



SKY'S RESPONSE TO THE DCMS FUTURE TELECOMS INFRASTRUCTURE REVIEW CALL FOR EVIDENCE

EXECUTIVE SUMMARY

1. The Government's review of future telecoms infrastructure is both crucial and timely. Digital communications infrastructure is already critical to consumers and businesses, and is an important driver of positive economic outcomes. But increasing bandwidth demands coupled with the UK's relatively poor standing in provision of ultrafast broadband and beyond means that significant investment is needed now, if the UK is to secure the world-class digital connectivity it requires.
2. Sky is a strong supporter of full fibre. It is fast, reliable and effectively futureproof, with clear advantages over alternative ultrafast technologies. There are significant benefits to be realised for our customers and the economy as a whole should full fibre be rolled out to as many premises as possible over the next decade. As such, we are eager to play our part in delivering this vision.
3. In the current market, Openreach will be pivotal to any future full fibre success. Recent announcements by alternative operators are encouraging. But as the UK's only owner of a nationwide fixed telecoms network, it's clear that Openreach is best placed to deliver full fibre investment at scale.
4. Sky is not a major network operator and is not currently investing directly in ultrafast infrastructure. But we, along with other retail providers, will nevertheless play a critical role in unlocking investment in full fibre networks. Through our sizeable customer base, and our expertise in customer service and management, marketing and sales, we are well positioned to drive significant demand and customer volumes. This will be of fundamental importance to the investment case for full fibre networks.
5. Openreach, and indeed policymakers, should recognise that attracting large numbers of end users on new networks as early as possible will improve returns and cash flow, thus reducing the investment risk of full fibre considerably. It is therefore crucial that retail providers are given strong incentives to accelerate demand for the new network amongst consumers and business.
6. For Sky's part, given the right conditions, we would be prepared to commit to move all of our broadband customers in a given region onto new Openreach full fibre networks, allowing the old copper networks to be switched off. Migration from copper to full fibre at the earliest opportunity will be critical in reducing operating costs.
7. With these steps, the current market has the potential to ensure the UK becomes more competitive in terms of its connectivity. But full fibre coverage will continue to be constrained by enduring barriers, and it is likely that a majority of households will remain unserved. If policymakers have genuine ambition to make the UK an international leader in connectivity, they must address enduring constraints in the market through targeted policy changes.
8. The first of these is market structure. Put simply, the full structural separation of Openreach from BT is the single policy step that would drive the greatest additional full fibre deployment. An independent Openreach would be highly incentivised to invest significantly in full fibre because, for the first time, BT Consumer's business would be truly

contestable and as a result the potential for a viable, alternative fibre network would dramatically increase. Full independence for Openreach would also increase the likelihood of substantial outside investment, including from other industry partners.

9. The second issue is pricing on legacy copper networks. So long as the copper network continues to be deliver high returns for Openreach, it has little incentive to invest in new fibre networks. The status quo bears this out – Openreach has made significant excess profits in the last ten years, with negligible full fibre investment. A material cut in copper prices would force Openreach to make new network investments in order to remain as profitable. The only way it could continue to enjoy high returns would be if it invested in the step-change technology the UK needs.
10. Taken together these policy changes could deliver a full fibre Britain over the next decade, driving deployment further and faster and making ultrafast services available to the vast majority of UK households and businesses. In contrast, the existing market – constrained by limited investment and incremental upgrades – will leave the UK far behind its competitors.
11. Sky stands ready and willing to play our part in delivering a full fibre Britain, and we look forward to working with Government and industry as this process progresses.

SECTION 1: FULL FIBRE INVESTMENT IS CRITICAL FOR THE COMMUNICATIONS SECTOR AND THE WIDER ECONOMY

- 1.1 Sky shares the Government’s vision of an ambitious digital infrastructure policy. Widespread access to world class connectivity would be a significant contributor to positive economic outcomes in the UK. This is a crucial policy area that warrants thorough consideration and consultation, to ensure these positive outcomes are delivered both now, and in the long term.
- 1.2 The DCMS call for evidence (“the call for evidence”) invites views on a variety of policy areas with the aim of driving deployment of full fibre networks and 5G. Sky’s response primarily addresses questions regarding full fibre – although we note and support Government’s policy position on 5G.
- 1.3 In this section, we briefly summarise the importance of full fibre.

