openreach

Promoting investment and competition in fibre networks: Initial proposals – approach to remedies

Openreach response to Ofcom consultation

NON-CONFIDENTIAL VERSION

14 June 2019

Foreword

This response is provided by Openreach Limited[1]. Openreach is a wholesale network provider. We support more than 600 Communications Providers (CPs) to connect the 30 million UK homes and business to their networks. We sell our products and services to CPs so they can add their own products and provide their customers with bundled landline, mobile, broadband, TV and data services. Our services are available to everybody and our products have the same prices, terms and conditions, no matter who buys them.

As noted at various points in this response, we reserve our right to make further submissions on Ofcom's proposals as further evidence and analysis is presented as part of the consultation process ahead of final decisions implementing remedies from April 2021. We also refer Ofcom to the response submitted to the earlier Geographic Markets consultation.

[1] Openreach Limited is a wholly-owned subsidiary of BT Group Plc.

Contents

Executive summary

1. This consultation represents the next step in Ofcom's plan to implement a new regulatory framework across the provision of fixed access services from 2021 as part of the holistic Fixed Telecoms Market Review (FTMR). We share Ofcom's goal to support investment and competition in ultrafast services to as many people as possible. We have committed to invest in faster, better broadband networks, through our 'Fibre First' strategy. In May 2019, we announced a significant increase in our full fibre (FTTP) plans with a new target to build FTTP broadband to four million homes and businesses by the end of March 2021[2]. We also have an ambition to reach fifteen million homes and businesses by the middle of the next decade if we have the right conditions, especially the right regulatory and policy enablers, to invest.

2. In summary, in this response:

    a. We welcome many aspects of the remedies proposed by Ofcom in areas defined as 'potentially competitive', where the focus is on ensuring any regulatory rules in place are supportive of investment in FTTP networks:

        i. We support proposals to keep prices of existing anchor services flat in real terms and to set the price for a new FTTP anchor service at a moderate premium.

        ii. We welcome Ofcom's support for copper switchover and to the ongoing regulation of service and set out proposals for a more flexible set of regulations that will better reflect a rapidly changing market outlook and allow us to deliver the best solutions to our customers during a period of substantial change.

        iii. Overall these proposals would provide protection to consumers across a period of transformation where unit costs of supply for services will be volatile and provide directional support to Openreach and other network builders in developing cases to deploy FTTP at scale.

    b. We set out concerns that Ofcom's overall approach could result in constraints on our ability to compete on fair terms in the provision of ultrafast and leased lines services:

        i. There are already high levels of competition in these services and we expect to see increasing competition from an expanded Virgin Media footprint and well-financed fibre network builders utilising regulated unrestricted Ducts and Poles Access (uDPA) and from the capabilities offered by wireless and satellite solutions.

        ii. Given this, competitive dynamics should be allowed to 'play out' as suppliers of network access develop technical and commercial solutions to meet evolving customer needs.

    c. We welcome Ofcom's intent to make full fibre investment in the highest cost 'final third' attractive and strongly support the public policy objective of encouraging an even FTTP build across the UK and set out our thinking on how this can be achieved:

[2] https://www.btplc.com/News/#/pressreleases/results-for-the-full-year-to-31-march-2019-2871047

i. We encourage Ofcom to develop a framework that helps investors expect returns in the 'final third' that are equivalent to those available in the rest of the UK on a risk-adjusted basis.

ii. We agree that public subsidy will be needed and estimate that at least 10% of premises will need subsidy to be commercially attractive.

iii. We set out some concerns about the RAB model proposed by Ofcom. A RAB approach could lock in significant regional price variation from the outset, lead to high price volatility, undermine the scope for competitive entry, be complex to administer and ultimately not deliver against the public policy objective of a more evenly distributed FTTP deployment across the UK.

iv. It might be possible to address these concerns through the design and calibration of a RAB model, but we believe a simpler approach would be to treat the whole of the UK as 'potentially competitive' - or at least contestable - and apply the set of regulatory remedies currently proposed for prospectively competitive areas across the whole of the UK. If Ofcom sets price ceilings for the current copper-based anchor services and for any new FTTP anchor at the right level, we believe this approach would encourage FTTP build by us and others in the final third, particularly if the build cost curve is flatter than Ofcom expects.

v. We intend to trial build in this area to test how build costs vary. Such an approach would offer a number of advantages, including delivering an even build across all geographies, keeping open the prospects for competition across a wider area and minimising price differentials in the short and long-term. It also avoids the current 'cliff edge' nature of Ofcom's current approach which would impose very different pricing requirements in areas depending on Ofcom's speculative view on the scope for future competition. [✂]

d. Given our views that there is broader scope for commercial network build, we challenge Ofcom's proposal to regulate the supply of dark fibre access in the 'final third'.

3. Overall, it is vital that Ofcom's proposals provide a stable and predictable long-term framework against which risky investment decisions can be made. Ofcom's approach to pricing across copper and fibre-based services should endure beyond the five-years of this review, reflecting the much longer asset lives and investment payback period, and Ofcom should signal that no additional intervention to constrain FTTP prices would be introduced until investors have had the opportunity to earn returns consistent with the risks faced at the time of the investment – i.e. consistent with the 'fair bet' principle. We believe that Ofcom can establish a regulatory framework from 2021 that will – alongside public funding – support delivery of the government's ambition of universal UK-wide full fibre coverage by 2033. We look forward to working with Ofcom and other stakeholders in developing this framework.

Establishing regulation to support fibre investment

4. Ofcom's stated goal is to support investment and competition in ultrafast services to as many people and businesses as possible. We share this goal.

5. Over the last decade, Openreach has invested to drive near-universal availability of superfast broadband services based on VDSL fibre to the cabinet (FTTC) technology. We are now investing to make ultrafast services available. Over the last financial year we doubled the size of our ultrafast FTTP network to 1.2 million premises passed and have now passed a total of 2 million premises with our G.fast network. Our ambition is to expand ultrafast availability at scale and pace: on 9 May 2019, we announced an increased target to pass 4 million premises with FTTP by 2020/21, up from the previous 3 million target, and an ambition to pass 15 million premises with FTTP by the mid-2020s, up from 10 million, if the conditions are right.

6. Regulation is critical to these conditions:

    a. We are making **significant upfront investments** to construct an FTTP network that will replace existing copper-based connections to end-customers.

    b. The **timeframe for achieving payback on these investments is long and uncertain** and will, among other things, depend on our ability to deploy FTTP at the right build costs at the required pace, migrate customers onto the new platform, retire existing copper-based services and ultimately drive incremental revenue from the enhanced capability of the new network – i.e. a network that will offer higher capacity and higher reliability connections and enable UK consumers and businesses to access a broader and richer set of services, content and applications.

    c. The **success of these investments will be shaped by a number of factors**, many outside of Ofcom's and/or our direct control – e.g. the valuation end-customers actually place on the enhanced capability over time and how that might be affected by technological shifts with impacts on supply and demand. This presents risks that investments will fail to deliver adequate returns over adequate timeframes for investors. Investors will therefore need to see opportunities to earn and retain higher returns on the investment, in order to balance the identified risks and face a **'fair bet' investment decision**.

    d. **Regulation can define what access services we must provide across different technological platforms, what prices we can set and place limits on our ability to compete**. The regulatory rule-set in place at any point in the timeframe of an investment case will play a central role in determining the costs we will incur and the maximum revenues we will be allowed to generate. Concerns about the regulatory approach that might be taken in the short and long-run can affect both 'base case' outcomes on investment cases and limit the opportunity to earn the level of upside returns necessary to offer investors a fair bet. Uncertainty around the shape of future regulation increases the risks and costs of investment decisions.

7. A supportive regulatory framework requires, therefore, that:

    a. we can **minimise our costs** through efficient FTTP build and by driving efficient and timely migration from our existing copper-based services to FTTP-based services;

b. we are **allowed to compete fairly** with other networks and other technologies throughout the period of any investment case; and

c. we can **generate adequate future revenues to fund the investment case**: any price controls that are set over the timeframe of the investment case for access services – which may cover existing copper-based services and future FTTP-services – should provide us with the opportunity to extract the additional value required to justify the investments, including allowing a fair bet.

Ofcom's proposed regulatory framework

8. The regulatory framework Ofcom is proposing is built around the stated strategy of securing investment in fibre networks by Openreach and others through the promotion of network-based competition. Central to this strategy is the requirement proposed in November 2018's Physical Infrastructure Market Review (PIMR) consultation for Openreach to make DPA services available on unrestricted and cost-based terms across the UK. Ofcom has now published its draft PIMR Statement confirming its intentions and so we expect regulatory requirements to supply uDPA to become effective before the end of July 2019.

9. We were also clear in our view that the availability of regulated uDPA would be a 'game changer' in terms of long-term access market dynamics, in that:

   a. uDPA will be available on terms that reduce the costs and long-term financial risks of building access networks;

   b. this will increase the long-term economic viability of building new fibre-rich access networks offering access services at ultrafast speeds in excess of those available over the existing copper-based Openreach network;

   c. with a number of well-financed network builders already deploying full fibre networks and ongoing expansion in the scope and capability of the Virgin Media network, Openreach will face increased commercial drivers to invest in ultrafast capabilities; and

   d. as customers switch their connections from copper-based Openreach services to ultrafast connections, the unit costs of supplying the current set of anchor access services will increase and become volatile over time as the pace of migration increases and the useful economic life of the relevant assets reduces.

10. Generally, Ofcom's proposals reflect these market dynamics:

    a. **We support Ofcom's proposals to index prices for existing copper-based anchor products (i.e. MPF and 40/10 FTTC connections) to the Consumer Prices Index (CPI)**. This will maintain prices at 2021 levels in real terms across a period of unit cost volatility and provide stability and long-term certainty of key 'base-level' prices against which prices for fibre-based services can be considered, such that investors can assess the scope for driving adequate returns on potential network investments.

    b. **We welcome Ofcom's statement that regulation must support a smooth transition from copper-based to fibre services**. We broadly support Ofcom's proposals to shift the focus of regulation away from copper-based services to FTTP services on an exchange-by-exchange basis as FTTP is deployed. However, there are two important points of detail in the current proposals which we think need to be addressed. First, we are concerned about the practicality of Ofcom's suggestion that 100%

exchange coverage is required in order to trigger the shift of regulatory focus. It is highly unlikely we will reach 100% of most exchanges with FTTP given the challenges of network build although we do intend to ensure an ultrafast service is available to 100% of exchanges eventually (for example, through G.fast or vectored superfast). Second, it is important that we are able to implement 'stop-sell' (that is, stopping adding new supply to the copper network) well in advance of the likely achievable end point. We have proposed 75% exchange coverage as a sensible trigger point for stop-sell for those premises where ultrafast services are available. We have recently consulted with our wholesale customers on a proposed set of policies that would be applied to support smooth migration. CPs agree that 100% FTTP coverage in an exchange area is not feasible but want it to be as high as possible. We will continue to engage with Ofcom and all other stakeholders to develop workable and practical proposals that serve the needs of end-customers.

c. **We agree with Ofcom's proposal to price control an FTTP anchor service at a moderate premium to the FTTC anchor price once FTTP is available in an exchange area**. This will provide support for all investors in recovering costs and any premium would reflect the increased value to CPs and end-customers of being provided with services over the new platform at both the wholesale and retail level, and the cost savings CPs will realise as a result of the increased reliability of full-fibre networks.

d. **We agree with Ofcom's proposal *not* to impose specific controls on the price levels that would apply to FTTP services at bandwidths above the proposed FTTP anchor**. The prices that Openreach, Virgin Media and new access investors set for higher bandwidth connections will be driven by end-customer willingness to pay – i.e. the value those customers place on the bandwidth supplied at any point in time.

e. **We welcome Ofcom's continued support for the fair bet principle, but urge Ofcom to go further in explaining how this will drive any *future* consideration of whether, when and how price regulation should be applied.** Investors require assurances that the upside rewards they consider are necessary to support a risky investment will not be 'regulated away' in future decisions.

f. **We welcome Ofcom's proposed approach to Quality of Service (QoS).** This would retain Minimum Service Levels (MSLs) at 2021 levels, but, as set out in this response the key is to have sufficient flexibility on appropriate targets – i.e. to deal with any unintended consequences that could arise during a period of change in the mix of services provided – for example, to reflect an increase in the use of passive services – and to allow Openreach to agree with its customers new levels of service that better meet their requirements over time.

11. However, we do have some **concerns with Ofcom's proposed approach**:

a. Ofcom appears to be proposing that Openreach would be found to hold **Significant Market Power (SMP) in relation to the supply of all/any forms of network access service**, regardless of the capability of the services actually being supplied. Echoing comments made in response to Ofcom's November 2018 Geographic Markets Consultation, we are concerned that this approach would understate the current and future scope of competition and lead to us facing, via *ex ante* SMP remedies such as Equivalence of Inputs and no undue discrimination, unjustified restrictions on our commercial flexibility in responding to existing and future competition in the supply of higher bandwidth business connectivity services (wholesale leased lines) and ultrafast services supplied to residential and business

customers. The Remedies consultation does not set out any analysis of markets (supply and demand substitution, etc) or provide clarity on the approach Ofcom would take to consider differences in the conditions of competition for particular services in particular areas - e.g. wholesale leased lines in the Central London Area (CLA), other metro areas and/or to business parks or data centres. We would expect Ofcom to conduct such market analysis, taking full account of the forward-looking impact on competition that would be driven by the availability of uDPA. As competition increases, it is vital that Openreach has the commercial flexibility to compete fairly with network rivals and respond to evolving customer needs and does not face *ex ante* restrictions based on broad and inappropriate SMP findings. We will provide detailed views on Ofcom's market and SMP assessment when it is made available to us and the rest of the industry.

b. This concern about the potentially broad scope of Ofcom's SMP finding is then compounded by Ofcom's specific proposal to **prohibit geographic discounting** across a range of access services, including ultrafast FTTP connections and leased lines services in the 'potentially competitive' area. In the face of geographic competition focussed on low-cost and/or higher value build areas, a 'blanket' prohibition on any geographic discounting could leave us unable to react fairly and efficiently to existing and future competitive threats. We do not believe such a prohibition can be justified by reference to a robust assessment of market conditions relating to leased lines and FTTP services. At a minimum, we would expect to be able to price differentiate between areas of different costs and in reaction to competition from established providers, such as Virgin Media. We would invite Ofcom to clarify the nature of its concerns with Openreach responding to competitive threats within the bounds of competition law requirements to see if there are less restrictive ways in which we could provide assurances that we were competing fairly on a head-to-head basis with competitors. [✂] If that first order test were 'failed', we could present evidence and analysis to allay any concerns about the potential impact on competition.

Ofcom's proposed approach to regulation in the 'final third' ("non-competitive" area)

12. Ofcom's proposed approach seeks to define an area where uDPA is considered insufficient to support network investment over the long-term by competing network builders. In Ofcom's 'illustrative assessment' published in the November 2018 Geographic Markets Consultation it was suggested this area could cover ~30% of UK premises. Given the expected absence of competitive build, Ofcom believes that Openreach would face limited commercial incentives to invest in FTTP and, therefore, in the Remedies Consultation, proposes to establish a utility-like RAB model that would establish an approach to setting Openreach's access prices across copper-based and ultrafast services in the 'final third' at levels that would fund investment in FTTP build over the long-term.

