and imminent network competition supported by UDPA which will quickly ramp up competitive pressure (especially in high value business segments).

4.4 We understand a degree of caution on the part of Ofcom given uncertainties about market developments. But competitive outcomes are likely to precede network presence due to the procurement processes and exercise of buyer power as described above. And more emphasis can be placed on competition law and the Commitments as safeguards for customers during the transition to greater competition. Indeed, competition law should – where competition is likely to emerge in the time-frame of the market review – provide sufficient protection to address any concerns relating to selective discounts or margin squeeze. The Commitments provide additional assurance by holding Openreach to account in treating all its downstream customers equally.[85]

4.5 On this basis, we don't think that continued de-regulation of (at least) the HNR Metro areas (across all bandwidths) and additional areas for the VHB segment poses material risks for customers. In fact, there are benefits to customers of allowing competition to play out: unnecessary regulation would reduce the scope for fibre investment at efficient cost (and lower prices for consumers).[86]

4.6 More generally, we want to ensure that Openreach can compete fairly as competition ramps up; not least because this is crucial to the competitive success of our downstream businesses which rely on Openreach inputs to be competitive; and ultimately to the competitive dynamic which delivers benefits to final consumers.

4.7 The areas and segments that will attract network competitors in the short term are easier to predict (because many of them are already very competitive) than the

[84] BCMR 2018 Consultation, para 10.6.

[85] In fact, equal treatment of a monopolist's downstream customers (including its own downstream arm) is only a relevant concern where there is no realistic threat of entry by an infrastructure competitor

[86] While Ofcom has regulated cautiously so as to foster infrastructure competition by imposing a safeguard cap (or a Fair and Reasonable requirement in BT+2 areas in the business access market), preventing Openreach from responding fairly to competition will tilt the playing field towards entrants who may be less efficient than Openreach, particularly so in the VHB segment (which is also the most competitive and innovative part of the market). Inefficient entry will tend to raise prices (in turn reducing take-up of the new services and reducing the scope for investment).

boundary between possibly competitive and uncompetitive areas. As we set out in greater detail in section 5 below, Ofcom should not pre-judge the latter by mandating dark fibre now for certain inter-exchange connectivity routes which are deemed to be uncompetitive.[87]

4.8 More generally, we expect our downstream businesses to have the same commercial flexibility as rival CPs in respect of their network supply options. Our downstream businesses will use DPA (and dark fibre if mandated) to deploy networks as necessary to maintain competitiveness.

4.9 We also note that the emergence of network competition is a dynamic process which evolves over time. The Commitments must, in turn, be seen as a dynamic arrangement that will need to evolve to reflect these market changes. To the extent there is effective infrastructure competition already, the economic and legal underpinning for the Commitments falls away.

Ofcom's remedy proposals align with its strategy in several important respects

4.10 Ofcom's PIMR and BCMR proposed interventions are shaped by the policy position it set out in July 2018. In particular:

- **Targeting regulation on upstream to passive network regulation**. The PIMR gives effect to this objective and signals a greater focus for regulation on the part of the value chain that is costly to duplicate by rivals in order to make competitive investment more attractive. We see what Ofcom is trying to achieve, and have offered to facilitate duct and pole access, but regulation must still not over-reach: UDPA as proposed by Ofcom is a step too far in effectively competitive business markets (for the reasons set out in Section 2). It is also hard to justify moving beyond the existing duct and pole remedy <u>now</u> as Ofcom has yet to complete its holistic review of business and residential markets and has not, therefore, picked up some important recent market developments (including, but not limited to, the Openreach fibre deal) which have implications for both the assessment of competition and the design of remedies. Should Ofcom nevertheless decide to impose UDPA including in geographies and areas that are competitive in BCMR markets, then Ofcom must assess its impact on competition looking forward, and adjust its remedies accordingly. As set out in section 3 above, Ofcom has not done so.
- **Geographic variation**: A regulatory model which is geographically differentiated is sensible and indeed not new to business connectivity markets. We agree with Ofcom moving towards an approach that will allow a more holistic assessment geographic regulation across business and residential markets in due course. However, we caution against over-simplification. The model adopted by Ofcom

[87] As set out in section 5, Ofcom should defer any dark fibre intervention to 2021 when there is a better prospect of these boundaries being revealed (with competition facilitated – where possible - by UDPA).

(across geographic and product[88] dimensions, which are related) still needs to reflect important variations in market power between geographic areas and customer segments. For the reasons set out in section 3, business markets have distinct characteristics across different segments of demand which drive different competitive conditions.[89] The unnecessary proposed regulation of HNR Metro areas and the VHB segment more widely (even absent DPA) is symptomatic of Ofcom's potentially over-simplified approach: it results in regulation being targeted where it is not necessary, which may inhibit legitimate commercial competitive strategies and may make investment less attractive due to regulatory risk.

- **Remedies should incentivise investment whilst ensuring consumers remain protected as effective competition emerges**. As competition emerges, it is entirely appropriate to prioritise (as Ofcom has) price and regulatory stability over the static benefits of keeping price tightly aligned to costs. This aligns with the explicit intent expressed by the UK Government in the Future Telecoms Infrastructure Review[90] and will support the investment incentives of <u>all</u> infrastructure providers (not just Openreach). We also note that competition (facilitated by UDPA) provides its own protections in respect of wholesale pricing as competitors (using DPA) undercut Openreach's active prices. This is a risk in the short term, as rivals target business customers in HNR Metro areas and the VHB segment, and in the medium term, from multi-service build by operators such as CityFibre.

4.11 Put simply, we see a lot of consistency between Ofcom's strategic vision and its remedies package. There are, however, a number of issues where we think that Ofcom's strategic aims would be better delivered through a different approach. Specifically, an approach that:

- better reflects actual and imminent network competition (facilitated by UDPA) and the greater scope for commercial flexibility and de-regulation that this allows; and
- gives appropriate consideration to the constraints on BT's conduct arising from the Commitments (and general competition law) when assessing the need for additional SMP regulation; and, in turn, for the Commitments to evolve in line with changes in market conditions.