Connectivity drives economic growth

- 1.4 Over the last decade, mass market adoption of broadband has transformed the way we live and work. Broadband has rapidly become as important to consumers and businesses as any other utility and is now not just a key driver of the digital communications sector, but an important contributor to positive economic outcomes more generally.
- 1.5 In particular, along with a direct contribution to economic output, internet access is also crucial to the future of all of our major industries, acting to amplify growth and productivity. The importance of internet-delivered services to consumers and businesses is likely to continue to grow exponentially. As a result, the challenges associated with existing infrastructure should be addressed urgently, while long-term investment needs to be incentivised in order to ensure Britain keeps pace with the rest of the world.

A step change in capacity is needed

- 1.6 This proliferation of internet-reliant services is placing increasing pressure on telecommunications networks. Cisco estimates that global IP traffic has increased five-fold over the past five years and will triple in the next five years alone.¹ In order to meet the changing and increasingly digitised needs of businesses and the population more widely, Sky considers that investment must be made in high capacity, reliable and future-proof communications infrastructure to deliver world class connectivity.

Full fibre delivers significant benefits and has distinct advantages over alternative technologies

- 1.7 Fibre-to-the-premise (“FTTP”), or ‘full fibre’, is the fastest, most reliable broadband infrastructure and is effectively future-proof. For these reasons, it has been shown to drive more economic growth than copper-based broadband networks. For example:
 - (i) where it has been deployed in the USA, FTTP has been estimated to add around 1% to per-capita GDP;² and

¹ The Zettabyte Era’, Cisco, June 2017. (http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/VNI_Hyperconnectivity_WP.html)

² ‘Early Evidence Suggests Gigabit Broadband Drives GDP’, The Analysis Group, 2015, available at: http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/gigabit_broadband_sosa.pdf

- (ii) the European Commission has forecast that if 62% of broadband connections were FTTP by 2025 then 0.76% would be added to the European Union's GDP.³
- 1.8 Accordingly, investment in broadband infrastructure, particularly in full fibre, is critical for the UK's future productivity growth and innovation.
- 1.9 In comparison to full fibre, ultrafast technologies that continue to rely in part on copper access lines have significant weaknesses. In particular, Sky considers that G.Fast – which has been the preferred technology in the UK for delivering faster broadband – is not futureproof and, at best, is a temporary stop-gap before the eventual, necessary investment in full fibre.
- 1.10 The limitations of G.Fast include:
- (i) slower broadband speeds, with current products offered by Openreach reaching 330 MBps (in comparison to full fibre which commonly delivers 1 Gbps or higher).
 - (ii) variable line speeds which are highly dependent on the copper line length between premises and the street cabinet, with significant deterioration as this distance increases. In contrast, full fibre offers a uniform maximum speed to all premises.
 - (iii) higher fault rates on account of the continued use of copper cables.
 - (iv) higher running costs as a result of higher fault rates and more equipment to maintain compared to full fibre.

The UK is at risk of falling behind in full fibre

- 1.11 Most of the UK's international competitors understand that strong future economies will be built on full fibre, and are making firm progress towards widespread availability.
- 1.12 Several countries have already made FTTP available to the majority of their population. There is high coverage in Japan (>95%), South Korea (>95%), Portugal (>80%), Sweden (>60%) and Spain (>60%)⁴.
- 1.13 Meanwhile other countries that have started from a similar position to the UK have bold ambitions to accelerate ahead in future. New Zealand is building FTTP networks that will deliver speeds of up to 1 Gbit to 80% of the population by 2022, using private investment supported by temporary public debt and equity investment. France has rolled out FTTP to more than 20% of the population, with progress stimulated by a fibre-based Government plan worth €20bn⁵. In Italy €8bn of public and private investment will deliver around 80% FTTP coverage, while alternative operator ENEL has committed to rolling out wholesale fibre in 250 Italian cities⁶.