13. We support Ofcom's policy objective of wanting to establish regulation in a way that will support FTTP investment across *all* areas of the UK and limit the risk of certain customers in higher cost areas being 'left behind' as the copper network is upgraded. We have been and remain active bidders for public funding to build FTTP across areas with high build costs (e.g. BDUK and R100 tenders) and are looking to get experience of building across a range of different areas to gain a better understanding of operational challenges and how build costs may vary.

14. The fundamentals of an investment case to build FTTP are the same across different geographic areas – i.e. they will be driven by an assessment of whether there is an opportunity to earn a reasonable rate of return given expected build costs and long-term demand/willingness to pay. Decisions on which areas we should build in and the ordering of build across different areas will be shaped by operational factors (e.g. the geographic

spread of resource), overall financial constraints on build and the relative attractiveness of the investment case in different areas allowing for supply and demand factors.

15. We are concerned that Ofcom's proposed approach would be taking a premature and, therefore, limited view of the scope for Openreach or any other network builder to construct a viable investment case – i.e. at a point in time where experience of building across different areas is limited. Ofcom's position appears to be framed by a belief that there is likely to be a sharp upturn in build costs in the final third of the UK relative to the costs in the remaining areas where there is the potential for competitive build. We believe, subject to ongoing testing of build costs, the gradient of the cost curve could be relatively flat until the final 10% of premises, where some form of public subsidy would be required. If this is the case, then, so long as the pro-investment remedies Ofcom is proposing in other geographic areas were in place and sufficient public subsidy was available to cover the final 10%, the case for Openreach and/or other network builders to commercially deploy FTTP in all geographic areas is stronger than Ofcom considers it to be.

16. As such, we believe Ofcom should identify all geographic areas as potentially competitive in 2021 in that they are contestable and apply the same remedies including the proposed anchor pricing remedies (i.e. real term flat prices on copper and FTTC anchors and a moderate premium on the new FTTP anchor) across the UK. [✂] This would ensure:

    a. FTTP deployment progresses at pace across all geographic areas with no specific areas 'left behind' or 'left to the end', so delivering against the public policy objective;

    b. Scope for competitive build in all areas remains open;

    c. There is no 'cliff-edge' effect of applying different remedies in different postcode sectors which could radically impact build plans; and

    d. prices of copper-based and FTTP anchor services would be at the same level across all geographies and stable over time as networks were deployed.

17. While in theory it might be possible to design and calibrate a RAB-type model to achieve these aims, in practice we believe this would be very challenging. In particular:

    a. Such an approach would be highly complex to design and would depend on a long-term regulatory view and ongoing monitoring of costs and expected demand. The scope for regulatory error is high and 'correction mechanisms' in future controls may be hard to implement in practice (e.g. where future price rises may be required to make good on the investment).

    b. Ofcom appears to be proposing an approach that would *cut* existing copper-based anchor prices in the non-competitive area from 2021 and only allow prices to rise from this level as any investment in FTTP is made. This would have the effect of chilling investment by potential network builders by reducing the price levels that could be applied to higher capability FTTP connections. Adopting a RAB approach too early and too widely therefore risks limiting the scope for infrastructure competition that might otherwise emerge.

    c. In any RAB-model, an immediate reduction in the price levels on existing anchor services for customers in the RAB area would inevitably mean volatility in those prices over time and a shift in the burden of cost recovery onto future prices for FTTP services with the risk that that might result in significant price

differentials between geographic areas – i.e. initially lower prices for current anchors, but then higher prices for FTTP services.

d. We would continue to face some level of competitive risk within the RAB area over the long-term course of any investment case. i.e. even with lower anchor prices, some targeted build may emerge and, increasingly, wireless technologies will be used by certain customers in the final third. Any price ceilings that Ofcom may set with the aim of allowing cost recovery may not therefore be achievable or sustainable over the long term in light of these competitive pressures.

e. We are also concerned that Ofcom might assume that investors would accept a lower rate of return in the non-competitive area due to lower risks of competitive losses. However, where operational or financial constraints apply not all projects will be funded, and those with a higher risk-adjusted return will be prioritised. The result is likely to be that, with a RAB-type model on 'offer', build in the areas identified as prospectively competitive would be prioritised by Openreach and other infrastructure builders, with any build in uncompetitive areas only happening much later.

18. Our view, therefore, is that investment in the 'final third' would be better supported by:

    a. Expanding the 'potentially competitive' footprint to include all geographic areas given the scope for commercial build of fibre network.

    b. Applying the same set of remedies across the UK: indexing copper-based anchor prices with CPI from 2021 levels and an FTTP anchor product priced at a moderate premium.

    c. Ensuring adequate public funding is available to subsidise build costs across the most expensive parts of the country, covering ~10% of UK premises.

19. We believe this approach is simpler, maximises the scope for commercial infrastructure deployment by Openreach and others at a relatively early stage in the investment cycle, and is likely to yield even deployment of FTTP infrastructure across the country. It would also avoid price differentials or volatility in anchor prices and hold open the prospect of greater pricing homogeneity across the UK for longer.

20. In order to better inform the debate around different approaches, we propose to trial build in the current 'final third' area as defined to better understand build costs and explore options for commercial build.

21. In light of our position on the scope for commercial deployment of fibre networks across all geographies utilising uDPA, it follows that there is no justification or need for Ofcom to extend regulatory requirements to supply dark fibre into access in the final third. Ofcom's proposal appears contradictory even on the terms set out in the Remedies Consultation:

    a. Ofcom's proposal is to categorise areas as 'non-competitive' on the basis that no *multi-service* fibre-rich networks are expected to be deployed utilising uDPA in this area. As noted, it appears that this finding gives no specific weight to the actual or potential presence of leased lines networks targeted at business customers within these areas.

    b. However, Ofcom suggests that competition in the supply of leased lines networks and services within the final third *could* emerge based on access to Openreach dark fibre on regulated, cost-based charges.

c. While the proposal to require Openreach to make dark fibre available within the non-competitive area is driven by an assessment of competition in the supply of leased line services, Ofcom goes on to suggest that dark fibre should be provided without usage restrictions, implying that dark fibres could be used – potentially alongside or instead of uDPA – to reduce the costs of deploying *multi-service* fibre-rich networks.

d. This would then be inconsistent with Ofcom's logic that there would be no scope for competitive supply of such networks in this area and that a utility-like RAB-model could therefore be used to support investment.

e. Among other things, these proposals do not appear to have been based on consideration of:

   i. The extent of existing competition in the supply of leased lines within the scope of the non-competitive area – e.g. the concentration of alternative networks in business areas of towns and cities, business parks and/or data centres.

   ii. How build economics of leased line networks are expected to be impacted by the availability of uDPA – i.e. how the competitive supply of leased line networks might change on a forward-looking basis and whether all or some of the 'non-competitive' area might actually be 'potentially competitive' in the context of leased line services given the availability of uDPA.

   iii. How the availability of regulated dark fibre across the non-competitive area might support build of multi-service fibre-rich networks and how that might impact the viability of a RAB-type model in this area as a means of incentivising Openreach to deploy FTTP.

22. Any concerns with a proposal to introduce dark fibre are compounded by concerns that pricing would not reflect the forward-looking costs of supply. There is a risk that pricing reflects unit cost data based on today's use of the network assets in support of a range of active access services where costs are recovered from prices that vary by the bandwidth supplied. As the use of the network changes where dark fibre is available – e.g. fewer fibre strands are utilised – there is a significant risk that we would be exposed to under-recovery of costs distorting incentives to invest.

Structure of response

23. This response is structured in the following way:

- **Section 1** provides market context for this review assessing the outlook for supply and demand of fixed line services and identifying what is required to support investment in fibre networks.
- **Section 2** considers how Ofcom might assess market definition and SMP.
- **Section 3** considers Ofcom's proposal to define two areas within SMP markets and the specific proposals around remedies in each.
- **Section 4** considers the issues raised by switchover.
- **Section 5** considers Quality of Service.
- **Section 6** considers Ofcom's proposals on dark fibre.

1. Market context: supply and demand for fixed access lines

Introduction

24. Ofcom is considering how regulatory rules should be set across fixed access services from 2021 to best meet its stated goal of supporting investment and competition in ultrafast services to as many UK consumers and businesses as possible.

25. In this, Ofcom is, for the first time, taking a 'holistic' approach looking across all forms of fixed line access services in a single market review rather than looking separately at the provision of narrowband services in the Wholesale Fixed Access Line Market Review (WFAEL), broadband connectivity in the Wholesale Local Access (WLA) and Wholesale Broadband Access (WBA) market reviews and high speed business connectivity services in the Business Connectivity Market Review (BCMR). We welcome this holistic approach as it will allow Ofcom to consider how competition is expected to evolve across different forms of network access and the anticipated impacts from the wider availability of multi-service, fibre-rich networks.

26. As broad context, therefore, this section provides an overview of supply and demand across fixed line services, covering:

    a. the current supply of fixed access services supporting voice and broadband;

    b. the current supply of fixed access services supporting high speed connectivity for business services and network backhaul;

    c. the outlook over the next 5-10 years for the supply of fixed access services;

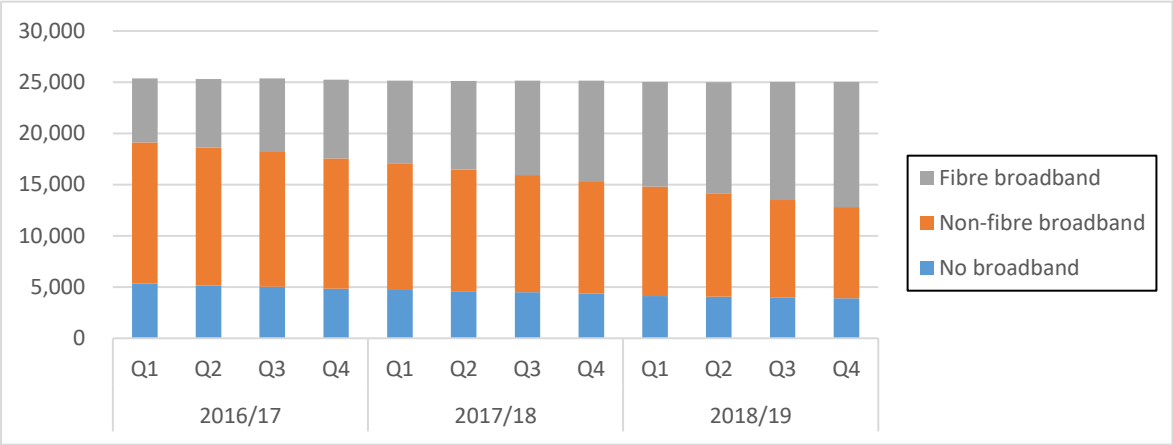
    d. the outlook for wireless technologies; and

    e. the implications for Openreach's consideration of investments in ultrafast network capabilities and the regulatory enablers we need.

Current supply of fixed access services supporting voice and broadband

27. At the end of March 2019, Openreach was supplying over 25 million physical lines in the UK, of which over 21 million supported the provision of broadband services over a fixed connection.

Figure 1: Openreach supply of fixed access lines ('000s)

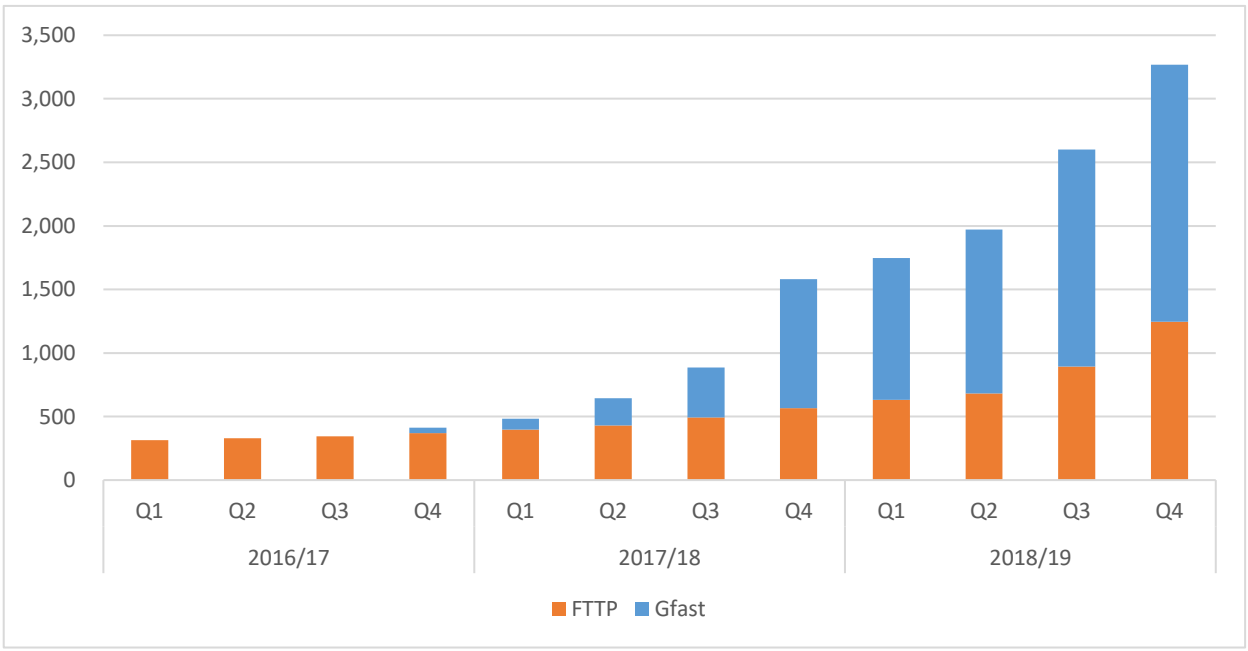


Source: BT Key Performance Indications, Q4 2018/19[3]

28. As Figure 1 above shows, demand for higher speed broadband is growing. At the end of March 2019, 56% of lines (over 12 million) were provided over fibre-based connections, almost all using FTTC technology to offer superfast access speed capabilities. Take-up of superfast speeds has been driven by the volume deals agreed with all major customers in the first quarter of 2018/19 where price discounts on higher speed connections are available provided that certain take-up conditions are met.

29. Openreach also now has the capability to offer ultrafast broadband speeds to 3.2 million UK homes through the deployment of G.fast and FTTP technology.

Figure 2: Openreach ultrafast network build ('000 homes passed)



Source: BT Key Performance Indicators, Q4 2018/19

[3] https://btplc.com/Sharesandperformance/Financialreportingandnews/Quarterlyresults/index.htm

30. However, while we are ramping up our capabilities, sales over these technologies remain modest at just over 300,000 at end of March 2019.

31. In contrast, Virgin Media has a much larger ultrafast-capable footprint of c15m homes and is therefore currently supplying a larger number of customers than Openreach with ultrafast connections. Ofcom reports that Virgin Media supplied 4.9 million fixed exchange lines to residential and small business customers at the end of 2018[4], the majority of which will support broadband and Virgin Media has recently reported that over 70% of its broadband customers are receiving speeds in excess of 100Mb/s following network upgrades in recent years[5].