Ofcom's remedies package (for the BCMR) should be better tailored to reflect actual and imminent network competition

4.12 We set out in section 3 why there is effective competition (or a reasonable prospect of it emerging in the review period) in the HNR Metro areas (across all bandwidths) and

[88] We continue to consider that identifying a business connectivity product market across all bandwidths does not allow Ofcom to accurately assess market power and hence target remedies appropriately.
[89] In addition, the VHB segment (which should be defined as a separate market) has characteristics requiring contracts tailored to the needs of different customers and customer segments.
[90] The Future Telecoms Infrastructure Review, page 74 '*The Government's view is that promoting investment should be prioritised over interventions to further reduce retail prices in the near term, recognising these longer-term benefits*.'

for wider areas in the VHB segment. In a nutshell, this is because:

- There is a lot more existing network competition (from high network presence) in these areas and segments already, even without UDPA, as well as evidence of competitive constraints (such as declining prices);
- UDPA will (quickly) drive further competitive pressure by providing extra flexibility and more opportunities for network rivals to make a return on their investments. Indeed, we think that mixed usage DPA will also have a significant impact by allowing businesses to be targeted on the way to a scale build.

4.13 In short, at least in the HNR Metro areas (across all bandwidths) and for additional areas in the VHB segment – where DPA-driven competition will be particularly acute – there should be no SMP finding and no regulation downstream of physical infrastructure. This would follow the position taken by Ofcom when it last undertook a market analysis for the purposes of its Temporary Statement in November 2017.[91]

4.14 In the remaining (narrower) areas where Ofcom continues to find SMP, but where competition is expected to increase (encouraged by UDPA), Openreach must be able to respond to competition by rebalancing its pricing to (fairly) reflect competitive constraints as well as costs. It must also be able to tailor its offering (in particular in the VHB segment) to different customer segments and their needs. It should be able, for instance, to offer commercial term/volume/geographic discounts (consistently with competition law and the Commitments which offer safeguards against unequal treatment and undue discrimination).

4.15 In these areas (and segments) Openreach must have the commercial flexibility to meet the needs of all its customers and allow it to compete on a level playing field with network rivals. Allowing Openreach the flexibility to respond to pressure from infrastructure rivals is critical to the (market-driven) dynamic which ultimately delivers benefits to its customers. As set out in section 3 above, and in the AlixPartners report, availability of DPA on unrestricted terms is expected to have significantly increase levels of competitive pressure on Openreach, particularly for VHB services and in areas with high business presence where there is already alternative network build (e.g. HNR/Metro areas).

4.16 Given this and the strong direction of travel towards effective competition across markets, if Ofcom decides not to de-regulate, it should reconsider the need for an Equivalence of Inputs ('EOI') obligation because: (i) in these areas and market segments Openreach does not have the incentive to favour its downstream arm (as this would make it less competitive vis-à-vis rivals); (ii) the Commitments already require Openreach to treat all its downstream customers equally (see also below); and (iii) the obligation could be interpreted so as to prevent Openreach from meeting the needs of specific customers or customer segments.

4.17 If there were specific concerns that Openreach could engage in a price squeeze or otherwise act to the disadvantage of network rivals, in areas and market segments

[91] It is also consistent with the principle that a regulator should be looking to reduce rather than increase regulation in a market where competition is increasing, as envisaged by the Communications Framework. See also Communications Act section 6(1)(b); FD Article 16(3).

where Ofcom continues to find SMP, obligations including the fair and reasonable requirement and the no undue discrimination obligation already prevent Openreach from doing so, and general competition law also prohibits such behaviour.

4.18 We therefore request that Ofcom <u>remove</u> the EOI obligation in areas and market segments where competition is expected; or that, where it identifies specific risks to its objectives, the legal instrument on EOI is more tightly limited to the provision of services to downstream divisions. Ofcom should also clarify how it would assess EOI and no undue discrimination in the context of bids (should it decide to retain EOI).

4.19 It is in this context we also ask Ofcom to clarify the policy intention of the obligation to provide access on fair and reasonable terms. Ofcom itself notes that the policy concern in the areas where it proposes a fair and reasonable obligation that Openreach could impose a 'margin (price) squeeze or to otherwise act anti-competitively in setting prices'.[92] We are concerned that a broader interpretation could be applied in practice and this may again serve as a barrier to commercial flexibility.

4.20 Regarding geographic differentiation in price, Ofcom accepts that DPA will increase competition <u>with a likely focus on higher speeds</u>,[93] but still proposes to regulate services above 1 Gbit/s with a safeguard cap to address a concern that '*BT may selectively raise prices for services over 1 Gbit/s where competition is weak or non-existent and leverage higher returns to reduce prices where competition is likely to emerge*.'[94]

4.21 This is a change of policy as Ofcom has previously accepted that such de-averaging (to reflect different costs and 'local characteristics of competition' may be a natural and legitimate consequence of competitive pressure in business markets. In the BCMR 2016 Statement, Ofcom stated:

> '*We note that for the geographic markets where we have found SMP, the underlying costs and competitive conditions will not be completely homogenous throughout the UK. This suggests that some freedom to charge in a way that reflects more accurately the costs incurred and to respond to the local characteristics of competition that exist in these markets could be efficient. Moreover, given the level of cost differences that may exist and the extent of competition in some areas, BT's ability to compete could be limited if it were required to maintain nationally uniform prices. Hence, geographically differentiated prices may reflect BT responding legitimately to cost differences in the face of competition*.' [95]

4.22 This policy change is surprising and inappropriate. Ofcom's fixed access regulatory model is becoming firmly differentiated by geography, reflecting where rival networks will emerge, and where this is less likely. A degree of wholesale price de-averaging is consistent with this as existing geographic cross-subsidies in Openreach's pricing are eroded by rivals targeting low cost, high value geographies. If Openreach or alt nets are to find it viable to roll out fibre in high cost, lower value geographies, Openreach must be able to raise prices correspondingly in these areas as competition forces it to lower

[92] BCMR 2018 Consultation, para 1.19.
[93] BCMR 2018, para 1.22. Ofcom accepts that duct and pole access will lead to an increase in competition '*which is likely to focus on higher speeds'*.
[94] BCMR 2018 Consultation, para 1.22.
[95] BCMR 2016 Statement, para 8.93.

prices elsewhere.