³ P.77, European Commission's Staff Working Document accompanying the 'Proposals for a Directive establishing the European Electronic Communications Code (Recast) and a Regulation establishing the Body of European Regulators for Electronic Communications' (Part 1/3) ('Part 1 of the Commission's Impact Assessment').

⁴ Figure 10, Ofcom International Communications Market Report, December 2017, available at: <http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/digital-comms-review/DCR-statement.pdf>

⁵ *Ibid.*

⁶ Enel prepares a marriage proposal to F2i to ensure Metroweb's future, ItalyEurope 24, May 2016, <http://www.italy24.ilsole24ore.com/art/markets/2016-05-05/metroweb-132331.php?uid=ADc2MHB>

- 1.14 As the call for evidence notes, FTTP is available to less than 3% of UK households⁷. It is clear that the UK must substantially improve its connectivity in order to maintain its international competitiveness.

The risks in delaying full fibre investment are significant

- 1.15 While full fibre networks are expensive to deploy, the potential costs of delaying investment in full fibre outweigh any risks from investing too early. A lack of full fibre infrastructure risks stifling innovation and demand. Waiting too long could also result in wasted investment in other, intermediary technologies (such as G.Fast) while the UK becomes increasingly uncompetitive compared to other economies that have deployed full fibre networks. Slower, less reliable broadband would constrain the full scope of innovation and dynamic efficiencies that would otherwise be made possible through full fibre networks.

SECTION 2: FULL FIBRE DELIVERY IN THE EXISTING UK TELECOMS MARKET

- 2.1 The call for evidence invites views on what the existing UK telecoms market structure and policy framework will deliver in terms of full fibre deployment. In this section, Sky outlines its view of how infrastructure investment might be best maximised under current conditions.

Large-scale fibre deployment in the UK will be reliant on Openreach

- 2.2 In recent years the UK has seen a number of full fibre announcements from non-incumbent infrastructure operators. These include:
- (i) Virgin Media's "Project Lightning", which aims to extend the Virgin Media cable network to pass another four million homes – two million of which will be delivered using FTTP.
 - (ii) The strategic partnership between Cityfibre and Vodafone, which is committed to pass one million premises by 2021, with the possibility of four million more by 2025.
 - (iii) Other alternative operators with plans to expand their footprint, such as Hyperoptic (which reaches around 200,000 premises in multiple dwelling units) and Gigaclear (which reaches more than 50,000 homes predominantly in rural areas).
- 2.3 Sky welcomes these developments as useful sources of competition in network infrastructure. However, as Ofcom has noted⁸, even the most ambitious of these plans taken together propose to cover less than 20% of UK premises.
- 2.4 As the UK's only operator of a nationwide fixed telecoms network, Openreach is clearly central to full fibre investment occurring on a large scale. It is the only operator that is able to combine widespread existing assets, significant resources, and a large existing customer base.
- 2.5 Openreach's network upgrade plans will therefore be the key determining factor in the extent to which the existing market can deliver full fibre investment.

⁷ Figure 10, Ofcom ICMR

⁸ Sharon White speech, December 2017, available at: <https://www.ofcom.org.uk/about-ofcom/latest/media/speeches/2017/competition-britain-fibre-future>.