32. While a number of other fixed access network suppliers are active and have plans to deploy larger networks in the near future (see below), it is interesting to compare the split of fixed line connections supplied by Openreach and Virgin Media and how these differ by the minimum service capability of the line. The table below makes simplifying assumptions based on publicly available information (e.g. assumes all Virgin Media lines provide broadband capability, 70% provide speeds in excess of 100Mb/s and that all Openreach FTTP and G.fast lines are supplied at speeds above 100Mb/s) but the magnitude of the difference in split of line shares at different capabilities – even at a national level – is clear.

Table 1: estimated share of connections supplied by Openreach and Virgin Media

	Lines (millions)		Share of supply	
	Openreach	Virgin Media	Openreach	Virgin Media
Supply of fixed lines with capability of providing voice services	25	5	83%	17%
Supply of fixed lines providing some form of broadband access	21	5	81%	19%
Supply of fixed lines providing broadband at or above superfast speeds	12	5	71%	29%
Supply of fixed lines at speeds above 100MB	0.3	3.5	8%	92%

33. As Virgin Media's network footprint covers around 45% of UK premises (currently expanding under "Project Lightning"), it follows that its share of lines within that footprint is much higher. [✂] We note our estimates broadly align with the estimates (presented as ranges for confidentiality purposes) set out by Ofcom in Table 4.3 of the WLA market review statement in March 2018.

Supply of fixed access services to support high speed business connectivity and backhaul services

34. Ofcom has almost completed its latest BCMR. As part of this process, Ofcom identified the extensive nature of network build capable of supplying customers with high speed business connectivity and network backhaul services. Among other things, this identified:

[4] Ofcom Telecoms Data Updates, Q4 2018, published 2 May 2019
https://www.ofcom.org.uk/__data/assets/pdf_file/0027/146682/q4-2018-telecoms-data-update.pdf
[5] https://www.libertyglobal.com/wp-content/uploads/2019/05/Virgin-Media-Fixed-Income-Q1-2019-Release.pdf

a. In the CLA, 90% of business sites and mobile masts are within 50m of two or more rival networks, and a further 6% are within 50m of one rival network.

b. In other High Network Reach areas, including the metro areas, 83% of business sites and mobile masts are within 50m of two rival networks and 13% are within 50m of one rival network.

c. In the "BT +1" exchanges, 85% of sites are within 50m of one rival network.

d. Even in the "BT Only" areas, there are 4% of sites within 50m of two rival networks and 19% within 50m of one rival network – these are still substantial numbers of sites with competitive supply (more than 21,500 sites in total).

e. Nationally, there are 14% of sites within 50m of two rival networks, and 39% of sites within 50m of one rival network – 53% of all business have at least one rival network close by.

Outlook for the supply of fixed access services

35. On 9 May 2019, Openreach announced an increased target to pass 4 million premises with FTTP by 2020/21, up from the previous 3 million target, and an ambition to pass 15 million premises with FTTP by the mid-2020s, up from 10 million, if the conditions are right (see below).

36. We have now announced 38 locations – cities, towns and boroughs – where we are building FTTP or plan to start building FTTP in the next 12 months.

37. Competition in the supply of fixed line services is expected to increase over the coming years as Virgin Media continues to extend the scope and capability of its network through its Project Lightning initiative and a number of new network access builders deploy fibre networks. [✂]

38. We would also note that Virgin Media stated that 86% of its extended Project Lightning build in the three months to March 2019 was full fibre[6]. By investing in full fibre networks across UK towns and cities, all these suppliers will be able to supply a suite of connectivity services at the wholesale or retail level to serve the needs of residential customers, small and large business customers and fixed and mobile network builders. The economic imperitive will be to maximise the value that can be extracted over the long-term and suppliers will be exploring all options to do so – whether through development of direct retail solutions or wholesale supply arrangements, including risk-sharing and co-investment models. As such, on a 5-10 year outlook, we would expect to see potentially radical shifts in competition.

39. On the demand side, we are already seeing our major wholesale customers inviting all suppliers to set out details of their expected capabilities over time and the commercial terms on which they would be willing to supply connectivity over networks as they are deployed. Customers are looking for long-term certainty around pricing as they consider their future retail market strategies and are indicating a willingness to split supply across geographic areas and consider long-term, exclusivity arrangements.

Threats from wireless solutions

[6] https://www.libertyglobal.com/wp-content/uploads/2019/05/Virgin-Media-Fixed-Income-Q1-2019-Release.pdf, page 2

40. On top of shifts in the supply of fixed line connectivity services, there will be shifts in the capability of wireless connectivity to meet the needs of end-customers. 5G deployments will unlock significant capacity which mobile operators can use to target fixed customers with 'fixed wireless' offers. In particular:

    a. We expect deployment into low-band and mid-band spectrum (up to c. 3.7Ghz) on macro cell sites to allow mobile providers to offer broadband solutions comparable to FTTC speeds.

    b. Further deployment using that spectrum by adding small cells is expected to emerge, thereby increasing capacity and the risks of line loss.

    c. Deployments using higher frequency spectrum could compete with FTTP speeds and could be deployed at costs lower than those likely to be faced by fixed providers in some locations. Facebook and others are experimenting with deployments in the license exempt 60GHz spectrum range.

41. While the level of impact this may have on the provision of fixed lines is hard to predict even relatively conservative views (e.g. ~10%) would have a significant impact on take-up assumptions underpinning investment cases. We note that in Portugal, over 7% of broadband lines were supplied by FWA at the end of 2018 showing the scope for this technology to meet customer needs.

42. In addition, in May 2019, it was reported[7] that the SpaceX company began the roll-out of a low orbiting satellite based broadband system and this technology would therefore extend customer options in the future.

Conditions required to support fibre network build and implications for regulation

43. In deciding whether, when and how much to invest in fibre network build, any investors will need to expect that they can recover costs and earn an acceptable rate of return on their investments by:

    a. Deploying the planned network at an efficient and acceptable build cost;

    b. Operating the network at efficient cost levels over time; and

    c. Extracting adequate revenue over the long-run based on:

        i. Increasing customer valuation of – and willingness to pay a premium for – the access services that can be offered over a fibre connection (higher speeds, increased reliability, etc); and

        ii. Ability to compete with other fixed access suppliers and emerging technologies in supplying wholesale access services and/or retail services to end-customers.

44. Given the scale of upfront build costs, any network investment will only payback over a long period. Investors will therefore need to reflect on the issues set out above – i.e. the outlook for supply and demand of fixed services and the potential threats presented by wireless solutions over the long-term. Investment decisions will reflect their beliefs around a number of risks and opportunities; returns would not be guaranteed in any given timeframe, but investors would expect that upside opportunities would at least offset downside risks.

45. But while would-be investors will need to take account of broader market factors, assessments will also be shaped by regulation across the period of any investment case.

[7] https://www.bbc.co.uk/news/science-environment-48289204

46. Openreach is currently operating a network capable of supplying most customers with superfast access services at speeds up to 80Mb/s and a range of high-speed business connectivity services. We face specific regulatory obligations to supply certain services on demand and to supply a defined set of access products at charge-controlled prices. Among other things, we are currently required to offer access to two 'anchor services' (unbundled copper lines and 40/10 FTTC access connections) at prices defined by a cost-modelling exercise built around the ongoing operation of our existing network, ignoring any future impacts of investing in FTTP networks.

47. The pricing of these existing anchor services will therefore have a direct impact on any case to invest in FTTP access networks:

    a. Openreach will need to consider the premium customers will be willing to pay for services with capabilities above those offered by the anchor services and how this might drive the level of *incremental* long-term value that the new network could generate compared to ongoing operation of the existing network; and

    b. Any alternative network supplier will need to offer services at price points and/or with functional capabilities that can profitably compete with Openreach's anchor services.

48. Any regulation applying to the pricing of any FTTP services at any point in the period of an investment case will also have a direct impact on any case to invest in FTTP access networks by constraining Openreach prices and, therefore, price levels that might otherwise materialise reflecting customer valuations.

49. Given the direct role regulation plays in governing Openreach's activity, any Openreach case to invest also needs to take a long-term view of the following:

    a. How requirements to supply services on our existing copper access network will be adjusted as the FTTP network is deployed and the pace at which we will be allowed to migrate customers onto the new network and retire existing assets;

    b. How regulated prices of current anchor services will adjust over time as volumes shift away (whether to Openreach FTTP services or new access networks);

    c. How any price regulation that might be introduced on any FTTP services during the period of the business case will be set and how it will reflect the risks and uncertainties faced at the point the investment is actually being considered (i.e. the 'fair bet'); and

    d. How regulation might affect our ability to compete against other suppliers – whether by reducing their costs of build/operation or by constraining our commercial options.

50. In summary, therefore, to support delivery of its stated goal, the regulatory approach Ofcom adopts in 2021 must take account of the following:

    a. The 5-10 year outlook for supply and demand of fixed line services, in particular reflecting:

        i. The existing strength of Virgin Media in the supply of ultrafast connections and its ongoing expansion plans;

ii. The number of well-financed network builders with ambitious build plans who will look to drive volume to, and value from, their networks through a range of wholesale and/or retail offerings;

iii. The fact that wholesale customers will look to leverage the size of their existing base of fixed line customers to secure long-term certainty around pricing of fibre-based access;

iv. The threats to fixed line services presented by high capability wireless solutions including 5G and satellite; and

v. The existing strength of competition in the supply of high bandwidth connectivity for business and network backhaul and how this will be affected by the availability of uDPA on regulated terms.

b. The need to signal a long-term approach to regulation that is supportive of investment by Openreach and others insofar as it is considered appropriate, in light of a forward-looking market assessment, to regulate now or in the future:

i. The price levels for current anchor services;

ii. The price levels for any FTTP services;

iii. The price levels for any high bandwidth connectivity services;

iv. The price levels for uDPA;

v. Obligations to supply access to any other inputs that will shape the costs of competitive build (e.g. dark fibre across any part of the Openreach network); and

vi. The terms on which Openreach competes.

2. Appraising Ofcom's proposed approach to market definition and finding SMP

51. The Remedies Consultation – like the November 2018 Geographic Markets Consultation – does not explicitly set out any analysis to define particular product markets and determine that Openreach has SMP. Rather it takes as its starting point that Openreach has been found to have SMP and considers what remedies might be appropriate.

52. Clearly Ofcom will need to conduct a full assessment of demand and supply conditions relating to fixed line access services as part of the market review exercise in order to appropriately define product market boundaries and consider evidence about competitiveness on a forward-looking basis. That exercise would need to take full account of the market context set out in Section 1 of this response. Final proposals on remedies would only be relevant in markets where SMP was found and would need to be proportionate in addressing the specific competition concerns that have been identified. We will provide our detailed comments on Ofcom's proposed market definitions and SMP assessment when it is produced.

53. However, pending Ofcom's detailed assessment, we are concerned that the way Ofcom has positioned its proposed approach suggests that it might be considering defining a new, very broad market of "wholesale network services" and imposing a 'blanket' SMP finding on Openreach that applies across our supply of all fixed access services. Specifically:

    a. in the Geographic Markets Consultation, Ofcom's focus was on the presence or otherwise of multi-service networks and its illustrative assessment appeared to suggest there would be no areas where Openreach would not hold SMP[8]; and

    b. in the Remedies Document, Ofcom suggests that Openreach would face remedies across all access services – i.e. copper, FTTC, FTTP and leased lines services.

54. We understand Ofcom's policy objective of seeking to promote investment in fibre-rich, multi-service access networks – i.e. networks that would, by implied definition, be capable of providing the full range of fixed line access services to support voice, broadband and high bandwidth business connectivity services. We also understand the strategic importance Ofcom places on our supply of uDPA to support the building of these networks and agree that, if such networks are built or are expected to be built in a given geographic area over a forward-looking period, it would then be relevant to consider whether the supply of ***all*** fixed line access services in that area was effectively competitive. However, this would not justify an approach to market definition that did not consider differences in the conditions of competition between the different access services.

55. As we have noted in Section 1, there are significant differences in the conditions of competition:

    a. for the supply of ultrafast access services compared with the supply of access services supporting voice services, standard broadband and superfast broadband; and

    b. for the supply of wholesale leased line services compared to other access services given the current economics of network build.

[8] Although we noted some confusion about the precise way Ofcom would deal with the current finding that Openreach does not hold SMP in the provision of business connectivity services in the CLA.

56. There are also currently differences in the supply of access services in Virgin Media areas compared to elsewhere and, for wholesale leased lines, in the CLA and other High Network Reach areas compared to elsewhere. Ofcom has also identified differences in the competitiveness of different backhaul routes in proposing regulation to apply to inter-exchange connectivity. Availability of uDPA should logically mean that an even *wider* scope of areas should be viewed as competitive on a forward-looking basis – e.g. that it would become economic for networks to extend out to a broader geographic range of end-customer locations over longer dig distances in the supply of wholesale leased lines. We are concerned that if Ofcom were to adopt a broader approach to market definition focused on the availability of new multi-service networks this would actually result in fewer, if any, products and/or geographic areas being considered to be competitive in 2021.

57. We note below that, to an extent, the remedies Ofcom is proposing to adopt at the active layer – i.e. downstream of uDPA – reflect expectations about increasing future competition. The focus of cost-based regulation at the physical infrastructure level may then be viewed as justifying a simplified, broad-brush approach to the assessment of competition at the active layer. But the real risk of a wide, 'blanket' finding of SMP would be that it could serve to misdiagnose and/or overstate competition problems or risks and then be used to justify ongoing unnecessary and economically inefficient regulatory interventions. As we discuss further below, this would be a particular problem if:

    a. Ofcom considered that Openreach has SMP in the provision of ultrafast services in 2021 despite our position relative to Virgin Media and the emergence of new competitors and this was used to justify *ex ante* prohibitions on our ability to apply geographic discounts or be flexible in our pricing approach in the supply of Openreach FTTP services; and

    b. Ofcom considered that Openreach had SMP in the provision of wholesale leased lines in 2021 despite the ability of other network providers to economically supply customers using uDPA over a wide geographic area and this was used to justify (i) prohibitions on our ability to apply geographic discounts or be flexible in our pricing approach in the supply of leased lines services or (ii) a requirement to provide regulated dark fibre access in areas where scale multi-service networks were not expected to be deployed or (iii) to justify the introduction of dark fibre before seeing whether the introduction of uDPA could already be a sufficient remedy.

58. We would therefore expect that in defining markets and finding SMP in the next market review consultation, Ofcom will conduct a full and thorough forward-looking assessment of supply and demand conditions across different access services and taking full account of the impact uDPA will have and of all the factors set out in Section 1.