4.23 The extent of any such geographical pricing differences is unknown at present, as it would depend on the nature and location of competition and the erosion of cross subsidy. Were Ofcom to regard such legitimate wholesale price variation as unacceptable from a social perspective, we would expect it to confront the consequences of promoting greater infrastructure competition by offering appropriate policy solutions (for example industry levies). The answer cannot be to compromise the ability of Openreach to legitimately meet competition (and rebalance elsewhere to ensure the recovery of common costs). At a minimum, Openreach should have flexibility to respond legitimately to cost differences in the face of competition. This is important to BT Group because its downstream business units depend on being competitively supplied by Openreach.

Ofcom should give greater weight to the Commitments in designing remedies and ensure that they evolve with market developments

4.24 When considering the extent to which there is a competition problem and the proportionality of any remedy, Ofcom should give greater weight to the Commitments (as indicated in the July 2017 Statement[96] and the Access Directive[97]). It should give more weight to competition law which provides a safeguard against abuse of dominance (e.g. through pricing), unequal treatment and undue discrimination.

4.25 Specifically, in assessing suitable safeguards to protect customers during a foreseeable transition (in some areas) to effective competition, Ofcom should have given greater weight to the protections these offer, before considering whether to layer on SMP regulation. In particular:

- The Commitments (in Ofcom's words) constitute '*[t]he biggest reform of Openreach in its history*' and (although voluntary) they go a long way to removing the incentive and ability of BT to discriminate in favour of its downstream arm;[98] and
- Ex post competition law is sufficient to protect against predatory pricing behaviour or margin squeeze (and excessive pricing) where there is no specific concern.[99]

[96] Delivering a more independent Openreach: Statement on releasing the BT Undertakings pursuant to section 154 Enterprise Act 2002. 13 July 2017. See for example, paragraph 7.12 which states: '*In this context, we consider the most appropriate and proportionate approach is to consider the effect, if any, of the new arrangements in BT's Notification on SMP regulation as part of those ongoing reviews.*'

[97] The Access Directive (Article 13) and Communications Act (section 89C) make it clear that functional separation can have an effect on the existing regulatory obligations and that this should be explicitly assessed. Further, this should not be interpreted as a one-off obligation but rather, given the forward-looking and dynamic nature of the market review process and resulting regulation, it is an ongoing requirement on Ofcom.

[98] As part of the Commitments, the principle of equal treatment is enshrined in Openreach Limited's Articles of Association. Ofcom has put in place several mechanisms to ensure compliance, including the establishment of the Openreach Monitoring Unit 'OMU'. BT and Openreach also have their own compliance functions to specifically monitor compliance with the Commitments, both in letter and in spirit. Whilst the Commitments are voluntary in nature, there would be serious consequences for BT were it to renege on them.

[99] BT's and Openreach's internal governance process includes compliance with the competition law rules in relation to pricing. Indeed, competition law assessment of pricing practices has been well-developed through case law over a long

4.26 In turn, more infrastructure competition (driven by unrestricted DPA) has implications for how the Commitments evolve over time. They stand as a remedy to a competition concern – namely discrimination – and, like functional separation, are intended for circumstances where '*there is little or no prospect of effective and sustainable infrastructure-based competition within a reasonable timeframe*.' [100]

4.27 Should Ofcom be concerned about the voluntary nature of the Commitments, we have included in the Commitments a notice period. In addition, Ofcom also stated that it has the ability to step in if BT were to seek to walk away from the Commitments.[101]

4.28 Last but not least, to the extent there is effective infrastructure competition already, the economic and legal underpinning for the Commitments falls away. As this is a dynamic process which evolves over time, the Commitments must, in turn, be seen as a dynamic arrangement which evolves over time.[102]

BTs downstream business units should have the same commercial flexibility as rival CPs

4.29 In a more competitive environment, we also expect our downstream businesses (i.e. BT Consumer and BT Enterprise) to have the same commercial flexibility as rival CPs in respect of their network supply options. Our downstream businesses will use DPA to deploy networks as necessary to maintain competitiveness.

4.30 In line with the Commitments, they are permitted to make such deployments provided they do not 'materially substitute' Openreach products supplied in markets in which Ofcom has found SMP.[103] In these circumstances, we also expect Ofcom to exempt network deployments by BTs downstream business units from SMP regulation (when using own build or Openreach's duct and pole access). This is consistent with positions that Ofcom has publicly taken previously.[104]

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period of time, it is driven by principle and designed to strike the right balance between protecting the process of competition and individual competitors for the ultimate benefit of consumers. The European Commission Telecommunications Regulatory Framework provides for circumstances where competition law will be sufficient, even in cases of market power. The third criterion of the Three Criteria test is that remedies would only be applied where competition law would be insufficient.

[100] The legal provisions are set out in in ss. 89A and 89B CA03 which reflect the requirements of Article 13a AD.

[101] For example, see paras 3.28 and 5.11-5.18 of the final DCR statement: https://www.ofcom.org.uk/__data/assets/pdf_file/0020/104474/delivering-independent-openreach.pdf

[102] The Commitments already reflect the need for change where SMP is no longer found by Ofcom, Paragraph 3.6 states '*In the event that Ofcom concludes, pursuant to a market review, that BT no longer has SMP in a particular market, then except in the event that BT determines at its sole discretion that it is impractical to do so, such products within that market (which were formerly SMP Products but which have become non-SMP Products) shall be provided by, and the related assets shall be managed by a division of BT other than the Openreach Division. BT plc shall notify Ofcom of its reasons in circumstances where it has decided to retain provision of such non-SMP Products within the Openreach Division*.'