Openreach should seek to roll out full fibre as widely as possible

- 2.6 Openreach first announced ultrafast network upgrade plans in May 2016 when it promised to deliver services to 12m premises by 2020 through £6bn worth of investment.⁹ These plans were modest for a number of reasons:
- (i) Only 2m of these premises (8% of total UK premises) were planned to be full fibre.
 - (ii) The rest of the premises were to be covered by G.Fast. As noted, G.Fast's continued reliance on copper risks simply repeating some of today's problems: unreliable service, postcode variations and an even greater digital divide. Moreover this investment would be likely only to be a stop gap, with full fibre investment still necessary in the future.
 - (iii) Openreach's plans were not accompanied by a capex budget increase – the £6bn figure represents a continuation of the normal BT-EE capex run-rate, split between mobile and fixed investments.
- 2.7 In July 2017, Openreach sought views from industry on the prospects for a “large-scale” deployment of full fibre across the UK. This invited comments on a possible roll-out to 10 million homes by 2025. Openreach subsequently announced its ‘fibre first’ programme in January 2018, under which three million premises would be covered by full fibre networks by 2020.
- 2.8 Given the weaknesses of G.Fast and the asymmetric risks of not investing in FTTP early enough, Openreach is right to contemplate pivoting away from its previous G.Fast plan to one that rolls out a large-scale full fibre network instead. Sky's response to Openreach's consultation strongly supported this proposal, and urged Openreach to be ambitious in its full fibre plans.
- 2.9 Investment in wide-scale full fibre is a significant, ‘once-in-a-generation’ event which will effectively future-proof Openreach's network for decades to come. The investment should be viewed in a similar vein to other major UK infrastructure projects such as HS2 or replacing Victorian sewers.
- 2.10 Openreach should therefore plan beyond its recent announcements for an ambitious full fibre deployment in a number of respects:
- (i) Full fibre should be made widely available in order to extend the benefits as widely as possible.
 - (ii) Full fibre should be rolled out quickly to ensure Openreach can fully leverage the economies of scale and scope of a major infrastructure project while optimising the rate at which end users can join the new network. This in turn reduces deployment costs and accelerates revenues of the new network, thus improving the cash flows and the pay-back period, all while delivering the benefits of FTTP sooner. Sky believes that Openreach could target rolling out full fibre to 2 million premises each year which would mean that it could deploy to 10 million homes within five years. Assuming its roll out started in 2019 after a year of planning, it could pass 10 million homes by 2024.

⁹ BT to invest billions more on fibre, 4G and customer service, broadbanduk.org, 5 May 2016, <http://www.broadbanduk.org/2016/05/05/bt-to-invest-billions-more-into-fibre-4g-and-customer-service/>

- (iii) Openreach should adopt a long term investment horizon, in keeping with other major infrastructure projects and the long economic life of an FTTP network and its components. This will require a step change in Openreach's standard expectations for the appropriate investment pay-back period for a network project. Low double-digit pay-back periods - i.e. just over 10 years - such as those expected for its FTTC investment are inappropriate benchmarks for a full fibre investment. In Sky's view, a target pay-back period of over 40 years is necessary and appropriate, and more in line with other large scale national investment projects in utility industries with long run stable assets
- (iv) Full fibre should be an attractive proposition for retailers, in order to drive high customer volumes at the earliest opportunity. We discuss this further below.
- (v) Openreach should adopt a cut-over model, ensuring that the period of parallel running of old and new networks is minimised. We consider this in more detail below.

2.11 A full fibre deployment delivered in line with these criteria would likely represent the optimum roll-out achievable under the current market conditions.

Openreach's customers, including Sky, will play a critical role in driving demand

- 2.12 Many discussions on digital infrastructure policy have focused on the role network operators will play. This is understandable given that the direct investment decisions of these providers have an obvious impact on the UK's connectivity. But policymakers should also be mindful of the crucial role that retail providers will fulfil in delivering a full fibre future.
- 2.13 Sky is the second largest provider of fixed line communications in the UK today. We do not own an extensive access network of our own, and are not currently investing directly in access infrastructure. But we can play an important part in creating the right environment for full fibre deployment via our customers and our expertise in customer service and management, marketing and sales. These factors are often underplayed, but ultimately help drive customer volumes, which are of fundamental importance to any investment case for full fibre.
- 2.14 The demand-side risk that network operators like Openreach face is significant. Attracting insufficient volumes of end users to the new network could result in unacceptably low returns (or even losses), higher negative cash flows and extended pay-back periods.
- 2.15 Therefore in order to justify investment in full fibre, it is necessary for this demand-side risk to be shared between Openreach and its customers. This is precisely how large capital projects are financed in most other sectors – whether sending up a satellite or building a shopping centre, wholesale operators rely on agreements with companies at the retail level that are prepared to drive the customer volume which generates the returns their businesses will rely on.
- 2.16 Sky and others at the retail level can fulfil this role. Where the right commercial terms are on offer, in line with customer expectations, retail providers are able to enter into a range of risk-sharing models that could accelerate demand on the new network and reduce the period of dual running of legacy and new networks.