3. Ofcom's proposed approach to categorising and setting remedies in 'potentially competitive' and 'non-competitive' areas

Introduction

59. Where Ofcom finds SMP, it is proposing to categorise areas as either 'potentially competitive' or 'non-competitive'. Ofcom's Geographic Markets Consultation set out proposals for how this categorisation could be carried out by reference to a postcode sector level assessment of existing network build and the scope for future network build. The assessment of the scope for future build would take account of explicit build plans (e.g. as set out in Section 1) and an analysis of the density of premises within contiguous postcode sector (seemingly, as a broad proxy for where it might prove economic for new networks to be built). Ofcom's indicative assessment suggested that it saw scope for competing commercial investment in fibre networks in about two thirds of the country, leaving a concern about how to drive investment within the 'final third'.

60. In responding to the Geographic Markets Consultation, we noted that it was hard to be definitive about where the line between a 'potentially competitive' and 'non-competitive' area should be drawn without having a full understanding of the policy implications of the proposed distinction – i.e. how the remedies would differ. The Remedies Consultation sets out that detail and proposes to:

    a. promote competitive build of fibre-rich multi-service networks in areas where it believes this is viable (i.e. the 'potentially competitive' area); and

    b. develop a RAB type model in an attempt to promote investment by Openreach in areas where Ofcom considers that competitive build is not considered viable (i.e. the 'non-competitive' area).

61. Such an approach creates something of a dangerous cliff edge in terms of the remedies that apply in postcode sectors that are defined as falling within the two areas. It makes getting the boundary right on a forward-looking basis very important at a time when uncertainty about long-term market dynamics and build economics is very high. There is also a concern that Ofcom's judgement on where there is no scope for competitive entry becomes self-fulfilling as remedies are not set to promote competition – e.g. prices for anchor services may be significantly reduced in the short to mid-term under a proposed RAB model.

62. In the sub-sections below, we consider the appropriateness of the proposed remedies in driving the desired policy outcomes and, in light of this, reconsider the appropriateness (and relevance) of the boundaries Ofcom is proposing to draw between the 'potentially competitive' and 'non-competitive' areas.

Remedies proposed in the 'potentially competitive' area

63. We are supportive of many of the proposals put forward by Ofcom as remedies within the 'potentially competitive' area, although – reflecting the concerns set out in Section 2 – believe Ofcom risks introducing unnecessary and inefficient regulation around the commercial terms on which we would be allowed to supply ultrafast FTTP and wholesale leased lines services.

64. Ofcom's overall approach appears to recognise that the availability of regulated and unrestricted DPA will act as a 'game changer' in the long-term competitiveness of supply as new network builders will face reduced costs of deploying fibre-rich, multi-service networks. This therefore should support a change in approach to regulation at the 'active' layer of network access downstream of the physical infrastructure layer. Indeed, any intrusive

ongoing regulation at that level risks distorting investment decisions and working against Ofcom's stated policy goal.

65. As markets evolve – on the demand side, through increased take-up of ultrafast services; on the supply side, through increased competition and innovation – Ofcom's role in the active layer should be focussed, at most, on safeguard regulation to protect end-customers during a transitional period ensuring at the same time that incentives to invest in new fibre networks exist. In many respects, the set of proposals presented in the Remedies Consultation relating to wholesale access services supporting the provision of voice and broadband services can be viewed as serving this purpose, in that:

    a. Ofcom plans to maintain prices for the current set of anchor services at 2021 prices, allowing for inflation, as fibre networks are rolled out and as customers migrate to FTTP services;

    b. Ofcom identifies steps it will to take to support the efficient migration from existing anchor services to FTTP services – e.g. to ensure continuation of service and no 'day one' price shocks; and

    c. Ofcom proposes to allow a new FTTP anchor price to be set at a 'moderate' premium and not directly regulate prices at higher bandwidths.

66. These steps are also vital to Openreach and other players investing in FTTP at scale and pace and will have benefits to consumers:

    a. Stable prices on existing anchor services will allow us to provide these services with a higher-level confidence about long-term cost recovery during a period where volumes on the current network will fall and unit costs of provision will be volatile ahead of platform retirement and where, therefore, setting prices to recover forecast unit costs in any period would be increasingly difficult.

    b. Stabilising FTTC prices after the sharp drops in regulated wholesale prices of recent years will help develop market prices for FTTP at levels that can encourage migration and enable network builders to earn fair rates of return.

    c. Long-term price stability across anchor services is also clearly preferable for consumers compared to any attempt to track unit costs on a period-by-period basis given the high unit costs of supply that will be faced in supplying customers as migration to FTTP increases.

    d. Support for our migration plans will enable us to minimise periods of parallel running and realise operational cost savings at an earlier point while ensuring consumers are protected. We comment on the detail required here in Section 4.

    e. Setting an FTTP anchor price at a modest premium, and not directly regulating prices at higher bandwidths will provide scope to realise the increased value offered by the FTTP platform and maintain scope to earn a fair return on our investments. The level of this premium should be set to reflect the increased value to CPs and end-customers being provided over the new platform at both the wholesale and retail level, and the cost savings to CPs through the increased reliability of full-fibre networks. We believe a level of more than £2 is justified.

67. In broadly supporting Ofcom's approach to the issues above, we are assuming that this regulatory approach endures beyond the five years of this FTMR and across the longer-term period where we would expect to

continue FTTP deployment and to be migrating customers. Ofcom should ensure it signals that the model it is putting in place is designed to provide long-term certainty around regulation to support all investors and that price regulation would not be extended beyond the proposed set of copper-based and fibre anchor services until Ofcom is confident that the fair bet has played out – i.e. investors have had the opportunity to earn a return on investments reflective of the risks faced at the point they decided to invest.

68. In this regard, we welcome Ofcom's continued support for the fair bet principle, but urge Ofcom to go further in specifying how this will drive any *future* consideration of whether, when and how price regulation on FTTP services beyond the proposed anchor service could be applied – e.g. the risk factors it will take into account and some indication of the level of upside Ofcom considers appropriate to allow. Ofcom should also be clear that the scale of investment in FTTP makes the build case more risky than that previously faced when investing in FTTC. Investors require assurances that the upside rewards they consider are necessary to support the risky investment decisions they are being asked to support at this point will not be 'regulated away' in future decisions.

69. We also broadly welcome Ofcom's proposed approach to regulating QoS from 2021. Detailed comments on the issues this raises and a proposed way forward are set out in Section 5.

70. However, we do have significant concerns about Ofcom's specific proposals to place constraints on our pricing activity across ultrafast and wholesale leased line services in the form of a geographic pricing restriction and the limits on our commercial flexibility in meeting customer needs that could arise from the imposition of SMP remedies relating to EOI and undue discrimination. As set out in Section 2, we do not think it is valid to imply that Openreach has SMP in relation to the supply of these services across the 'potentially competitive' area as defined in the Geographic Markets Consultation given:

    a. The existing and planned scope and capability of Virgin Media's network to offer ultrafast and business connectivity services (which acts as an indirect constraint via Virgin Media's retail offerings and as a direct constraint given scope for Virgin Media to offer wholesale solutions).

    b. The expected growth in the capabilities on new full fibre network providers in the period out to 2026 as detailed in Section 1.

    c. The scale of existing network infrastructure capable of providing wholesale leased lines to large businesses and to support the building of fixed and mobile networks, particularly in the CLA and other metropolitan areas of High Network Reach.

    d. The expectation that uDPA will reduce the costs of serving business premises and increase the 'dig distance' for which it would be economic for a network provide to serve particular premises.

    e. Countervailing buying power which is already evident to us in discussions with CPs around prices to encourage their adoption of FTTP.

71. However, even if it were found that we held SMP in relation to ultrafast services and/or wholesale leased lines services in all or part of the area currently defined as 'potentially competitive', we do not believe it would be appropriate to impose a prohibition on geographic pricing for these services.

72. Ofcom introduced a form of geographic pricing prohibition on FTTC and G.fast services in the 2018 WLA market review by stating that geographic price differentiation would be considered to be 'undue discrimination'. However, Ofcom was clear in introducing the relevant condition that its specific concern was that Openreach

could *target* discounts on the pricing of existing superfast services or on G.fast services that could be deployed at relatively fast pace (i.e. quicker than FTTP deployments) in geographic areas where new FTTP builders were deploying network or planned to deploy network. Ofcom was then clear that its concerns did not extend to geographic price discounting that was not clearly targeted at the new network builders. This would include geographic discounting across wider areas and discounting that might be targeted at Virgin Media's network footprint. Ofcom therefore established a consent process where geographic discounting that was not clearly targeted at new builders could be allowed.

73. While we remained unconvinced by the necessity for the restriction given competition law requirements, we did not challenge its imposition given the consent process and an understanding that it would be a short-term measure aimed at providing some comfort to new builders at the early stages of investment.

74. Ofcom does not set out any significant detail on how the proposal to extend the prohibition on geographic price discounting would be implemented, but does signal that the nature of its concerns are the same as those set out in the 2018 WLA – i.e. that targeted discounting could be used to undermine the business cases of new entrants. At a minimum, therefore, it should follow that:

    a. Any geographic discounting that was not targeted at new network builders should not be prohibited, including discounting aimed at Virgin Media areas and discounting of wholesale leased lines at areas with established competitors; and

    b. Any geographic discounting that was cost-justified and applied across areas with similar cost base should be allowed.

75. But even a more tightly-defined restriction on our pricing flexibility would not be justified. As noted in Section 1, our wholesale customers are looking to work with different suppliers as they deploy ultrafast capabilities and will be looking for suppliers to offer flexible solutions. It would be economically inefficient to constrain the way in which Openreach might choose to respond to these requests and develop propositions to meet customer needs. It is vital that we are able to retain the ability to fairly meet competition.

76. We would invite Ofcom to be clearer about the specific nature of its concerns with the sort of pricing strategies Openreach might adopt. We would be happy, for instance, to consider ways in which we might be able to supply transparency around our pricing decisions to allow Ofcom to be satisfied that any price discounts that might be introduced would not be unduly distortive of competition.

77. [✂]

78. It is also important for Ofcom to consider how it might apply the concept of Equivalence of Inputs (EOI) and Equal Treatment in the context of Openreach responding to the different needs of different wholesale customers in the provision of ultrafast and leased lines services. These provisions should not limit our ability to compete against rivals nor restrict the way in which we look to structure our pricing and our portfolio to support the individual requirements of CPs pursuing varying retail strategies.

Remedies proposed in the 'non-competitive' area

79. Ofcom has two proposed remedies in the proposed 'non-competitive' area: to develop a RAB-model and to require Openreach to make dark fibre access available on regulated cost-based terms. Ofcom's proposals on dark fibre are addressed in Section 6.

80. While there are various ways a RAB-type model could be developed - and Ofcom sets out options in the Remedies Consultation - the broad principle, as we understand it, is that Ofcom would for a given level of FTTP build:

    a. attempt to capture the full long-term costs of operating the existing copper/FTTC network and overbuilding and migrating customers to the FTTP network in the defined non-competitive area; and

    b. provide scope within the regulatory framework for prices across copper, FTTC and FTTP services to be set at levels that would support full cost recovery over time.

81. We are not convinced such an approach would actually work to support investment in line with Ofcom's policy objective of delivering a more equal deployment of FTTP into the more expensive final third.

82. RAB models have been used in the provision of utilities where there is little or no scope for competition to emerge and/or for customers to use alternative forms of supply. For instance, a RAB model may be used to set the prices for a company supplying water to a million customers in a given area. The model may be developed to include the ongoing efficient costs of supply to the million customers plus new investment costs to build a new desalination plant and replacement sewer systems in part of the area. The total costs of the investment – including a return – would be spread over an appropriate number of years, reflecting asset lives, and prices would be allowed to increase for all of the million customers during that period to cover these costs. The water company would be relatively confident about the level of demand from its customers and therefore that the revenue that they will earn in that period would represent a fair return on the investments they had made. On that basis, the design of the RAB model would support the desired investment.

83. But a RAB model is much more challenging to construct where there is scope for competitive entry and technological change as both these factors will impact the predictability of future demand for the regulated services (in this case, various forms of network access). While Ofcom may consider that a defined area is 'non-competitive', there are no restrictions on the ability of other network builders to invest in any part of that area over the long run and Ofcom's assessment does not give weight to the future threat of line loss to wireless solutions. A RAB model may be ***designed*** to set prices of copper, FTTC and/or FTTP at levels that will recover investment costs over an appropriate time period, but demand uncertainty creates the risk that such costs are not recovered.

84. It may be theoretically possible to build these volume risks and uncertainties into the design of any RAB model by being cautious in volume forecasts and allowing higher price levels on a forward-looking basis or by signalling an intent to have 'correction mechanisms' in adjusting prices to higher levels in the future if predicted volumes are lower than anticipated. However, the complexity of this exercise should not be understated and it cannot be assumed that all risks can be managed within a RAB-model. If forecasts of demand used to set initial prices are overcalled, then 'correcting' this via higher future regulatory price ceilings may be futile in the face of increased competitive threats.

85. These concerns with the complexity of designing a sufficiently robust model would be compounded if any RAB-model was configured to set prices that delivered returns consistent with a low risk, utility-like investment case. Furthermore, it would not incentivise parallel build if investors did not expect to make as good a return in the final third as they expect to make on any build in any 'potentially competitive' areas. If that wasn't the case, build would be prioritised in the 'potentially competitive' areas and the final third would be 'left behind' or 'left until the end'.

86. We also note that while Ofcom would look to support investment by allowing higher prices across copper, FTTC and FTTP services, it is also proposing to initially reduce copper prices in the 'non-competitive' areas in 2021 by removing the effect of the 'HON adjustment'. Ofcom implies that prices would then only increase as investment is made across the final third. This would have the effect of chilling investment by any potential network builders by reducing the price levels that could be applied to higher capability FTTP connections and presenting a real risk that defining the final third as 'non-competitive' becomes self-fulfilling. This also raises concerns that the bulk of cost recovery for any final third investment case would have to fall on future FTTP prices in the 'non-competitive' area or on the last rump of customers to leave the copper network. We would expect to see significant consumer and political resistance to such an approach which would imply significant geographic price differentials between the final third and other areas over the long-term.

87. However, while we have concerns with the proposed RAB-model approach, we share Ofcom's objective of wanting to see investment across the whole of the UK. Openreach has been, and remains, an active bidder for public funding to build FTTP across areas with high build costs (e.g. BDUK and R100 tenders) and we are looking to get experience of building across a range of different areas to gain a better understanding of operational challenges and how build costs may vary.

88. The fundamentals of an investment case to build FTTP in the final third are the same as those considered in 'potentially competitive' areas – i.e. they will be driven by an assessment of whether there is an opportunity to earn a reasonable rate of return given expected build costs and long-term demand/willingness to pay. Decisions on the prioritisation of build across different areas will be shaped by operational factors (e.g. the geographic spread of resource), overall financial constraints on build and the relative attractiveness of the investment case in different areas allowing for supply and demand factors.

89. We are concerned that Ofcom's proposed approach is based on a very early and therefore limited assessment of the scope for Openreach or any other network builder to construct a viable investment case in the final third. Ofcom's position appears to be framed by a belief that there is likely to be a sharp upturn in build costs in the final third of the UK relative to the costs in the remaining areas where there is the potential for competitive build. Experience of building across different areas is currently limited but we believe the gradient of the cost curve could be flatter than Ofcom believes, at least until, we estimate, the final 10% of premises are passed.