[103] BT and Openreach Commitments, paragraph 9.8 (b); https://www.btplc.com/Thegroup/Ourcompany/Theboard/Boardcommittees/BTComplianceCommittee/Publications/Commitments.pdf

[104] Ofcom has previously acknowledged that where BT Downstream uses an upstream passive input (i.e. dark fibre), BT downstream businesses should have the flexibility compete on a level playing field with other Openreach CP customers. In particular, in Ofcom's 9 July 2015 clarifications and corrections document to the 2016 BCMR it stated: *'we do not propose to impose SMP conditions ex ante on products which BT divisions, downstream of Openreach, might provide by using the dark fibre products which Openreach would provide in complying with our proposed Dark Fibre Access remedy, as long as BT fulfils*

4.31 [✂].

4.32 Based on the above Ofcom should explicitly set out in the final BCMR and PIMR Statement, that SMP conditions would not attach to products (or assets created) which BT downstream might provide using DPA (or mandated dark fibre), or to BT downstream self-build. This is on the basis that those products (or assets created) would not substitute to a material degree for Openreach SMP products (i.e. the same threshold for exemption that applies in the Commitments). Applying SMP obligations would not be necessary or proportionate where Openreach already has these obligations; and where the 'material substitution' provision ensures that these remain effective.

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otherwise the SMP conditions we propose in relation to active services. If Openreach were to fulfil all BT's obligations in relation to active services, and BT's downstream divisions were to provide additional active services by consuming regulated dark fibre from Openreach, we consider that our proposal to require BT to provide dark fibre on the basis of Equivalence of Inputs (EOI) should give sufficient assurance that CPs could compete in the provision of these downstream active services on a level playing field.' https://www.ofcom.org.uk/__data/assets/pdf_file/0019/57043/clarifications_and_corrections.pdf

5 Dark fibre is not justified over other remedies and may have unintended consequences that are not in customers interests

5.1 Ofcom accepts the risk that dark fibre poses for incentives to invest and, more generally, the risk that the provision of backhaul and core connectivity services could be undermined.[105] It believes, however, that this risk is low because the scope of the remedy is limited to exchanges where '*network-based competition is least likely*'.[106] Given that Ofcom (and the Government) want to see more network-based competition, Ofcom cannot afford to get this wrong.

5.2 We think that there is a high risk of error (with adverse consequences for competitive network investment) because of the way Ofcom has specified the remedy (which creates a significant risk of mis-use), and because of the broad-brush way Ofcom has identified uncompetitive routes, without proper regard to the impact of UDPA. A better (and more proportionate) approach would be to combine UDPA and active remedies allowing the former to reveal more accurately the viable scope of competition, whilst the latter would protect customers where competition is not viable during the two-year transition. At the very least, Ofcom must address the specification problem.

5.3 Even then, the case for mandating dark fibre has not been made by Ofcom. As the industry moves to a full-fibre future and to new Openreach products, smaller exchanges will be by-passed, and we plan to rationalise the exchange estate to deliver efficiencies as this occurs. In the context of these industry changes, take-up of dark fibre can be expected to be low and short-lived (bringing into question proportionality given significant risks). But if we are wrong and there is take-up, our rationalisation plans may be delayed as well as the realisation of efficiencies that we would otherwise pass through to customers. More generally, the evidence does not support Ofcom's claim that customers will benefit from increased flexibility and control compared to Openreach's active products.

5.4 We also have concerns about the proposed dark fibre pricing which will limit the ability of Openreach to use a bandwidth gradient (for its active services) to efficiently recover its costs without justification; and which have been set at a level which omits certain valid costs.

5.5 Given Ofcom's stated intention of extending the dark fibre remedy in the future, Ofcom might be tempted to think that pushing for dark fibre now (without a strong case but to a limited extent) would establish the concept and makes its extension easier in due course. This is ill-founded. The remedy must be proportionate when first imposed and any subsequent extension must also be proportionate (against a counterfactual of no dark fibre remedy).

5.6 There can be no expectation on the part of Ofcom that it will be easier to demonstrate proportionality for an expanded dark fibre remedy further down the line simply because it has shifted the counterfactual by imposing dark fibre in the first instance on weak

[105] BCMR 2018 Consultation, para 12.35.
[106] BCMR 2018 Consultation, para 12.35.

grounds. Ofcom would need to have very solid grounds for extending dark fibre into the access segment given the risk it poses to investment incentives. Even in uncompetitive areas, investment may still be commercial, and regulation will need to be designed carefully to bring this forward.

There is a high risk that dark fibre (as specified) will deter competitive investment and unfairly distort existing infrastructure competition

5.7 Ofcom makes very clear that dark fibre could deter competitive investment by network rivals, and that this would be inconsistent with its strategy to promote network-based competition (facilitated by UDPA). It states, '*the more attractive it is to buy dark fibre, the less likely operators are to roll out their own network*.'[107] Ofcom also accepts that this may have the unintended consequence of entrenching market power in backhaul and core connectivity where some competition exists or is viable.[108]

5.8 To avoid these adverse effects on rival investment (and to give UDPA a chance), Ofcom claims to have taken a 'conservative' approach by proposing dark fibre only at routes from BT Only exchanges where it thinks that material rival investment is 'very unlikely'.[109] Ofcom considers it highly unlikely that rivals would find it economic to dig to these exchanges from their own networks because the dig distances are long and demand at these exchanges is relatively low. Ofcom considers that its duct remedy will make little difference '*except in a very small minority of cases*.' [110]

5.9 We don't agree that Ofcom has been 'conservative' nor that dark fibre is limited to areas where Ofcom can be 'confident' that network competition is unlikely to develop as a result of UDPA.[111] We think that there is a high risk of error (with adverse consequences for network investment) for the following reasons:

- First, the specification of the remedy has the unintended consequence that dark fibre could be used to create low cost core and backhaul infrastructure which undermines the existing (and prospective) investment in backhaul and core connectivity;
- Second, competitive build to exchanges which are currently BT Only (and therefore treated as uncompetitive) is likely to be <u>viable</u> in some cases; these should not be counted as BT Only as they are <u>potentially competitive</u>;
- Third, UDPA will make some of the BT Only exchange <u>more</u> attractive to contest by rivals by lowering their costs of network entry or expansion.