Attractive pricing is critical to driving consumer take-up

- 2.17 The call for evidence asks whether consumers are willing and able to pay for new digital infrastructure, given its expected benefits. This question is a critical one for retail

providers faced with the task of selling ultrafast broadband delivered over new full fibre networks to existing and new customers. By extension, it is also of paramount importance to network operators themselves when setting commercial terms at the wholesale level.

- 2.18 There is now a range of international evidence available regarding consumer willingness to pay for ultrafast broadband. The overriding conclusion is that, in general, only a small minority are prepared to pay a material premium for faster broadband.
- 2.19 Several headlines are worth noting:
- (i) In a 2016 study, Communications Chambers noted that:

*Belgium aside, no [EU] country has achieved more than a 20% share [of ultrafast broadband] if their price premium was greater than €10 per month. This suggests that the pool of customers who place a material value on the incremental benefits of 100 Mbps broadband is low.*¹⁰
 - (ii) The same paper noted that Belgium's outlier status was likely the result of a free upgrade to 100 Mbps (or more) which Telnet, a leading provider, gave to all its customers in March 2015.
 - (iii) Consumer studies in both the US¹¹ and Australia¹² have suggested that households' valuation of faster broadband speeds are incremental at best, with relatively little added value beyond 100 Mbps.
 - (iv) These findings have been borne out by consumer behaviour in Australia. Users of the National Broadband Network have not shown significant demand for the higher speed tiers – more than 80% of fixed line customers take a line with a downstream speed of 25 Mbps or less, while only 13% take the 100/40 Mbps speed tier (a portion that has been falling over time).^{13 14}
- 2.20 A low customer willingness to pay does not disprove the assertion that the benefits of faster broadband (and full fibre in particular) are significant. Instead it simply means that those benefits may fall more widely than on each individual bill-payer (for example through facilitating better remote working, software virtualisation etc).

¹⁰ 'An analysis of FTTP's role in UK connectivity. The evidence for a targeted approach. A report for BT', Communications Chambers, 2016. Available at: <http://www.commcham.com/pubs/2016/11/3/fttps-role-in-uk-connectivity.html>.

¹¹ Liu, Prince, and Wallsten, 'Distinguishing Bandwidth and Latency in Households' Willingness-to-Pay for Broadband Internet Speed', Technology Policy Institute, August 2017. Available at: <https://techpolicyinstitute.org/wp-content/uploads/2017/08/Distinguishing-Bandwidth-and-Latency-in-Households-Willingness-to-Pay-for.pdf>.

¹² 'Independent cost-benefit analysis of broadband and review of regulation', 2014. Available at: <https://www.communications.gov.au/departmental-news/independent-cost-benefit-analysis-nbn>.

¹³ 'The rollout of the National Broadband Network', Parliament of Australia report, September 2017. Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/National_Broadband_Network/NBN/First_report.

¹⁴ Additional relevant evidence includes: 'Connectivity for the Gigabit Society, A framework for meeting fixed connectivity needs in Europe', Communications Chamber for Liberty Global, 2016, available at: <https://www.libertyglobal.com/pdf/public-policy/Liberty-Global-Policy-Series-Connectivity-for-the-Gigabit-Society.pdf>; and 'Connectivity Broadband market developments in the EU, Europe's Digital Progress Report' April 2017, available at: <https://ec.europa.eu/digital-single-market/en/news/europes-digital-progress-report-2017>.

- 2.21 But this evidence does suggest that in order to drive broadband customers onto new full fibre networks, pricing at both the wholesale and retail level will be of paramount importance. Openreach and other network operators should therefore seek to set wholesale charges at a level that allows and incentivises retailers to replicate existing broadband propositions, in order to drive the greatest amount of take up. It will also be necessary to minimise the pricing gap between standard broadband and higher speed products, in order to encourage upsell and upgrades.