90. Further trials to gain a better understanding of build costs within the final third are required and we intend to complete this by the end of 2019. If, as we believe, the cost curve is flatter then it could be economically viable to deploy FTTP in the final third if the pro-investment remedies Ofcom is proposing in other geographic areas – i.e. real terms flat prices for existing anchors and the premium of above £2 on a new FTTP anchor – were in place and sufficient public subsidy was available to cover the highest cost build areas (we estimate, this would cover the final 10%). If such a build is economic for Openreach, then we believe it could also be viable for other network investors too.

91. As such, we believe Ofcom should identify all geographic areas as potentially competitive, or at least contestable, in 2021 and apply the proposed remedies across the UK. [✂]

92. This approach offers a number of important advantages, in particular it would ensure:

    a. FTTP deployment progresses at pace across all geographic areas with no specific areas 'left behind' or 'left to the end';

b. There is scope for competitive build in all areas as it avoids the potential chilling effect of the RAB model reducing anchor prices in the short to mid-term and the cliff edge effect of different prices applying in different postcode sectors; and

c. Prices of anchor services would be at the same level across all geographies and stable over time as networks were deployed.

93. We believe this approach is simpler, maximises the scope for commercial infrastructure deployment by Openreach and others at a relatively early stage in the investment cycle, and would yield even deployment of FTTP infrastructure across the country. It would also avoid price differentials or volatility in anchor prices and hold open the prospect of greater pricing homogeneity across the UK for longer.

4. Copper switchover

Retirement of the copper network - introduction

94. We welcome Ofcom's statement that regulation must support a smooth transition from copper-based to fibre services. We broadly support Ofcom's proposals to shift the focus of regulation away from copper-based services to FTTP services on an exchange-by-exchange basis as FTTP is deployed. However, there are two important points of detail in the current proposals which we think need to be addressed. First, we are concerned about the practicality of Ofcom's suggestion that 100% exchange coverage is required in order to trigger the shift of regulatory focus. It is highly unlikely we will reach 100% of most exchanges with FTTP given the challenges of network build although we do intend to ensure an ultrafast service is available to 100% of exchanges eventually (for example, through G.fast or vectored superfast). Second, it is important that we are able to implement 'stop-sell' (that is, stopping adding new supply to the copper network) well in advance of the likely achievable end point. We have proposed 75% exchange coverage as a sensible trigger point for stop-sell for those premises where ultrafast services are available. We are currently consulting with our wholesale customers on a proposed set of policies that would be applied to support smooth migration and will continue to engage with Ofcom and all other stakeholders to develop workable and practical proposals that serve the needs of end-customers.

Consulting industry

95. Openreach agrees with Government and Ofcom that the move to full-fibre networks should be industry-led and we have been actively consulting with our CP customers to ensure there is an agreed approach to this complex transition. Unlike other full-fibre network builders, Openreach is currently regulated in respect of the range of wholesale copper-based products it supplies to industry and we want to ensure that the transition to a new regulatory regime is successfully managed to minimise duplication but also ensure customers continue to be protected.

96. In 2017 Openreach consulted with CPs on the right future vision for UK digital infrastructure. Almost universally CPs supported the vision of an FTTP future. In this consultation Openreach highlighted the importance of moving all customers onto the FTTP platform quickly where it is available and switching off the legacy copper-based network. This would maximise the scope for cost saving and ensure that all customers benefit from the new platform. CPs were supportive of the concept of rapid migration but pointed out some of the operational complexity likely to be involved.

97. In light of CPs' responses to the consultation, in February 2018 Openreach announced an acceleration of its FTTP build, to reach 3m premises by the end of 2020/21, with an ambition to get to 10m by the mid-2020s and the majority of the UK thereafter, if the right conditions are in place for further investment. On 9 May 2019, Openreach announced a further acceleration of FTTP build: we now propose to deliver 4 million FTTP premises passed by March 2021, with an ambition to pass 15 million FTTP premises by the mid-2020's if the conditions are right. Agreeing how to migrate customers quickly onto FTTP once it is built is one of the key conditions required to support sustained investment.

98. Separately, in May 2018 Openreach consulted with CPs on the withdrawal of Wholesale Line Rental (WLR): a copper-based service that relies on the Public Switched Telephone Network (PSTN). Openreach will stop selling WLR, ISDN and other services that rely on the PSTN nationally from September 2023 and will withdraw those services altogether in December 2025 when the PSTN reaches end of life.

99. Openreach is actively engaged with industry to progress WLR withdrawal and through this process the industry will address a number of issues that we will also face in moving from copper-based services to FTTP. These include security alarm monitoring, some healthcare alarms and various industrial uses. These 'Special Services' will need to be replaced with modern equivalents to ensure service continuity as customers move onto our new modern infrastructure and this issue is being addressed through the WLR withdrawal industry working groups.

100. On 21 March 2019, Openreach issued an industry consultation, 'An exchange-based approach to upgrading the UK's digital infrastructure with GEA-FTTP', which set out our proposed approach to the retirement of the copper network. This consultation closed on 17 May 2019 and we are currently reviewing CP responses; we plan to update industry on the themes emerging and next steps in mid-June 2019. Overall, the responses are broadly supportive of our approach but raise a number of detailed points which we will be addressing. We are grateful to CPs for the thorough nature of the responses received and the extent of their engagement with our consultation process to date.

101. We have also signalled that we will be issuing a further industry consultation, planned for mid-June 2019, covering proposals for trials of both FTTP Exchange Upgrade and WLR withdrawal, which will enable Openreach and CPs to test migration processes and better understand the issues that will need to be addressed. We are keen to work closely with Ofcom through this next phase.

Our proposed approach to copper retirement

102. The key elements of our proposed approach, as set out in our industry consultation, are as follows:

    a. To take an exchange-based approach, building contiguous footprint within exchange areas to provide ubiquitous ultrafast coverage.

    b. To work closely with CPs to migrate all customers within an Ultrafast Enabled exchange quickly onto the new platforms once the network is built.

    c. To offer a compelling but simple portfolio of services in ultrafast enabled exchanges that in turn allow voice and broadband services to be offered by CPs.

    d. For the large majority of migration to be voluntary, with an industry-developed process to deal with late adopters.

    e. To withdraw legacy services progressively, starting with a 'no move back' policy on premises already connected with FTTP, stopping selling copper-based services to new customers, and then ultimately withdrawing copper-based services.

    f. To work with industry and Ofcom to develop a 'consumer charter' that helps to ensure transparent communications with end-customers and protects vulnerable customers.

103. We believe the main benefits of an exchange-based approach include:

    a. Efficiency: deploying network in contiguous areas should enable build, connection and in-life cost efficiencies more quickly than would be possible under a more fragmented approach.

b. Ease of adoption for CPs: CPs have built backhaul and core networks that interconnect with Openreach at exchanges. Upgrading through an exchange-based approach should enable CPs to dimension backhaul and core networks in a more efficient and predictable fashion.

c. Consistency of local services: customers in a local area will get access to the ultrafast capability at the same time.

d. A viable basis for re-focussing regulation: we agree with Ofcom that regulation can transition on an exchange-by-exchange basis when specific triggers and requirements are met.

104. Within an exchange area we aim to build FTTP to the large majority of premises. However, there will be cases where FTTP is not the right solution. Examples include:

a. Premises where the access required to make FTTP available is not granted. For example, a block of flats where the landlord refuses permission for internal cabling work to be performed (although we and other players continue to press for legislation to make access easier).

b. Premises where the build cost for FTTP is prohibitively expensive or too disruptive. For example, an historic building or a housing estate where no duct is available and local residents oppose the use of telegraph poles.

105. In these cases, using a fast copper technology such as G.fast may be preferable to FTTP as an ultrafast solution in the medium-term at least. We would define the Openreach full fibre platform as including any fast copper or FTTx technologies that are developed and give customers ultrafast speeds. Ofcom should also consider what ultrafast technology is available from competing providers and platforms in determining whether the thresholds for the withdrawal of regulation have been reached. If there is – for example – cable and FWA available to premises, there may not be the need for Openreach to deploy there as well before Ofcom determines that ultrafast coverage is sufficiently high to allow for a change in the regulatory framework (see below).

106. In Ultrafast Enabled exchanges we plan to retire copper-based services. We want the large majority of customers to migrate voluntarily to new platforms, but we also want to allow industry to withdraw legacy technology within a reasonable timeframe. We propose to achieve this in two steps: firstly, by stopping selling 'legacy' services for new supply; and secondly – after a suitable period to allow voluntary migration and the management of any 'orphaned' end customers – by withdrawing legacy services altogether.

107. Our aim is for the large majority of migration to be voluntary, with customers proactively choosing to move across to the new platforms by requesting a service upgrade. To achieve this, we plan to offer a compelling portfolio in Ultrafast Enabled exchanges that would enable CPs in turn to make compelling offers to end customers. Our intent is to offer CPs services that are at least as good as those that we offer today, and significantly better for the large majority of customers who use broadband. We also recognise that the portfolio we offer at a wholesale level needs to enable the industry to protect vulnerable customers.

108. In Ultrafast Enabled exchanges we propose to make three types of service available:

a. A voice-only data service capped at a bandwidth suitable for supporting voice and designed to enable CPs to offer Voice Over IP (VOIP) services in place of traditional telephony. As part of our WLR withdrawal plans we are talking to industry about having a low bandwidth fibre product available at voice economics.

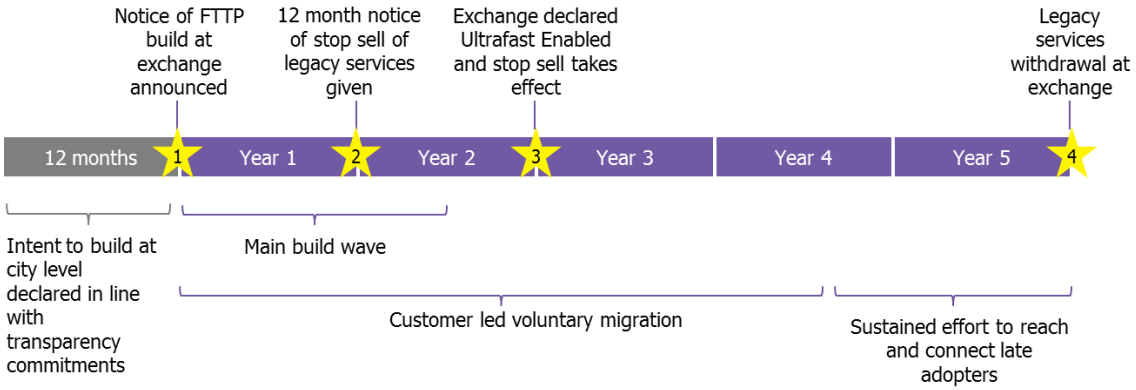
b. An anchor broadband service. We plan to make an anchor 40/10Mbps service available on FTTP and SOGEA/SOGFAST platforms at a regulated price. We welcome and support Ofcom's view that it would be reasonable for the anchor on full fibre services to be set at a small premium to reflect the greater value of FTTP. We believe this is essential to support investment by Openreach and others. A premium is justified by (i) the higher quality, more reliable, and future-proof services for all broadband end users (ii) cost savings enabled in the CP domain from a lower faulting network and radically simplified service management environment.

c. Ultrafast broadband services: Above the anchor we would expect to make a range of ultrafast services available to CPs enabling customers to make full use of the ultrafast platform. The nature and pricing for services above the 40/10 anchor product would be set through commercial negotiations between Openreach and its customers.

Phasing

109. CPs and customers will need sufficient time to prepare for the retirement of legacy copper services and the transition to new platforms. This needs to be balanced with the benefits of moving customers quickly onto what will be a fundamentally better platform. Our proposed phasing approach is shown in Figure 3 below.

Figure 3: our proposed phasing



110. The key milestones are:

- Milestone 1: Once we are ready to start build in an exchange, we propose to notify CPs formally that FTTP build will happen, and that we expect to declare the exchange Ultrafast Enabled in 24 months' time. We will commence build, releasing premises for sale as we progress.

- Milestone 2: One year after our formal notification of build and once the main build effort is well advanced, we propose to serve a further 12 months' notice that we will declare the exchange Ultrafast Enabled and stop selling legacy services for those premises where ultrafast services are available. From this point onwards, we would expect mass migration to the new platforms to be possible.

- Milestone 3: At the end of this 12-month period we would formally declare an exchange Ultrafast Enabled and implement a stop-sell policy on the legacy products. Crucially, we only propose to implement stop-sell where a premises has an ultrafast alternative available. If we have been unable to make ultrafast services available, then CPs will still be able to order legacy services at this point.

- Milestone 4: We then propose that there are 3 years of further migration until legacy services are completely withdrawn.

111. Once milestone 2 is reached and the main wave of FTTP build is well advanced we propose to change certain Openreach commercial policies to improve the overall efficiency of the industry and minimise capital spend on copper-based services. Specifically, where FTTP is available we propose to:

    a. Introduce a 'no move back' policy on end-customers once they move from copper-based services onto the FTTP platform. This is equivalent to implementing a stop-sell on customers that already have FTTP. We believe it is important to implement this business policy at this stage rather than, as Ofcom suggests, at the commencement of stop-sell (a year later) .

    b. Stop further FTTC capacity investment, meaning that if capacity is exhausted customers wanting a new or upgraded superfast service will need to move to the FTTP platform.

    c. Offer FTTP as an alternative to any 'expensive' repair activity on legacy platforms. Expensive repair could include repair requiring time consuming engineering work where moving to FTTP may provide the end-customer with the preferred outcome.

112. Milestone 3 at which an exchange is declared Ultrafast Enabled and stop-sell takes effect at premises where ultrafast is available is a key point in the process. Whilst Ofcom's proposals regarding a transition process and timing are generally reasonable and consistent with our proposed approach, the suggestion that the trigger for commencing the transition of regulation should be at the point where we have deployed our fibre network to provide 100% coverage is impractical. It is highly unlikely we will reach 100% of most exchanges with FTTP given the challenges of network build, for example, where there are access issues serving Multiple Dwelling Units (MDUs) and obtaining wayleaves, although we do intend to ensure an ultrafast service is available to 100% of exchanges eventually (for example, through G.fast or vectored superfast). A 100% trigger requirement would in effect mean that the transition from legacy regulation could never begin.

113. It is important that we are able to start to implement stop-sell well in advance of the likely achievable coverage end point. This is so that the transition to ultrafast capable networks and FTTP in particular can happen as quickly as possible, maximising the benefits, and minimising the period of dual-running. In our industry consultation, we proposed as a pragmatic way forward that an exchange be declared Ultrafast Enabled and stop-sell take effect at premises where ultrafast is available once 75% of premises in that exchange are able to receive an ultrafast service. Having reached this 75% threshold our intention is to continue building ultrafast to reach as many of the remaining 25% of premises as possible.

114. We do not expect Ofcom to remove all regulation on legacy services in an exchange once ultrafast coverage reaches 75%. However, we think that reaching the 75% threshold could represent the start of a period of 'dual running' where regulation applies to both fibre- and copper-based services. This would be consistent with Ofcom's proposal that there is a period in which both copper and fibre-based services are regulated[9].