<u>Without proper scoping there will be unintended adverse impacts on competition and investment</u>

5.10 Although an error of omission rather than design, the lack of any limits on the dark fibre remedy would result in a significant adverse effect on investment in new networks as

[107] BCMR 2018 Consultation, para 12.76 and 12.77.
[108] BCMR 2018 Consultation, para 12.90 'We consider whether a dark fibre remedy could dampen incentives for network operators to invest in backhaul routes. This would result in less dense backhaul networks and could have the impact of helping to entrench BT's market power in backhaul and core connectivity.'
[109] BCMR 2018 Consultation, para 12.78.
[110] BCMR 2018 Consultation, para 12.83.
[111] BCMR 2018 Consultation, para 10.15.

well as undermining existing investment undertaken by Openreach and others.

5.11 The remedy, as specified, can be 'daisy chained' between eligible exchanges (i.e. where there is a BT only exchange at one end) thereby replicating infrastructure in areas deemed to be more competitive (including those that have previously been designated as core infrastructure). Openreach estimates that the remedy would oblige it to provide dark fibre on over [✂] possible routes spanning the UK.

5.12 We do not think that dark fibre should be mandated anywhere at this juncture. But if Ofcom does go ahead, it must address this unintended gaming opportunity. We support Openreach's proposal that use of the remedy should be limited to the provision of backhaul from a non-competitive exchange to the nearest exchange at which competitive backhaul is available.

5.13 Specifically, Openreach proposes limiting the availability of dark fibre from each BT Only exchange to a specific NGA parent handover exchange. Although a handful are not categorised by Ofcom as competitive, such a move would create a strong incentive for competitive infrastructure to be created (and duct and pole access would reduce the cost of such a deployment significantly.)

Ofcom's broad-brush approach inappropriately designates some exchanges as BT Only (and therefore uncompetitive) when, in fact they are potentially competitive

5.14 Ofcom determines that each exchange is its own geographic market but then fails to assess, on an exchange by exchange basis, the scope for potential competition (as it has done in the access segment). Instead Ofcom concludes that there is SMP for cohorts of exchanges (e.g. 'BT Only') based on average distances (across the cohort) to the nearest rival infrastructure, and general comments about demand. This is not enough to be 'confident' that competition can be been ruled out, because it masks the particular characteristics of individual exchanges within the cohort.

5.15 Our analysis shows that at least [✂] BT Only exchanges are within [✂] of an alternative network suggesting that digging would be economically viable.[112] The Openreach submission also points to a potential error in the designation of BT Only exchanges based on its sale of Cable Link (suggesting PCO presence at these exchanges).

Ofcom has given insufficient weigh to the impact of UDPA

5.16 Rival connections to BT Only exchanges can only become more attractive with duct and pole access as it will significantly reduce the costs of doing so. Although Ofcom dismisses this, it offers no quantitative analysis of how reduced build costs might change the incentives to connect on an individual exchange basis.[113]

[112] Ofcom itself accepts that 5% of BT Only exchanges (c.216) are located in areas found to be BT+1 or BT+2 or more, as defined by its geographic market definition for access. For these exchanges, it can be concluded there is rival network nearby because Ofcom's own analysis of the access segment identifies that BT is not the only potential provider of leased lines.

[113] Ofcom says that it has considered the potential for investment in backhaul in different parts of the market where it proposes that BT has SMP (para 12.78). But this is not an exchange by exchange analysis. Rather Ofcom looks at aggregated segments (BT Only, BT+1 and BT+2 or more) and judges the attractiveness of investment using a qualitative assessment of

5.17 We agree with the conclusion of the AlixPartners report that Ofcom should have assessed the impact of UDPA on network deployment on a disaggregated basis. Ofcom are uniquely placed to do this analysis. To illustrate the potential impact, AlixPartners note that there will be considerable variation within the average distance to the nearest rival network of 6km.[114] It is possible, therefore, that a proportion can be economically connected over shorter distances and that UDPA would be make this more attractive by lowering connection costs.[115]

5.18 Ofcom is explicit that dark fibre will be considered where duct and pole access will not lead to effective competition. Ofcom cannot be confident of this until UDPA has been allowed to take root and reveal the areas where effective competition is likely and the areas where it will not. A better approach would be to make UDPA available and allow market-driven backhaul solutions to play out and reveal these distinctions. Intervening before this dynamic has played out will simply distort choices and embed a solution chosen by Ofcom rather than allowing for competitive entry in response to the needs of customers. Nor is this approach consistent with Ofcom's policy of targeting its regulation upstream.

5.19 In summary, we don't agree that Ofcom has identified, with sufficient confidence, routes or areas where material rival investment is very unlikely (taking appropriate account of UDPA). Nor has it done enough to avoid 'creep' of its dark fibre remedy into competitive segments (through the 'daisy chaining' of routes). Mandating dark fibre on routes which are actually or potentially competitive (either by design or through the omission of appropriate limitations) will distort competition and deter investment which is entirely contrary to Ofcom strategy to promote network-based competition and will not benefit customers.

It is unclear why reducing backhaul costs in non-competitive areas will deliver benefits to customers over and above existing remedies

5.20 Ofcom outlines two kinds of potential benefit from dark fibre, specifically: (i) more network competition, where lower backhaul costs will enable infrastructure build to end users (i.e. in the access segment);[116] and (ii) more access competition, where users of the Openreach network are better able to compete in retail markets on price service quality and product offerings.[117]

5.21 Standing back from these claims, certain industry trends (WLR withdrawal, PSTN closure, migration of CPs to new Openreach products and exchange rationalisation) suggest that take up of dark fibre may be modest. But if this is incorrect, and take up is significant, dark fibre could have the unintended consequence of retarding these pro-consumer developments.

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demand and supply. The critical supply analysis (of rival infrastructure within economic reach of the exchange) has not been undertaken (even though Ofcom has done this analysis in the access segment).