Copper switch-off will be crucial, with a cut-over model making most sense

- 2.22 The call for evidence asks what Government should consider when assessing the potential for migration from copper to full fibre networks. Sky considers that such a migration is vital to ensuring that full fibre investment is incentivised and profitable in the long-run.
- 2.23 In particular, it is essential for the economic viability of the full fibre investment that the period of parallel running of old and new networks is minimised. This will ensure that the full scope and scale economies of the new network are unlocked – the substantial fixed and common costs of telecoms networks necessitate high volumes of end users and the removal of duplicated assets – and all end users benefit from the superior network.
- 2.24 More specifically, Sky favours a “cut-over” model – whereby after a period of demand-led migration to FTTP, premises are eventually forcibly migrated from the legacy copper network to the full fibre network. We consider it reasonable that any period of parallel running should last no longer than three to five years from the point at which FTTP is made available in any given area.
- 2.25 Again, retail providers will play a critical role in a broadband switchover. Sky in particular has the necessary operational, marketing and customer service expertise to execute large customer programmes of this type, as demonstrated by our key role in the successful completion of the television Digital Switchover programme.
- 2.26 Given the right commercial conditions, Sky would be happy to commit to move all of our copper broadband customers onto new Openreach full fibre networks in any given region, allowing the old copper networks there to be switched off.
- 2.27 This commitment would be contingent on Openreach offering corresponding products to those provided today (e.g. with download and upload speeds equivalent to GEA and DSL), available at the same prices on new full fibre networks to which customers can be migrated.
- 2.28 Although this would allow Sky to drive similar customer economics as it achieves on current networks, this migration would still be a significant move, involving substantial resources and costs to Sky to make it happen. Nevertheless, such a commitment would act as a major contribution to new fibre roll-out programmes by Openreach.

SECTION 3: FOR THE MARKET TO DELIVER BEYOND THIS, GOVERNMENT MUST ADDRESS KEY MARKET CONSTRAINTS

- 3.1 The call for evidence invites views on what market models and policy changes may be appropriate to incentivise the greatest amount of full fibre investment. In this section, Sky sets out its views on the steps policymakers should take to drive FTTP deployment faster and further.

Absent action by policymakers, full fibre may only reach a modest coverage level in the medium term

- 3.2 Even in the event that Openreach adopts an ambitious roll-out in line with Sky's suggestions in Section 2, this would still only see full fibre coverage in the UK reaching perhaps 13m homes by 2025 – less than 50% of the population.
- 3.3 Specifically, this deployment:
- (i) would be primarily driven by Openreach's 10m premises build, with only additional contributions from alternative operators.
 - (ii) may include a significant level of geographical overlap (particularly between Openreach and Virgin Media's Project Lightning areas), leading to areas that would be 'superserved'.
 - (iii) would include some rural provision available through operators such as Gigaclear, but with the likely price premium on these propositions being particularly high.
 - (iv) would still see the majority of UK premises remain reliant on copper legacy networks.
- 3.4 The limitations of this delivery stem from the incentives the current market creates both for Openreach and alternative operators. If policymakers wish to see a step change in the level of full fibre deployment in the UK, they must address these incentives.

Full Openreach separation would be the single biggest step towards a full fibre Britain

- 3.5 Notwithstanding the proposals from competing network operators, investment in alternative infrastructure at scale remains challenging given the existing market structure. While BT continues to own Openreach over half of the downstream market is not contestable by other operators. This means that even when combining competitors' market shares, the payback may be too long and cash outflow too high to deploy at scale. At the same time, while BT retains strategic oversight and financial control of Openreach, it restricts the ability for Sky and others to be able to share risk as effectively through Openreach.
- 3.6 Sky and many other companies have argued strongly that Openreach should be separated into a fully independent company from the rest of BT. Although this would be a major departure from the existing structure of the communications market, it is normal in other infrastructure-heavy industries for the infrastructure owner to be separate from the main users – including, for example, airports and airlines as well as generators and the national grid.
- 3.7 BT Group's ownership of Openreach was a central focus of Ofcom's once-in-a-decade Digital Communications Review. Ofcom and BT Group reached agreement in March last year for Openreach to become a distinct, legally separate company within BT Group, with its own staff, management and strategy. Ofcom's stated objectives when announcing this were for the new Openreach *"to serve all its customers equally, working truly independently and taking investment decisions on behalf of the whole industry – not just BT"*.¹⁵

¹⁵ 'BT agrees to legal separation of Openreach', Ofcom, March 2017, available at: <https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2017/bt-agrees-to-legal-separation-of-openreach>.