115. Once a further 'end-state' threshold is reached – above 75%, but lower than 100%, which is not practical – Ofcom could lift regulation on copper-based services, or signal that it will do so after a further period of dual running. Ofcom proposes a minimum of 2 years in its consultation. We would ask Ofcom to consider a shorter

[9] Although at this point stop-sell of copper-based products would apply at premises where ultrafast services are available.

period than this to reflect the earlier focus of regulation on the fibre platform implied by the approach outlined here.

116. In setting the end-state threshold we believe Ofcom should consider the availability of ultrafast networks from competing providers. If – for example – cable and fixed wireless are available at a set of premises, and Openreach has been denied access to deploy FTTP, then it seems unreasonable and unnecessary to retain regulation on copper-based services.

117. Determining the end-state threshold will be important. As our own exchange-based build progresses in 2019 we propose to share information with Ofcom and industry on the proportion of premises we have been able to reach with ultrafast and FTTP in particular, and the reasons we have been unable to reach the remaining premises. We believe this will help Ofcom to set an appropriate threshold.

118. Although customers could move to the platform at any point once it is made ready for service, the proposed phasing outlined above allows for 4 years of migration once the main wave of build is complete, which we believe is reasonable and consistent with Ofcom's current thinking. Clearly though, we will want to work with industry in refining our thinking on the transition process.

Consumer protection

119. We share Ofcom's view on the importance of consumer protection, including for vulnerable customers, voice-only and basic broadband customers and those who rely on 'special services' such as alarm. In our industry consultation, we outlined some principles which we believe will help to deliver a smooth transition whilst affording consumer protection. In particular:

    a. That the large majority of migration should be voluntary.

    b. That voice only products should be available and priced at a wholesale level so as to make retail price stability easy to achieve.

    c. That the timeline for moving to ultrafast products should align with that already announced for WLR withdrawal, allowing a number of common issues to be resolved.

    d. That there should be an industry agreed process to manage orphaned end customers.

120. Communication ahead of and during the migration phase will be critical so customers understand what is happening and are aware of their choices. This will be particularly important as the migration phase progresses and harder to reach customer groups remain on the legacy platform. Effective communication will require close cooperation between Openreach and CPs as collectively we work to transition all customers across to the new platform safely.

121. Some customer groups will clearly need particular care and attention, especially those who are reliant on our network for basic voice telephony or special services, but who are less technically aware. We therefore think that there is an important role for Ofcom and Government (local and central) both in helping to raise awareness with hard to reach customer groups, and in working with industry to ensure alignment and consistency. We welcome the focus given to these issues through Ofcom's new "All-IP" governance structure.

122. To take this forward, we would propose to work with CPs and Ofcom to develop a 'consumer charter' embodying principles of ensuring sufficient transparency to consumers and ensuring that those with specific needs are supported.

123. We expect the large majority of migration to be on a voluntary basis, with end-customers electing to move to offers supported on the new platform. However, we believe it is important to recognise that there will be difficult cases and to plan for these from the outset. These are likely to include vulnerable customers, including vulnerable voice-only customers, for whom the immediate benefits of FTTP will be limited. We need an industry-agreed set of processes to give confidence that these difficult migration cases are tackled in a fair and reasonable way. We propose to work with Ofcom and industry to develop these.

124. As the migration progresses, we anticipate that the industry will need to intensify its communication efforts to end-customers to ensure that no one is left behind. CPs will have a key role to play in communicating with their customers. However, at some point there may be value in an industry-wide communication effort about the need to migrate. The role played by Digital UK in communicating the need to switch to digital television provides an interesting example of how another industry has approach this challenge using an industry body to communicate with end-customers.

Ofcom's approach to transitioning regulation

125. As indicated above, we generally support Ofcom's approach to transitioning regulation from being focused on the wholesale access copper network to those provided on Openreach's fibre network. However, as outlined above, the proposed trigger of 100% fibre coverage before this transition can commence is impractical. We have proposed 75% as a sensible trigger point for stop-sell.

126. We also support Ofcom's approach to modifying existing copper access obligations prior to switching regulation to fibre. We agree with the proposal to modify the general access obligation so that it does not apply to the development of new access services where they would be based on legacy copper assets. We also welcome the flexibility for QoS regulation to be modified to allow Openreach to replace the copper connection with a fibre connection to avoid a costly repair.

5. Quality of Service

Introduction

127. Service is at the heart of Openreach's strategy and we welcome its inclusion as a key part of the FTMR. We believe that Openreach is now providing CPs and end-customers with the consistently high levels of service that they need[10] and that in many areas, it is Openreach that is driving innovation, for example in relation to broadband repair, missed appointments and Ethernet provision[11].

128. Industry is facing significant change over the period of the FTMR, and this will impact products and technology together with underlying provision and repair processes in ways that will be positive for end-customers[12]. In this context, it is important that service regulation is sufficiently flexible to accommodate the change that will occur and that it does not impede innovation. In practice this means allowing room for service standards to be set not just via traditional regulatory processes, but also via direct interaction between Openreach and its customers. It also means that when Ofcom does impose Quality of Service (QoS) Standards (Ofcom's new terminology for MSLs), they are specified in a way that accounts for the underlying changes that are likely to occur[13].

129. Openreach supports Ofcom's stated intent not to continue increasing the levels of the QoS Standards imposed. That said, given the extent of change that will occur during the period covered by the FTMR, it is also very probable that it will not be appropriate to simply maintain the existing QoS Standards and their associated levels in all cases. Ofcom should examine all of the service regulation currently imposed to ensure that it remains relevant, proportionate and supports our shared objective of providing the best service outcomes for end-customers.

130. It is also important to recognise that there will be an inherent trade-off (price versus quality) to be made when setting service levels in relation to resource and investment, where it is unlikely that CPs and end customers would be willing to pay more. Given these trade-offs, the anticipated industry change and the move to a single market review process, we would like to work with Ofcom and industry to explore an approach to setting service measures that allows enough flexibility for positive change to be optimised while keeping the end-customer experience as a key focus.

131. We consider that it is now appropriate to consider a *range of different approaches* to service regulation. We are open to the exploration of these options to ensure Ofcom's objectives of ensuring good service outcomes are delivered and to support Openreach and industry in making sure those service outcomes evolve to keep pace with customer need. This might mean there is a spectrum of service regulation where the industry is not solely reliant on Ofcom to set the outcomes, which may range from having backstop levels in some areas, to other areas where Openreach directly agrees service levels with its customers through a process of industry agreement. We consider that this may be more appropriate than applying a "one size fits all" approach. We now envisage a future where there is a mix of different measures set by different processes (with some being

[10] https://www.ofcom.org.uk/__data/assets/pdf_file/0018/142533/consultation-promoting-competition-investment-approach-remedies.pdf, paragraphs 4.6 and 4.7.
[11] For example via Garden of Eden, missed appointments and Re-imagining Ethernet Provision.
[12] For example, through the delivery of higher speed broadband supported by improved repair processes.
[13] In this response we make reference to two parts of the QoS Standards: (1) the QoS Standard itself i.e. its scope, and the particular repair or provision process that it seeks to address; and (2) the QoS Standard level i.e. the numerical target that is attached to the QoS Standard against which compliance is measured.

regulatory led), which will enable flexibility and innovation. We believe this will lead to better service outcomes for industry and end-customers.

132. There are several aspects of Ofcom's proposals that we support:

a. We agree that there is **not a need for the levels of the existing QoS Standards to increase** beyond those currently in place (i.e. no change from the QoS Standard reached in 2021), and that **service performance across all markets is now at good levels**.

b. We would like to further explore the concept of **replacing specific regulation with alternative commitments** and are open to starting discussions with our customers[14]. Ofcom should ensure that there is sufficient flexibility within the framework to allow this to play out.

c. We agree that **QoS Standards should not be applied to FTTP prematurely and that incentives in the market to deliver good service already exist.** Adopting a process whereby Openreach agree service levels with its customers is more appropriate at this stage, although we accept Ofcom may wish to retain the option to set QoS Standards if agreement cannot be reached as a back-stop.

d. It is right **not to apply QoS Standards to PIA** in the first instance. There should be a sufficient period of time to allow proper consideration as to whether further service regulation is necessary.

e. We are broadly supportive of the requirements to provide **Key Performance Indicators (KPIs)** to Ofcom, although we consider that there is an opportunity to simplify the obligations imposed.

f. We generally support the requirement to include **Service Level Agreement (SLA) and Service Level Guarantee (SLG) commitments** within our reference offers to our customers. We also consider some SLG arrangements need to be reviewed promptly as they go beyond a reasonable pre-estimate of loss.

133. However, there are a number of areas where we have concerns with Ofcom's proposed approach:

a. While we support Ofcom's intent not to increase QoS Standard levels, **the proposals for flat QoS Standard levels across the market review period do not take account of the significant changes to the market that will occur**, including the introduction of uDPA, which may make the current levels proposed for the Ethernet QoS Standards unachievable in future. For example, uDPA may be attractive for the easier to do circuits, leaving Openreach to deliver the more difficult ones that require, for example, more new network build, significant streetworks or wayleave negotiation.

b. As such, *ex ante* regulation that is imposed for five years could become obsolete and restrictive. As such we believe Ofcom should set a review point within the next market review period which would review whether the existing service regulation remains fit for purpose[15].

[14] We note that in other sectors such as aviation, water and energy, regulators have moved to an approach in which outcomes and quality standards are determined by means of the regulated firm's engagement with customers. In these areas regulators have tended to focus more on the process of engagement, than on the setting of the standards themselves (beyond safeguard levels). Charge controls then contain different incentives for meeting the safeguards (big downside) and delivering excellence and service innovation (significant upside).

[15] This would be similar to the approach that Ofcom has adopted to review BT's Commitments to Ofcom after 3 years.

c. It will not be appropriate in all cases to simply roll forward and re-impose the same QoS Standards that are in place today. Doing this could have an adverse impact on our ability to introduce innovative and improved ways of working with our customers if we are tied to specific processes based on legacy practice. **We think a more flexible approach to setting QoS standards** is required whereby Ofcom promote better ways of working between Openreach and CPs.

d. Whilst we are supportive of the principle of any QoS Standard imposed being set on a national basis, **we do not think that standards should apply on a regional basis.** Instead, the provision of detailed KPIs should be sufficient to meet Ofcom's policy objectives.

e. We disagree with the idea that **there should be different QoS Standards for dark fibre.** In the event that Ofcom impose QoS Standards for dark fibre, they should be aggregated with active services.

134. Openreach is pleased that Ofcom consider QoS to be a regulatory priority in the FTMR. Given Openreach is now consistently delivering high standards of service (as recognised by customers), and is providing leadership in this area[16], we consider that we are well placed, in collaboration with our customers, to increasingly influence the specification of future service regulation. Now is the right time to start developing new approaches in this space.

135. As noted above, there are a number of different options that we would like to explore in more detail with Ofcom and industry, as an alternative / complement to what is in place today. For example, QoS Standard levels could be set as safeguard measures to prevent performance falling below a particular threshold or 'backstop' level. These levels would not be stretch targets and could provide the flexibility needed to invest in new ways of working during a period of technological change, whilst continuing to protect end-customers.

136. We are also open to exploring how a set of alternative commitments[17] could promote better inter-working between Openreach and its customers and how this would lead to improved service outcomes for end-customers. In addition, there may be a role for self-regulation of service in particular areas, with measures being set and agreed with industry – an approach more akin with service regulation in other utilities[18].

Openreach's vision for future Quality of Service

137. Our service vision includes moving away from a process where targets are set exclusively by Ofcom, towards a more flexible approach that includes a role for both regulated targets and industry-agreed measures.

138. We recognise that it is challenging for Ofcom to set service metrics on an *ex ante* basis, particularly when it is simultaneously seeking to promote competition and investment in new technologies, and when there is an extended (5 year) time horizon involved. We believe that Openreach and its customers are better placed than the regulator to determine what the right service ambitions should be, bearing in mind underlying market change

[16] For example, in relation to the missed appointment, Re-imagining Ethernet Provision and Broadband Repair programmes, amongst others.
[17] We have interpreted this to mean service commitments offered by Openreach to be made legally binding by the procedure set out in the European Electronic Communications Code (EECC) (Article 79) whereby Ofcom would consult with industry as to the offer set out by Openreach.
[18] Openreach also provided detailed information in relation to alternative approaches to service regulation in its response to the BCMR consultation, dated 18 January 2019, paragraphs 294-312.

and the importance of understanding the needs and willingness to pay of end customers. Given this, Ofcom should consider whether prescriptive QoS Standards are appropriate across all areas of service, or whether some standards could be replaced with safeguard levels. As noted above, Openreach is also willing to engage in discussions around an alternative (industry led) process for defining service requirements that would complement standards imposed by Ofcom. We consider that such a 'mixed economy' model would be best placed to deal with evolving customer needs in a changing market.

139. Ofcom has already been successful in developing specific forms of QoS regulation that allow collaboration between Openreach and CP to deliver outcomes, and we consider that this approach could be expanded. For example, the lighter-touch regulatory intervention represented by the SLA/SLG negotiating framework in the WLA and BCMR markets has proved to be effective.

140. Creating a regime whereby Openreach and CPs are encouraged to work more effectively together *before* further regulatory intervention takes place has proved to be an effective regulatory structure and is more likely to result in improved service and consumer choice. We think that a similar approach could be explored more widely in terms of service regulation, for example, in which the framework is set by Ofcom but allows the detail to be agreed by Openreach and CPs, under independent facilitation as required.

141. Below we set out further comments on two innovation programmes Openreach is leading, and identify ways in which an evolution of the regulatory approach could best support these programmes, for the benefit of end-customers.

<u>Openreach's Broadband Repair Vision</u>

142. Openreach's Broadband Repair Vision seeks to modernise and enhance the end-to-end repair journey and has been developed in conjunction with our CP customers. The programme has three overriding work streams:

    a. Operational Evolution (aka 'Garden of Eden') – Delivering better end customer outcomes through cultural change, engineering training and system enablers;

    b. Redefining Broadband – Redefining a 'Working' service to better recognise the end customer broadband experience. To be used by CPs to raise jobs, and engineers to measure their success, against an uplift to the current tests; and

    c. Portfolio transformation – Simplifying the current portfolio to help CPs and engineers deliver more consistently for end customers with broadband issues.

143. In relation to the ambitions surrounding broadband repair, Openreach considers that this programme will deliver wide-ranging benefits for industry and end-customers and will support the UK in becoming a leader in fibre broadband. However, for this programme to deliver its full potential, the regulatory framework needs to be right.

144. For example, this programme will lead to a re-evaluation of what constitutes a broadband 'fault' and what the right Openreach and CP processes (including Openreach engineering practice) should be to ensure fault diagnosis and resolution are optimised, for the good of end customers. In short, this programme could lead to radical changes being made to the industry processes that support broadband repair.

145. In this context, the regulatory environment needs to support and enable the right change to happen as we move to an ultrafast world. Simply keeping the existing WLA repair QoS Standards and levels could impede the programme delivering full benefits. For example, if the scope of the existing QoS Standards were misaligned with the changes to repair processes that came out of the Broadband Repair programme, this could impede rather than support innovation by forcing Openreach to focus on meeting SMP obligations tied to obsolete metrics.