[114] BCMR 2018 Consultation, para 12.83.

[115] AlixPartners' amended version of Ofcom's economic dig distance model finds that it is more profitable for a CP to use UDPA rather than EAD LA 10 Gbit/s for circuits up to c.1.6km, assuming a 7-year economic life.

[116] BCMR 2018 Consultation, para 12.65. Ofcom states 'a dark fibre remedy in inter-exchange connectivity is likely to significantly reduce backhaul costs and is likely to be an important enabler for infrastructure build in marginal areas'.

[117] BCMR 2018 Consultation, para 12.65.

5.22 The benefits claimed by Ofcom are largely asserted rather than supported by evidence. We doubt that these benefits exist or, if they do, that they are material for the reason set out below. Ofcom also underplays the benefits of OSA Filter Connect significantly which in most important respects matches the dark fibre benefits claimed by Ofcom.

Certain industry trends indicate that dark fibre take-up is likely to be modest

5.23 As the industry moves to a full-fibre future and to new Openreach products (SOGEA and SOTAP), smaller exchanges (typically BT Only exchanges) will be by-passed as traffic is conveyed from cabinets to fewer NGA handover points. We also plan to rationalise the exchange estate (from 5,600 to 1,100) to deliver efficiencies as this occurs.[118] In the context of these industry changes, take-up of dark fibre can be expected to be low and short-lived.

5.24 But if we are wrong and there is take-up, our rationalisation plans may be delayed as well as the realisation of efficiencies that we would otherwise pass through to customers. Ultimately industry needs a lower cost operating model for Openreach. The exchange closure plan and move to all IP will enable this. It would be a poor outcome for customers if this project was delayed; and a poor experience for CPs if they had to move from exchanges which were closing where they had recently invested in dark fibre.

Dark fibre can't be justified on the basis it will enable infrastructure build in marginal access areas

5.25 Ofcom believes that the backhaul routes it considers to be uncompetitive (i.e. those from BT Only exchanges) nonetheless connect access areas where rival access networks could be built (in marginal areas). Further, that lower backhaul costs (from dark fibre) could enable such competitive investment because backhaul costs are a consideration when building new access networks.[119]

5.26 It is not disputed that backhaul costs are a consideration when building new access networks. It is, however, highly questionable whether the reductions in cost which Ofcom's remedy will generate will be sufficient to change build decisions. [✂].

5.27 The access areas in question (near to BT Only exchanges) are likely to be more remote and therefore more challenging for investment in new access networks. Investment may only be viable for one operator and, in some cases, only with subsidy. Ofcom does not address these issues. There is no reference to the economics of build in more remote areas, and the associated challenges. Nor to Ofcom's likely approach to regulation in these areas which may be more enduring and therefore critical in supporting incentives to invest.

5.28 It is possible that dark fibre might make rival build to certain high value business sites in these areas more attractive, but this cherry-picking may compromise a scale-build of full fibre (supplying across multiple services) by Openreach (or others) that Government would like to see accelerated to prevent these areas being left behind. It might do the

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118 Slides 34-35, https://www.btplc.com/Sharesandperformance/Financialreportingandnews/Quarterlyresults/2017-2018/Q4/Downloads/Slides/q418-slides.PDF

119 BCMR 2018 Consultation, para 10.17 and 12.1.

same for entities seeking to win bids for any publicly supported build (resulting in additional subsidy requirements).

Dark fibre can't be justified on the basis it will allow providers to better compete on price, service quality and product offering in downstream markets

5.29 We don't think the benefits of dark fibre claimed by Ofcom are substantial (or even exist at all in some cases). Ofcom itself doubts the extent to which dark fibre customers can realise any benefits given its narrow scope. [120] [121]

5.30 Dark fibre, if taken up, will just lower backhaul prices and possibly retail prices. Whilst we see the benefit for customers in lower prices in the short-term, we question how this will help support competitive investment in the digital infrastructure of the future and how it sits with government's steer to Ofcom namely: '*It is the Government's view that promoting investment should be prioritised over interventions to further reduce retail prices in the near term, recognising these longer-term benefits*.'[122]

5.31 We address Ofcom claimed benefits in turn below.

- **Users would be able to choose their own electronic equipment, enabling them to deliver services that better suit their needs and the needs of their customers**. Ofcom envisages that CPs will remove Openreach's equipment (to achieve cost savings) and configure their own equipment '*to replicate and replace the functions of Openreach's electronic equipment*'[123] suggesting no significant innovation or service differentiation over the equipment and features already provided by Openreach.
- **Users would be able to make efficient decisions on bandwidth upgrades based on the underlying costs of upgrades.** Ofcom asserts that bandwidth demand is growing rapidly, that CPs will therefore need to upgrade the bandwidth of existing inter-exchange circuits and that dark fibre will lower the cost of upgrading bandwidth and ensures more efficient upgrade decisions.[124] But for the circuits in question, there is little evidence of such demand. BT Only exchanges are located in remote or rural areas and therefore have lower demand for backhaul capacity.[125] Ofcom accepts that any increases in demand will be lower for BT Only

[120] BCMR 2018 Consultation, para 12.9 '*providers that serve their customers both by accessing BT's network and by operating their own fibre network will be better able to harmonise the solutions they provide using their own networks with those they provide using BT's network. There may also be scope for providers to combine their own network and BT's dark fibre to deliver alternative network designs. However, we recognise that the extent to which these benefits can be realised may be limited by the scope of this dark fibre remedy. Under our proposals, dark fibre would not be available for connectivity between all exchanges, nor in the access layer, and harmonising solutions may require control over active equipment across the network*.'
[121] BCMR 2018 Consultation, para 12.29 '[w]*e recognise that the scope of dark fibre may place some limits on the extent to which new services or service features can be introduced across a provider's whole network. If providers deliver downstream services using Openreach active products in access, then these would set the service features for that downstream product and may limit the extent to which dark fibre could enable changes to overall service features*.'
[122] Future Telecoms Infrastructure Review, page 2.
[123] BCMR 2018 Consultation, para 12.18.
[124] BCMR 2018 Consultation, para 12.10 and 12.36.
[125] BCMR 2018 Consultation, para 7.64. This is one of the reasons given by Ofcom for these exchanges being BT Only and not attractive for rival backhaul providers.