- 3.8 Sky notes that, nearly a year on from this agreement, this process is not complete. While a new Board has been constituted, Openreach has yet to incorporate as an independent company. Moreover, the level of Openreach's independence has been questionable. While Sky welcomed the industry consultation on potential new full fibre investments, we would also note that at least one major proposed network investment – that of a voluntary rollout of superfast broadband to the remaining unserved areas of the UK – was announced without any prior discussion with Openreach's external customers.
- 3.9 Beyond this, even once Openreach becomes a legally separate company, there are still strong incentives acting against significant investment in FTTP. In contrast, full separation would address the major problems in the UK communications market and deliver a step change in investment able to drive a major full fibre programme.

An independent Openreach would be incentivised to re-invest a greater proportion of its revenue in network activities

- 3.10 BT Group's continued ownership of Openreach means it is still able to set the budget for capital expenditure on the Openreach network. Moreover, none of the governance changes, including legal separation, prevents BT Group from choosing to re-invest profits from Openreach in other Group activities. It is perfectly plausible for BT Group to take more money out of Openreach than it puts in. Indeed,
- 3.11 In contrast, the significant profits that an independent Openreach would make would no longer be diverted towards non-network activities. Openreach's management would be able to strike a balance between shareholder dividends and additional capital expenditure on the network (driving greater returns in future).
- 3.12 There is good reason to believe that an independent Openreach would be incentivised to re-invest more of these profits back into the network because of the threat of increased competition. For the first time, BT Consumer's business, with the largest subscriber base in the market, would become contestable, with competing upstream suppliers (existing and new entrants) theoretically able to win that business. This could transform the viability of these competing suppliers, and this new competitive dynamic would have a significant effect on Openreach's incentives. Investment would be required in order to retain its biggest customers.

An independent Openreach could better aggregate demand from all providers

- 3.13 As noted, providing the right incentives to Openreach's customers is an important step in sharing the substantial demand-side risks associated with a scale full fibre project. Doing so accelerates demand on the new network and reduces the period of dual running of legacy and new networks.
- 3.14 Openreach would therefore be best able to deliver significant full fibre deployment via a range of 'co-investment' models for sharing risk. All of these would be better delivered by an independent Openreach than a vertically integrated one.
- 3.15 For instance, were Openreach independent, Sky and other downstream providers would be better able to enter into long-term "take or pay" contracts. These contracts, commonly used in energy sectors, act as risk-sharing instruments between buyers and suppliers. They require the downstream provider to take a specified minimum volume of the product every year, and, where that minimum commitment is not met, pay for any shortfall. This provides a predictable cash flow for the infrastructure operator over a long period, against which it can raise finance to fund these long-term, capital-intensive projects.

- 3.16 Whilst Openreach remains owned by BT Group it is less incentivised to offer such arrangements, instead relying on BT Group decisions about capital allocation. Even if it were, continued vertical integration acts as a partial disincentive for Sky and others from entering into such contracts with Openreach, as there may be questions as to whether revenues from these contracts would be used to invest in other BT Group activities rather than in the network.
- 3.17 An independent Openreach that was more easily able to agree such arrangements could generate high levels of predictable returns that it would be able to borrow against. As an illustrative example, if Sky was aggregated with other competitors such as TalkTalk, Vodafone and a newly independent BT Consumer (together representing 20 million homes, or over 80% of the broadband market), take or pay contracts might easily guarantee Openreach £20bn or more of cash flow over a decade. It is reasonable to assume that, with the level of gearing that an independent Openreach could attract, levels of capital spending would also be able to rise. An independent Openreach might therefore easily be able to increase capital expenditure to £2bn pa – representing an extra £10bn over the next decade relative to Openreach’s current plans.