Re-imagining Ethernet Provision

146. Re-imagining Ethernet Provision ('REP') is an industry programme that Openreach has been leading on for the last c. 18 months. The programme aims to explore how improved ways of working between Openreach and CPs can unlock additional benefits in the provision value chain, thereby improving outcomes for end-customers.

147. This new provisioning process, which is still being developed and discussed with industry, will offer new and flexible solutions to CPs and end-customers and will improve the overall end-to-end delivery process. Our business customers aren't solely asking for quicker delivery speeds – they also want more certainty about *when* their order will be delivered together with enhanced service offerings. We believe REP will help deliver this.

148. In a similar vein to the development of the broadband repair processes, we believe that service regulation should support service evolution and not make it more burdensome to deliver better outcomes for our customers. Openreach needs to be able to adapt in order to meet customers' needs, given changes in technology and competition. Again, we would recommend that Ofcom ensure that any regulation set should be flexible enough to allow Openreach to deploy different ways of working, for the good of the market.

Comments on the proposed QoS standards

149. The comments in this section are made specifically in relation to Ofcom's proposals to maintain the QoS Standards at the levels that will be already in place (via the 2018 WLA and 2019 BCMR) at the end of March 2021.

150. Openreach is pleased that Ofcom recognise that service levels in both the WLA and BCMR markets are at good levels, and that there is no need to increase performance beyond recent delivery levels. Indeed, Openreach has previously raised concerns[19] about Ofcom increasing performance requirements year on year without sufficient recognition of what the upper bounds of achievability are, or whether they are required by the market.

151. We share Ofcom's objective of ensuring that consumers are provided with good levels of service throughout the upcoming period of market and technological change. We also support Ofcom's proposal not to increase QoS Standard levels beyond those currently imposed. We believe that it would not be justified or proportionate at this stage to further tighten QoS Standards, and that such a move would undermine the flexibility that Openreach requires in order to best meet customers' needs. It is important that the right balance is struck between what is operationally achievable and what the market is willing to pay for, and we believe that tightening service levels would *not* provide the right incentives for Openreach to build networks and support Ofcom's wider policy objectives.

[19] https://www.ofcom.org.uk/__data/assets/pdf_file/0024/136644/Openreach-Quality-of-service-response.pdf, paragraph 62.

152. That said, should Ofcom decide to either raise or maintain the QoS Standard obligations that exist today, there needs to be a proper and detailed consideration given as to what is achievable during the period of the new and extended market review (i.e. from 2021 to 2026) and whether this is justified.

153. Openreach has concerns that fixed QoS Standards that are in place for 5 years could have unintended consequences and / or could inhibit our ability to innovate. We therefore urge Ofcom to adopt a flexible approach to QoS regulation that allows for adaptation or evolution of the approach in line with market needs. This should include consideration of including a pre-defined review point that would be automatically triggered in circumstances where specified and objective criteria are met.

154. Openreach sets out below some further comments in relation to the business connectivity and WLA markets.

Business connectivity

155. Flat QoS Standard levels are not likely to be appropriate in the business connectivity market over a 5-year period. Good levels of performance are already being delivered in this area, and there is a lack of willingness from CPs to pay or invest more for higher levels of service. Keeping those levels the same for the active leased lines products will not work because such an approach would ignore the level of market disruption that will be caused by the introduction of Ofcom's uDPA and dark fibre remedies. This is not about watering down service regulation, but about ensuring that service regulation remains proportionate, given anticipated market changes.

156. The business connectivity market is characterised by (relatively) low order volumes combined with demand volatility. Demand is notoriously difficult to forecast and this is a recognised industry issue. Furthermore, Ethernet circuits can vary significantly in their delivery timescales, ranging from days to several months, depending on the level of infrastructure build required. As the Ethernet product provides a point-to-point unshared network access, circuits are to an extent bespoke and are built to order[20].

157. These characteristics mean that the market is sensitive to external factors and that a relatively small change to demand or order characteristics can have a large impact on service metrics[21].

158. Ofcom are introducing a remedy that will allow unrestricted access to Openreach's duct and pole infrastructure and it is not yet known what impact this will have on Ethernet order volumes. Ofcom have introduced uDPA as its primary remedy for promoting full fibre network competition. It is likely that, over the timescales of the FTMR, uDPA usage will lead to substitution of Openreach's active Ethernet portfolio. In fact, this is Ofcom's stated policy objective. If it is then the case that Ofcom expect patterns of CP and alternative network provider behaviour to change, Ofcom must also anticipate changes to the business connectivity market – as a result of more choice existing in the market. As part of our submissions in relation to the BCMR 2019[22], Openreach articulated the sensitivity of Ethernet performance to changes in volumes, and we believe that this clearly evidences the risk that the baseline performance on which the QoS Standards are set may not remain appropriate.

159. Similarly, Ofcom is proposing to introduce a dark fibre remedy in the areas of the UK which it considers to be non-competitive. If implemented, we would expect there to be a shift in the active Ethernet product market as

[20] Ethernet is not a pre-built national network.
[21] The service metrics tend to be based on averages of on percentages of completions.
[22] A Statistical Analysis of the feasibility of meeting the Upper Percentile MSL, Openreach, 12 December 2019.

a result of this, which could further impact order volumes and CP behaviour. See our overall comments in relation to Ofcom's proposals in Section 6 and our comments later in this section in relation to dark fibre service standards.

160. In addition to the volume of active order completions changing as a result of Ofcom's other remedies, it is also anticipated that the 'mix' of orders (in terms of delivery complexity) will shift. For example, in circumstances where uDPA substituted for mainly simpler to deliver Ethernet circuits[23], this would lead – all other things being equal – to the remaining leased line services against which QoS Standards were imposed becoming on average more difficult to deliver. In such circumstances, maintaining flat QoS Standard levels would not be appropriate, and could penalise Openreach even in circumstances where 'true' service performance remained good. Ofcom therefore needs to be prepared to set up the QoS Standards in such a way that is sensitive to these variables.

161. In summary, service standards based on today's market may no longer be appropriate in future.[24] It is important that any standards eventually set remain proportionate and applicable to the market as competition emerges.

Wholesale local access

162. Unlike the business connectivity market, the measures, metrics and standards in place in the WLA markets are more established, stable and understood by Ofcom, industry and Openreach alike. On the one hand, proposing flat QoS Standard levels (aligned with those standards that will be in place via the 2018 WLA at the end of March 2021) therefore seems like a sensible starting point, and we agree that measures should not rise any further.

163. However, we would also note that setting ex-ante levels over such a long period of time, when significant market change is anticipated, could inhibit innovation (for example in relation to delivering the broadband repair vision as discussed above), particularly in a market where the needs of end-customers are constantly evolving.

164. The QoS standards in the WLA market should not be increased. We agree with and support Ofcom's starting point in "..*not seeking further quality improvements in the levels we set*.[25]" Openreach has already provided extensive information to Ofcom[26] regarding the impact of tightening service standards on resource requirements and in terms of the marginal costs becoming significantly greater as the standard increases. That detailed analysis would need to be revisited in circumstances where Ofcom proposed to raise any of the levels currently in place.

165. Openreach will need industry support plus flexibility from Ofcom in order to develop and deliver the full benefits of our broadband repair vision. The current QoS Standard mechanism may need to be reviewed to recognise a future (and better) way of handling broadband faults. At this stage, it is not yet clear what impact this ambition will have on the current metrics, but there is a possibility that both the scope of the Standards and their levels will need to change in line with the evolution of the underlying repair processes. Mis-alignment of the QoS Standard and the new (improved) repair processes would stifle innovation by tying Openreach to an obsolete SMP obligation.

[23] This is a likely assumption given such circuits would likely be more profitable for uDPA-purchasing CPs to address.
[24] We would note that market dynamics for CPs has also changed in recent years. For example, there has been an increase in CP led commercial offers by fibre providers. This can also have impacts for service.
[25] https://www.ofcom.org.uk/__data/assets/pdf_file/0018/142533/consultation-promoting-competition-investment-approach-remedies.pdf paragraph 4.2.
[26] Via the WLA 2018 market review process.

Comments on QoS regulation approaches on specific products

166. Below we set out our views regarding Ofcom's comments in the Remedies consultation on the approach to service regulation on FTTP, PIA and dark fibre services.

QoS regulation for FTTP

167. We agree with Ofcom that it is currently too early to determine the relevant measures for the FTTP product, and we consider that the ultrafast market is sufficiently competitive to provide incentives for good service to be provided. As a relatively new product, FTTP needs an appropriate 'bedding-in' period and needs to be consumed at scale before the requirements of the market are assessed. FTTP has a very different customer experience process to other copper and fibre services, and Ofcom should leave sufficient scope for the market to grow and investment to proceed (in line with Ofcom's wider objectives) without being constrained by unnecessary service targets.

168. We disagree with the underlying assumption that the same QoS Standard measures and levels that exist today on other copper and fibre services should be applied to FTTP. FTTP is a very different product (at a different stage in its lifecycle) and it would not be appropriate simply to replicate service regulation which was designed for other products. Whilst recognising the important role service regulation can play, in this case we would like to explore different approaches to setting targets based more on collaboration between Openreach and its customers.

169. It is our expectation that market dynamics will shift over the next 7 years as a result of technological change coupled with Ofcom's proposed regulatory remedies. Ofcom's stated policy objectives are focussed on promoting competition through creating access to Openreach's network. As a result of this more competitive landscape micro-regulation on service is not likely to be needed and could be counterproductive, for example, by incentivising Openreach to focus on the wrong things at a time when the market is still maturing.

170. Whilst it remains our view that FTTP should not attract QoS Standards in the same form that exist today, we acknowledge and support Ofcom's objectives in ensuring good service outcomes for end-customers. Openreach would like to maintain the relationship that it has with its customers over FTTP service (where performance is at good and improving levels) and retain an inherently flexible approach to be able to deal with changing market dynamics.

QoS regulation for PIA

171. We agree with Ofcom's proposal to allow the PIA product to bed in before any unnecessary intervention takes place. Notwithstanding this, we are open to engaging with Ofcom and other stakeholders as required to consider whether there are any alternative approaches to ensuring continued good quality of service for PIA.

172. As Ofcom states, there have been a number of changes and improvements made to the PIA product, and it has been Ofcom's (and Openreach's) expectation that take-up of the new product would increase (noting that the launch of the new PIA product was only c. 2 months ago, and so we have not yet seen a step increase in demand).

173. In relation to service regulation, this impacts Openreach in a number of ways:

    a. While at present we are scaled to deal with a higher capacity of orders than we are receiving, if demand doesn't pick up, this would not be efficient or sustainable over the longer-term.

    b. The lack of forecast information from CPs makes the correct scaling even more challenging, and service timescales are more likely to be impacted if large volumes of 'lumpy' and unpredictable demand is received.

    c. Lower volumes mean that PIA performance will be subject to more statistical variation.

    d. We cannot determine what 'good' looks like without reaching a steady-state. It would not be appropriate to review what is perceived to be an acceptable activity timescale when demand is either low (where performance may be inflated), patchy (where Openreach is managing peaks and troughs of demand in quick succession) or where demand is overinflated following a period of minimal demand.

174. It is also not clear what an appropriate or proportionate measure should be, in particular given that the thinking behind PIA metrics is still to be fully developed. The PIA metrics are currently focussed on no undue discrimination, and there needs to be continued development and discussion with stakeholders to determine what this means. For example, there remains a possibility that the KPIs may lead to skewed perceptions of performance due to very low volumes. There is also the risk of the 'flip side' where CPs may receive different (but better) treatment than Openreach when conducting the same activities. Therefore, Openreach believes that it would be inappropriate to define QoS standards for PIA while the basic KPIs are yet to be agreed or tested at scale.

175. Furthermore, we are concerned at this time that CPs are failing to meet some of the basic elements of the reference offer (for example forecasting, whereabouts, and placing of 'Notice of Intent' orders) and this can result in unnecessary resource being utilised to clarify and resolve these issues.

176. It should not be Ofcom's default position to expect that intervention in the form of QoS regulation should be required without assessing the needs and dynamics of the market. Even in the event that it decides to go down this route, it is highly likely that Ofcom will have difficulty in determining the appropriate and proportionate metric and performance level, and given this we would urge Ofcom to avoid further intervention at this early stage.

177. Ofcom have noted in the consultation document that there should be a set of KPIs agreed with industry. This should be an area that is left to be implemented by Openreach and industry once there is sufficient volume and data to properly test and measure. Ofcom have enabled the product to be consumed by CPs and it is now up to those CPs to begin placing orders as expected. Regulatory intervention should be proportionate and focussed on issues identified once the product has been made available, consumed at scale, and has matured. It is now up to industry to use the opportunity that has been presented so that the product and service can be developed.

<u>QoS regulation for dark fibre</u>

178. Please see our comments on Ofcom's proposals to introduce a dark fibre remedy, set out in Section 6.

179. Openreach disagree with the imposition of QoS Standards for Dark Fibre in the BCMR 2019, and with the idea in the remedies consultation that there should be QoS Standards on dark fibre that are separate to those imposed on active Ethernet services. If QoS Standards were to be applied to dark fibre, there should be an aggregated measure which includes active Ethernet services and dark fibre together. In any event, Ofcom already have the ability to review dark fibre performance via the detailed set of KPIs Openreach is required to provide under the BCMR 2019.

180. Should Ofcom decide to consider this further, there needs to be a statistically valid and significant volume of orders completed over a sufficient period of time before making any assessment.

Additional considerations in relation to setting QoS Standards

181. In addition to the important consideration that must be made in relation to the mechanism by which any service standards are set and their relevant levels, there are a number of other factors that ought to be included as part of any assessment, all of which we would like the opportunity to discuss with Ofcom in more detail:

    a. While Ofcom are proposing different remedies according to the geographic competitive status of different services, it is not clear whether any QoS remedy imposed will differ according to area, although we have assumed for the purposes of this response that there will not be separate measurements. Further analysis will need to be undertaken to understand the impact of Ofcom's proposals to have two separate pricing mechanisms according to the geographic location and competitive status of the area in which the service is provided. This will include assessing the **costs associated with service delivery in different areas**.

    b. In the business connectivity area, Ofcom have typically set standards which apply on a national basis, with further detailed KPIs showing regional breakdowns. We support this approach. In relation to any standards which apply to the WLA market, we also believe that there is a case to adopt a similar approach, **with service targets only applying at a national level but with detailed KPIs showing the regional breakdown**. We believe that this provides an opportunity to future-proof the regime.

    c. In relation to the structure of any QoS regime that is set, we are keen to explore **adopting a pre-defined review point trigger** to ensure that any standards imposed remain fit for purpose.

Other QoS remedies

182. Over the last 5 years, QoS Standards have been Ofcom's flagship remedy to drive service performance. These have been supported by other QoS remedies, particularly: KPIs, SLAs and SLGs. We consider that it is right to also review these remedies to ensure that they remain appropriate, relevant and fit for purpose.