exchanges than for BT+1 and BT+2.[126] Nor is it clear that current pricing is constraining such demand or altering any upgrade decisions.[127]

- **Users would be able to eliminate inefficient active equipment duplication**. We do not dispute that some savings may be available by changing equipment configurations in some cases. But Ofcom has not shown that there are material benefits for the circuits in question.[128] Ofcom itself concedes that net savings (allowing for the required investment by CPs in systems and processes to enable services to be provided and managed over dark fibre) are unclear, and this could limit the uptake of dark fibre.[129] Nor has Ofcom sufficiently addressed the complexities that arise where CPs replace Openreach equipment that is critical to operational performance, in particular, repair times and lower operational costs. There are likely to be additional costs for Openreach in dealing with faults resulting from the removal of equipment and that these have not been properly assessed by Ofcom (as set out in the Openreach submission).
- **Users would potentially be able to deliver improvements more quickly than they can currently**. Ofcom has not addressed the arguments made by BT as part of the 2016 Appeal that innovation in service features is unlikely beyond niche developments.[130] We continue to doubt that dark fibre provides significant flexibility for CPs to innovate or differentiate their business model (for the reasons set out in our evidence to the Tribunal which Ofcom has ignored). The reality is that innovation in transmission equipment is driven by dynamics between equipment providers in a global market, not by the availability of regulated dark fibre in a narrow segment of the UK business connectivity market.

5.32 Dark fibre is unlikely, therefore, to deliver material benefits in downstream markets envisaged by Ofcom namely allowing '*providers to better compete on price, service quality and products offering*'.[131]

<u>Any benefits are not significant over and above the benefits available from OSA Filter Connect</u>

5.33 If benefits do exist, we don't think they are significant over and above the benefits available from OSA Filter Connect. This is a product launched by Openreach to enable it to compete more effectively for customers with high bandwidth demand (as in the fixed

[126] BCMR 2018 Consultation, para 12.86.
[127] BCMR 2018 Consultation, para 12.12. Ofcom notes the difference in price between an EAD 10 Gbit/s service and a 1 Gbit/s service (of £3,866) and simply asserts that a CP who may be willing to pay the <u>cost</u> of such an upgrade (of £1,588), may not be willing to pay such a price premium. But it does not show that – where such a need exists – current pricing is constraining such demand or altering upgrade decision (which would require price elasticity evidence).
[128] BCMR 2018 Consultation, para 12.17. Ofcom envisages cost savings from reductions in the overall amount of equipment employed compared to the current use of active products. Ofcom illustrates this by citing the costs of electronics allocated to an Openreach EAD 1 Gbit/s circuit of approximately £574.
[129] BCMR 2018 Consultation, para 12.26 and 12.27, '*in instances where potential net savings are lower, we would expect less take-up of dark fibre*.'
[130] Ofcom ignores the material lodged at the CAT including statements of fact from BT's engineers. These statements set out evidence and argumentation on: (i) the nature of the 'thin slice' for dark fibre access; (ii) the fact that differences in interfaces are unlikely; and (iii) the low likelihood that dark fibre offers greater flexibility for CPs to differentiate their commercial models. These points, which were set out in the Second and Third Witness Statement of Mr Reid in BT's appeal of the 2016 BCMR, still apply.
[131] BCMR 2018 Consultation, para 12.63.

backhaul segment). Ofcom accepts that it offers 'some' of the benefits of dark fibre (including low cost bandwidth upgrades), but notes that its pricing makes it more suitable to those with requirements for bandwidth over 10 Gbit/s.[132]

5.34 This underplays the benefits of OSA Filter Connect significantly. OSA Filter Connect largely matches dark fibre in the flexibility it provides to upgrade bandwidth at low cost and to self-determine equipment added to wavelength channels beyond the first. More importantly, no consideration is given to how the product might evolve. Ofcom accepts that pressure could be placed on the pricing (and quality) of OSA Filter Connect by regulated dark fibre,[133] but does not recognise the pressure from DPA which could spill-over into this segment even if DPA is less widely used.

Ofcom's proposed dark fibre pricing raises a number of issues

5.35 There are a number of pricing issues relating to dark fibre that we are concerned about:

- **The proposed dark fibre pricing structure will inappropriately restrict Openreach's pricing freedom for active services.** Ofcom accepts this: 'a single price for the dark fibre product is likely to reduce BT's ability to price its active services above cost, particularly for VHB services.'[134] As explained above, Ofcom has not identified a strong case for mandating dark fibre, nor has it identified, with sufficient confidence, routes which are uncompetitive. It cannot justify, therefore, a regulated pricing approach which removes the commercial flexibility currently available to Openreach to set prices for its active services to efficiently (in an allocative sense) recover its costs, whilst allowing as many customers as possible to buy leased lines.[135]
- **Aggregation has not been appropriately reflected in the dark fibre pricing proposals.** Dark fibre can substitute for multiple Ethernet circuits (on the same route (known as 'aggregation'). Ofcom regards this an important benefit of dark fibre.[136] But where these opportunities exist, the dark fibre price should be set to ensure the same contribution to common costs for a single dark fibre circuit, as would be made by the multiple Ethernet circuits that are substituted. Openreach calculates that, on average, (for the routes in question) there are [✂] Ethernet circuits that would be substituted by a single dark fibre. To ensure the same contribution to common costs, the allocation (of main links) cost to the dark fibre price should be increased (as set out in the Openreach submission). We are also concerned that Openreach should be able to fully recover the costs of assets in place and not be exposed to under-recovery where a purchaser rationalises the number of fibre strands they utilise.