An independent Openreach would be able to attract investors with longer term horizons

- 3.18 At present, BT Group has a mixed investment profile by virtue of its substantial consumer facing divisions, and diversification into activities such as sports broadcasting. It attracts institutional shareholders typically interested in making returns on a short-term cycle. This in turn incentivises the BT management towards lower cost, incremental upgrades for Openreach, as opposed to fuller upgrades with payback over a longer period.
- 3.19 An independent Openreach would have the scale of a FTSE100 company that could attract capital from different kinds of sources. Utility-type investors such as pension funds and sovereign states are used to making large-scale investments on stable, long-run assets. Other long-term major infrastructure projects (for example the Thames Tideway Tunnel, or Hinkley Point) have proved attractive to these types of investors.

With market reform, a full fibre Britain is achievable

- 3.20 It is not unreasonable to believe that a separated Openreach could and would be incentivised to mobilise larger guaranteed cashflows to generate the private capital required to undertake an aggressive fibre roll-out. The illustrative additional £10bn estimate outlined above would be sufficient to deliver FTTP to upwards of 80% of UK households over the next decade.
- 3.21 The recent Prism / Tactis report for the National Infrastructure Commission on the cost of the UK’s digital communications infrastructure options presented a range of capex costs dependent on the type of scenario envisaged.¹⁶ In particular, Sky notes that the most applicable scenario for Openreach – a universal full fibre network built by re-using existing network infrastructure – was estimated to require approximately £20bn of direct network investment and an additional £6bn of capital expenditure on connections. As is to be expected, much of this estimated cost relates to the ‘long tail’ of difficult to serve households – meaning that a more modest £20bn total investment would be able to provide coverage to 95% of UK premises.

¹⁶ ‘A Cost Analysis of the UK’s Digital Communications Infrastructure options 2017- 2050’, Tactis / Prism, December 2017, available at: <https://www.nic.org.uk/wp-content/uploads/Cost-analysis.pdf>.

- 3.22 It is therefore reasonable to assume that a reformed market could mobilise the necessary private capital to deliver a true Fibre Britain within the next decade. In contrast, the existing market – constrained by limited investment and incremental upgrades – will leave the UK far behind its competitors.

Aggressive reduction in copper price would also incentivise fibre investment

- 3.23 The call for evidence asks what effect existing revenue streams have on investment plans. In the case of Openreach, the impact is demonstrable - where existing revenue streams are material and result in high margins, as is the case on legacy copper networks, they act as a significant brake on new full fibre investment.
- 3.24 For an incumbent such as Openreach, higher copper access prices reduce the incentive for risky new investments. As an ECTA study by WIK Consulting noted:

“An integrated incumbent will switch from copper to fibre, when copper profit is below the expected fibre profit. Since higher copper access charges increase profits from copper but leave fibre profits unaffected, high access charges for copper reduce the incentives for a switch.... High levels of copper access charges generate negative incentives for incumbents to invest into fibre because of profit cannibalisation.”¹⁷

- 3.25 So long as the copper network continues to be a cash cow for Openreach (and it faces no real prospect of losing significant market share), it has little reason to invest in new fibre networks. The status quo bears this out. As Ofcom has noted, Openreach made £4bn of excess returns over the last ten years, a period in which full fibre investment remained negligible.
- 3.26 A reduction in copper prices would mean that Openreach would have to make new investments in order to remain as profitable. Full fibre would provide the most obvious route, as Openreach would not face regulation on any full fibre investments it made. It could therefore continue to drive high returns, but only if it invests in the step-change technology the UK requires.
- 3.27 Placing significant price controls on legacy copper networks would therefore act as a significant pro-full fibre investment measure.

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¹⁷ P.7 ‘Wholesale Pricing, NGA Take-up and Competition’, WIK-Consult, Study for ECTA, 7 April 2011. Available at: https://www.ectaportal.com/images/pdf_liens/WIK%202011%20-%20Wholesale%20pricing%20NGA%20take-up%20and%20competition%20-%20Final%20Report%2011_04_07.pdf.