Key Performance Indicators

183. Under the most recent BCMR and WLA statements[27], Openreach has been required to supply extensive and granular information to Ofcom, provided on both monthly and quarterly bases. Given that the next market review period will last 5 years, we consider that it is the right time to review the information that is provided to

[27] 2017 and 2018 respectively (noting the BCMR 2019 Draft Statement on 24 May 2019).

ensure it is still proportionate and relevant[28]. We also note that Ofcom produce a number of detailed statutory information requests in addition to this KPI reporting data (where requests can come from different Ofcom departments), and we consider that there is an opportunity to streamline this process to make it more efficient.

SLAs and SLGs

184. As Ofcom indicates in its consultation, SLAs and SLGs are obligations that Ofcom imposes on Openreach whereby specified contractual commitments around service standards (and compensation payable against those standards in the event of a failure to meet them) must be included in Openreach's reference offer.

185. Whilst we support the requirement for SLA/SLG regimes we consider that it is appropriate for us to conduct regular reviews of the regimes that are in place across all of our portfolio to ensure that they remain fit for purpose, appropriate, and are having the intended effect. We have been instrumental in enhancing its SLA/SLG regimes in a number of areas, including supporting industry in the introduction of automatic compensation payments to end-customers, as advocated by Ofcom.

186. We would like to note our concerns regarding the proportionality of some of the SLG rates that currently exist. SLGs which go beyond a reasonable pre-estimate of loss are not proportionate and are likely to lead to the wrong incentives being imposed. This is an area that still needs addressing, and Openreach supports the Ofcom sentiment in the BCMR that it would be desirable to address this area ahead of the FTMR[29]. Given that it is likely that Openreach and CPs will disagree on this point, Ofcom will need to include an assessment of this in its work plans.

[28] We note that there has been productive discussions with Ofcom regarding the Ethernet KPIs provided to Ofcom via the BCMR 2019 consultation process.
[29] BCMR Draft Statement 2019, paragraph 15.276.

6. Proposal to regulated Dark Fibre Access in 'non-competitive' areas

Ofcom's proposed approach

187. Ofcom is proposing to impose dark fibre as a SMP remedy in areas it identifies as 'non-competitive'. Ofcom positions dark fibre as the principal long-term remedy to address concerns relating to the supply of wholesale leased lines[30].

188. Ofcom goes on to say that the dark fibre remedy will be subject to a cost-based charge control and that, unlike Ofcom's proposals in the BCMR, the dark fibre remedy will not be subject to usage restrictions. On the latter point, Ofcom justifies the absence of usage restrictions on the basis that it is difficult to predict how dark fibre will be used in practice.

189. Ofcom justify a focus on dark fibre on the grounds that (i) it offers several competition benefits over leased lines services, particularly in relation to giving telecoms providers greater flexibility over the equipment and services they can offer; and (ii) availability of dark fibre in non-competitive areas could provide wider benefits by improving synergies with fibre deployments in potentially competitive areas.

190. Ofcom notes that imposing a dark fibre remedy could weaken incentives for rival providers to invest in networks, but considers this to be less relevant in an area where it believes there is limited potential for rival network deployment.

Ofcom has not made the case for the introduction of dark fibre in non-competitive areas

191. As we set out in Section 3, we believe that, if public subsidy is available for the most expensive final 10% of premises, the whole of the UK could be considered potentially competitive, or at least contestable. That is, build costs – supported by the availability of cost-based uDPA across the whole of the UK – could make deployment of multi-service, fibre-rich networks economically viable for Openreach and/or other rival networks across the area Ofcom suggests could be 'non-competitive'. On this basis, Ofcom's arguments for a dark fibre remedy would fall away: such a remedy would be unnecessary to support build and would act as a deterrent to otherwise viable network deployments, contrary to Ofcom's objectives.

192. But even on the terms Ofcom sets out in the Remedies consultation, the proposal to introduce regulated dark fibre appears contradictory and insufficient:

    a. Ofcom proposes to categorise areas as 'non-competitive' on the basis that no *multi-service* fibre-rich networks are expected to be deployed utilising uDPA in this area.

    b. It appears that this finding gives no specific weight to the actual or potential presence of *leased lines* networks targeted at business customers within these areas – i.e. the finding that the area is 'non-competitive' is driven by Ofcom's belief that there will be no case, even with regulated uDPA available, to deploy alternative networks to over 65% of premises in any postcode sector; it is not driven by the existence of or potential to build leased line networks in any part of the sector to reach business premises or mobile mast sites, etc.

[30] Promoting competition and investment in fibre networks. Initial proposals – Approach to remedies. March 2019. Paragraph 3.30.

c. However, Ofcom also suggests that competition in the supply of leased lines networks and services within the final third *could* emerge based on access to Openreach dark fibre on regulated, cost-based charges.

d. While the proposal to require Openreach to make dark fibre available within the non-competitive area is driven by an assessment of competition in the supply of leased line services, Ofcom goes on to suggest that dark fibre should be provided without usage restrictions, implying that dark fibres could be used – potentially alongside uDPA - to reduce the costs of deploying multi-service fibre-rich networks.

193. Therefore, notwithstanding our view that there is scope for commercial deployment of multi-service, fibre-rich networks by rivals in the final third, these proposals do not appear to have been based on any proper consideration of:

a. The extent of existing competition in the supply of leased lines within the scope of the area Ofcom suggests could be 'non-competitive' – e.g. the concentration of alternative networks in business areas of towns and cities, business parks and/or data centres that overlap with the postcode sectors Ofcom suggests do not meet its proposed criteria for being considered 'potentially competitive'.

b. How build economics of targeted *leased line* networks are expected to be impacted by the availability of cost-based uDPA – i.e. how the competitive supply of leased line networks might change on a forward-looking basis and whether all or some of the area considered 'non-competitive' by reference to multi-service networks might actually be 'potentially competitive' in the context of leased line services given the availability of uDPA.

194. In other words, Ofcom has not explained why it believes that the regulatory remedy for us to supply cost-based uDPA is considered insufficient to address the identified competition concern relating to the supply of leased line services. The uDPA remedy will be available across the whole of the UK, including in the non-competitive areas described in the Remedies consultation, in line with the requirements of the PIMR. This is a major new regulatory remedy and will significantly enhance the ability of communications providers to compete in a range of wholesale and downstream markets, including for the provision of leased lines to business customers, and for use in backhaul solutions.

195. Openreach believes that Ofcom should allow the uDPA remedy to play out in non-competitive areas as the principal (and additional) means to address competition concerns in the leased lines market. Further, Ofcom should only mandate the introduction of dark fibre in circumstances where uDPA has already been allowed to bed in, and in circumstances where there is additional evidence showing that uDPA has proved ineffective in addressing the competition concerns specified. These conditions do not presently exist.

196. This reinforces the importance of Ofcom conducting a detailed market assessment that considers the specific competitive conditions applying to different access services, allowing for potential short and long-term differences in the economics of supplying high bandwidth connectivity solutions to businesses and other telecoms networks compared to the supply of connectivity to residential and small business customers and taking full account, on a forward-looking basis, of the impact of the availability of uDPA.

197. Ofcom then notes that a further potential benefit of dark fibre availability could be "..*synergies with fibre deployments in potentially competitive areas by allowing competing telecoms providers to offer similar products across both areas*.[31]" This raises concerns about the consistency of Ofcom's dark fibre proposals with Ofcom's proposed overall final third policy approach – i.e. the proposal to establish a RAB model to drive investment by Openreach. If Ofcom anticipates that the availability of regulated dark fibre across the proposed non-competitive area might support the building of alternative multi-service fibre-rich networks in all or part of that area, then it follows that there would be demand-side risk to volumes in any RAB model. Furthermore, even if the use of dark fibre in this area supported more targeted network deployment that was largely or exclusively focussed on the supply of leased lines services, this would still have an impact on any build case being considered by Openreach for the final third. Overall, therefore, we are concerned that Ofcom's proposed approach to dark fibre will act to disincentivise investment by Openreach in the final third.

Ofcom's current dark fibre proposals risk undermining rather than supporting its wider policy objectives

198. Notwithstanding the points above, Ofcom has, in our view, overstated the potential benefits that dark fibre is likely to bring, whilst failing to recognise the significant risks that its introduction would create.

199. We believe that Ofcom's dark fibre remedy would lead to the proliferation of inefficient arbitrage across a range of different commercial scenarios, and that this would undermine certainty in relation to cost recovery, revenue and volumes. In turn this will undermine, rather than support, Ofcom's broader policy objectives (many of which Openreach support) such as preserving and promoting the investment incentives faced by Openreach. This very significant consideration is supported and expanded upon in the independent report by AlixPartners that is included as an Annex to this response (see below).

200. In addition, with reference to BDUK, we consider that mandating dark fibre in non-competitive areas could lead to unintended consequences if communication providers use it to unbundle fibre assets funded by BDUK or similar schemes. Such actions would then have the effect of reducing the levels of fibre take up with a corresponding reduction in the amount of clawback funding available for local authorities that could be used for the purposes of increasing local fibre coverage. In other words, mandating dark fibre in the manner that Ofcom is proposing could, perversely, lead to reduced fibre coverage in non-competitive areas.

201. As noted above, in Openreach's view Ofcom has not yet made the case properly for introducing dark fibre in non-competitive areas. It is imperative that Ofcom goes through due process ahead of finalising its proposals. Such an assessment much include a proper review of the potential risks and benefits associated with Ofcom's proposals. At this stage, this exercise has simply not been conducted.

202. In circumstances where Ofcom, following proper consideration of the need for dark fibre, continued to believe that the introduction of dark fibre was still justified (which we do not consider will be the case); it must also be sure that any remedy imposed is proportionate.

203. In this regard, we consider that:
    a. Continuing with the current proposal will materially increase aggregation at different points in the network (thereby reducing fibre proliferation), destroy the bandwidth gradient for leased lines Ethernet

[31] Promoting competition and investment in fibre networks. Initial proposals – Approach to remedies. March 2019. Paragraph 3.35.

services, will significantly increase arbitrage risks in a number of different scenarios, and will lead to significant value destruction, including in markets (e.g. Very High Bandwidth) where there is already strong competition;

b. Ofcom needs to properly consider what an appropriate price should be for dark fibre. Failure to do this will damage Openreach's ability to recover its efficiently incurred costs, and through this potentially undermine wider policy objectives. On this topic, Ofcom's assessment must include an examination of the costs experienced in the relevant area; and

c. By failing to limit the scope of the dark fibre remedy, Ofcom risks destroying value in markets it is not intended to address, and where no competition problem has been established. If a dark fibre remedy is imposed, it must be limited to the applications and markets for which there is a clear requirement, and where the economic and legal case for its introduction has been established.

Ofcom needs to do further work in considering the appropriate commercial and technical features of any remedy imposed

204. As noted above, Openreach considers that the need to introduce dark fibre has not been established, and that the best solution is for Ofcom to withdraw this proposal and allow uDPA to gain traction across all areas.

205. If Ofcom persists with its proposal to introduce a dark fibre remedy, which it should not, damage to Openreach cost recovery and incentives to build fibre networks would be heightened in circumstances where dark fibre pricing and scope had not been properly specified, taking due account of relevant considerations, such as the potential impacts on the risks, costs and benefits in affected markets.

206. On the matter of price, Ofcom is currently proposing a cost-based charge control. Ofcom is not clear on the cost standard, or on the reference product (should one exist) against which costs and prices would be benchmarked. This is a very important area that will directly impact Openreach's ability to recover its efficiently incurred costs and is one that will need much deeper consideration by Ofcom throughout the remainder of the consultation process.

207. We have begun to assess the operational costs of delivering services across different areas, in order to assess if cost variabilities exist. Further analysis is needed in this area and should be included as appropriate within Ofcom's assessment.

208. This information will need to be considered further by Ofcom, and in circumstances where Ofcom proceeds with a cost-based pricing approach for dark fibre, it must take account of the actual delivery costs present in non-competitive areas. Failure to do this would clearly lead to cost under-recovery and render the remedy disproportionate.

209. Ofcom should also do further assessment of the likely market value that any dark fibre remedy is likely to provide access to. The level of value will be affected by the scope / degree of usage restrictions associated with the remedy (e.g. the points in the network at which communication providers are able to intervene and use dark fibre for aggregation purposes). Depending on the approach taken by Ofcom, it may be that a value-based approach to pricing for dark fibre would be appropriate.

210. As regards product scope, as noted above, Ofcom appears to be currently proposing a remedy without any limitations on its scope. We consider that this approach lacks economic or legal justification and will lead to dark fibre being used by communication providers to 'cherry-pick' value throughout non-competitive areas, including in areas where Ofcom has not established the need for dark fibre to address competitive failure, and in points in the Openreach network that could undermine Openreach's ability to recover its costs and damage incentives to invest.

211. Again, this area needs proper consideration by Ofcom, and should include, *inter alia*, the impacts on cost, competition and investment of the remedy proposed.

212. Should Ofcom proceed with dark fibre, Openreach strongly believes that the 'use case' for the service would need to be carefully considered and limited in order to ensure that the product was used solely for its intended purpose, into markets where its need had been clearly established, and a proper assessment had been made of the likely impact on costs and benefits.

Independent paper by AlixPartners

213. We have commissioned AlixPartners to conduct an independent assessment of Ofcom's initial proposals on dark fibre in non-competitive areas, and to make some early suggestions on the potential issues arising and next steps that Ofcom should take as it develops its thinking.

214. The AlixPartners' paper is provided as an Annex to this response, and highlights, *inter alia*, that:

    a. Introduction of a cost based dark fibre remedy in non-competitive areas will lead to multiple forms of arbitrage; which is likely to undermine Openreach's ability to recover its efficiently incurred costs on existing and new fibre assets;

    b. A static approach to setting cost based dark fibre charges will exacerbate these risks;

    c. This could have a chilling effect on investment by Openreach (and other CPs) in the deployment of fibre networks in non-competitive areas, which could in turn lead to the need for additional public money in order to support government objectives; and

    d. Ofcom needs to undertake a rigorous assessment of the impact of its dark fibre proposals, and such an approach needs to properly consider the potential benefits of dark fibre, alongside the harm to the incentives to invest in fibre that dark fibre will create.

Conclusion

215. Openreach does not support Ofcom's proposals for the introduction of an unrestricted dark fibre remedy in the area Ofcom suggests is 'non-competitive'.

216. Ofcom's proposals as currently tabled are likely to lead to significant arbitrage and cost under recovery, and will undermine rather than support Ofcom's wider policy objective of incentivising Openreach's investment in fibre networks in non-competitive areas (and also potentially those of other communication providers).

217. We consider that it is right that Ofcom allows uDPA to bed in ahead of any additional imposition of dark fibre.

218. At this stage, Ofcom has not conducted a full assessment into why dark fibre is needed, nor has it established that its proposals are proportionate. Further, the commercial and technical features of the remedy have not been properly considered.

219. As a next step, Ofcom must develop a robust assessment of this area, and that will need to include proper consideration as to the likely benefits and risks of introducing dark fibre in non-competitive areas.

220. Openreach will be making further representations on the matters set out in this response, and on those highlighted in the AlixPartners paper that is included as an Annex to this response.