[132] BCMR 2018 Consultation, para 12.32.
[133] BCMR 2018 Consultation, para 12.33.
[134] BCMR 2018 Consultation, para 12.36.
[135] BCMR 2018 Consultation, para 12.37. The benefit is described in footnote 322 as follows '*The most (allocatively) efficient way to recover these costs is for BT to charge prices that are sufficiently high to recover common costs, but that are structured in a way that allows as many customers as possible to buy leased lines. This could mean charging higher prices to customers with higher willingness to pay, usually those purchasing higher bandwidths, and lower prices to customers with a lower willingness to pay. This type of pricing structure is known as a bandwidth gradient*.'
[136] BCMR 2018 Consultation, para 12.46.

- **The level of the proposed FAC-based price is wrong**. More generally, the Openreach submission sets out why the proposed dark fibre prices are too low and will not recover direct costs plus a mark-up. This is due the exclusion of certain fixed and common costs and the use of inappropriate parameters for assessing costs in certain case. Openreach also argues that allowance over FAC should be included to create the right incentives for CPs to reduce faults.

  The dark fibre remedy is applicable to smaller, mainly rural exchanges where fibre utilisation is lower than average (resulting in higher than average costs). But Ofcom's estimate of FAC is based on a cost allocation which is averaged across broader areas. It therefore significantly under-estimates the cost to recover the de-averaged cost of the <u>actual</u> duct and fibre in use for the relevant dark fibre circuits.

6 Ofcom materially underestimates the cost of capital in the BCMR

6.1 Ofcom has lowered its WACC estimate for the BCMR to 8.0%, from 9.8% (nominal, pre-tax) in its 2016 BCMR and 8.9% in the 2018 WLA. Ofcom continues with its disaggregated WACC approach, disaggregating the BT Group WACC into 'Openreach Access', 'Other UK Telecoms' and 'Rest of BT'. The 'Other UK Telecoms' WACC is applied to business connectivity markets, and specifically to dark fibre at BT-only exchanges in Ofcom's current BCMR proposals (where it proposes a cost-based charge control).

6.2 Ofcom's reduction in the WACC for 'Other UK Telecoms' relative to the 2018 WLA is driven by three principal changes:

- A reduction in the real total market return (TMR), the sum of the risk-free rate and the equity risk premium (ERP), from 6.3% to 5.8% in real terms against RPI.
- A reduction in the real risk-free rate, from 0% to -1.25% in real terms against RPI.
- A reduction in the asset beta, from 0.73 to 0.65.

6.3 We have major concerns with all three of the above changes. Given the Government's stated aim of encouraging fibre investment, it would be inappropriate of Ofcom to lower its estimate of the cost of capital at this time, as it would constrain Openreach's ability to invest. Ofcom recognises the uncertainty around its estimates of individual parameters underpinning its WACC calculation, and we believe it should exercise caution to preserve Openreach's incentive to invest. Ofcom's proposed reduction in the 'Other UK Telecoms' WACC from 8.9% in its March 2018 WLA decision to 8.0% in its BCMR consultation, in the space of only eight months, is inconsistent with this Government objective to promote investment.

6.4 We explain our concerns with Ofcom's changes further in Annex 2, but in summary:

- **Total market return**: Ofcom places too much weight on some specific forward-looking dividend growth model 'DGM' evidence, whilst ignoring other DGM-based estimates. Given that the DGM requires the use of subjective assumptions that produce a wide confidence interval for estimates, we believe that long-run historical evidence, based on actual observed returns, remains the most objective method for setting the expected TMR, and also captures the inherent stability in the TMR over time. We believe a real TMR (CPI-deflated) of 7.0%, based on long-run historical evidence, as opposed to Ofcom's estimate of 6.7%, is the most reliable estimate for this BCMR.
- **Risk-free rate:** Ofcom uses short-run averages of gilt yields, which result in unstable estimates across regulatory reviews that create unnecessary uncertainty for investors. Whilst long-run historical averages suggest a real risk-free rate slightly below zero, we show that interest rates are set to increase over the period. Given this, we believe that Ofcom's March 2018 real-risk free rate estimate of 0% remains appropriate. A real risk-free rate estimate of 0% is also consistent with ten and fifteen year historical averages of gilt yields, capturing the expectation that interest rates are expected to increase towards their long-run historical average in the coming years.

- **Asset beta**: Ofcom's estimate of 0.65 underestimates the asset beta for business connectivity markets, because it does not recognise that these markets tend to be more risky than the other services that fall within 'Other UK Telecoms'. There has been no material change in the systematic risk of business connectivity markets since Ofcom's 2016 BCMR decision. We therefore believe its 2016 BCMR beta estimate of 0.70 remains appropriate.

6.5 We also estimate a higher cost of debt based on the higher risk-free rate above, which is a consequence of Ofcom's approach to estimating the cost of new debt as the sum of the risk-free rate and debt premium. A higher risk-free rate of 0% increases Ofcom's cost of new debt estimate from 2.9% to 4.2%, and consequently increases the overall cost of debt from 4.0% to 4.2%. We agree with Ofcom's move towards calculating the cost of debt as a weighted average of existing and new debt costs, including its calculation of the cost of existing debt based on BT's actual embedded debt costs.

6.6 Reflecting these amendments to the Ofcom approach, we estimate a WACC (nominal, pre-tax) for BCMR of 8.8% compared to Ofcom's estimate of 8.0% as set out below.

Table 1: WACC Estimate with BT's proposed amendments

	Ofcom Estimate	BT Estimate
Real RFR	-1.25%	0.0%
RPI	2.9%	2.9%
Nominal RFR	1.6%	2.9%
Nominal ERP	7.2%	6.3%
Debt beta	0.10	0.10
Asset beta	0.65	0.70
Asset beta weight	65%	65%
Fwd-looking gearing	35%	35%
Equity beta	0.95	1.02
Cost of equity (post-tax)	8.4%	9.3%
Cost of equity (pre-tax)	10.2%	11.3%
Debt premium		
Corporate tax rate	17%	17%
Cost of debt (pre-tax)	4.0%	4.2%
WACC (pre-tax nominal)	**8.0%**	**8.8%**

6.7 Annex 2 sets out considers Ofcom's proposed approach to estimating each of the three parameters above, and propose alternative estimates.