BT's response to Ofcom's discussion document

"Strategic Review of Digital Communications"

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Redactions are highlighted by use of the ✂ symbol

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Foreword

1. Ofcom's strategic review of digital communications is timely. This is an opportunity for Ofcom to fulfil its remit as a converged regulator by looking at the converging markets holistically and coherently, to make clear how it proposes to fulfil its duties regarding proportionate, consistent and targeted regulation. It is also an opportunity to provide the regulatory foundations on which providers can meet ever rising customer expectations across the whole industry.

2. It is now ten years since Ofcom accepted BT's offer of a new regulatory settlement in the fixed line sector as an outcome of its Telecommunications Strategic Review (TSR). Since then, the digital landscape has advanced dramatically. At the end of 2005, only 39% of UK homes had a broadband connection[1] and typical speeds during the year were 1Mbps.[2] Now, 83% of UK homes have access to superfast broadband[3] and average residential fixed line speeds are over 22Mbps.[4] In 2005, there were around 4.5 million 3G mobile subscriptions[5], and Ofcom reported that mobile data was just taking off[6]; by the end of 2014, there were 23.6 million 4G subscriptions[7], with average browsing speeds of 14.7Mbps.[8] Pay TV penetration has increased from 44%[9] in 2005 to c.57% in 2015.[10]

3. The industry has delivered these good outcomes in connectivity and broadband against a backdrop of constantly rising customer expectations and demand. Over 39 million people in the UK use the internet every day[11] and we spend more than 20 hours a week on-line.[12] Ofcom reported in its Infrastructure Report 2014 that the amount of data downloaded had increased by 93% in the previous year alone.[13]

4. Competition in the fixed line part of the industry has flourished, based on the functional separation of Openreach and access to its competition-ready network on an equivalent basis. Openreach supplies regulated products and services on an equivalent basis to over 500 Communications Providers (CPs).[14] International benchmarking shows that the UK has one of the most competitive broadband markets in the world. The mobile market is also characterised by a very high level of competition between MNOs and a large number of MVNOs.

5. The issues of investment in fibre broadband access were not directly considered in Ofcom's TSR but rather were addressed in 2009 when Ofcom introduced its regulatory framework for NGA, including the decision not to price regulate BT's wholesale fibre access product but to impose access to the infrastructure on an equivalent basis. This policy has been a resounding success, leading to what we believe is the fastest commercial rollout of fibre broadband anywhere in the world, a highly competitive retail market and strong investment by other players including Virgin Media and CityFibre. An independent report published recently by Analysys Mason and provided to Ofcom alongside this response shows that as well as being ahead of other major European economies for superfast broadband coverage and take-up, the highly competitive broadband market in the UK means we are set to close the gap with world-beaters like Japan and South Korea.

6. By contrast, Pay TV customer outcomes have lagged behind, and competition problems have not been addressed: Ofcom's December 2014 International Communications Market Report showed the UK had the second highest prices for premium Pay TV among the comparator countries; BT estimates that Sky's share of retail Pay TV subscription revenues has been in excess of 74% since 2004[15]; and switching rates in Pay TV are only 2%, the lowest of any of the communications markets surveyed by Ofcom.[16] Ofcom should seek to produce the same competitive forces in Pay TV that have benefited consumers and businesses in the broadband market. A lack of action brings the risk that unchecked market power in Pay TV will distort competition in the broadband market.

7. The industry needs to invest now to meet further substantial growth in customer expectations and demand over the next decade to 2025. BT has played a vital role by investing £20 billion of capital over the last 10 years in its networks.[17] £10.5 billion of that money has gone to Openreach[18], so that the whole industry, and the whole country, can benefit from a properly maintained and upgraded network, a

network that is open to all CPs wishing to provide voice and broadband services on equal terms. Openreach's investment in the access layer benchmarks favourably against its peers, with its last mile and aggregation capex being over 50% higher than the European average.[19]

8. BT stands ready to make further investments over the next ten years, subject to having a regulatory regime that continues to support the required investment and innovation by all operators. We need Ofcom to focus its regulation, to make long-term commitments, and to leave markets to operate. BT's investment will continue to be critical in driving improved customer outcomes and in underpinning the UK's digital economy for the benefit of all CPs and end customers.

9. Our vision for Britain's digital future, announced on 22 September, will see fibre extended beyond 95% of UK premises and 10 million homes and businesses enjoying access to ultrafast broadband at 300-500Mbps by the end of 2020. We stand ready to deliver 5-10Mbps universal broadband if Ofcom and the Government act to make such a commitment commercially viable, permit the technological innovation necessary and provide support on planning. We will also aim to achieve on-time installations for consumer customers of 95% by 2017.

10. Regulation should ensure customers' needs are met by supporting efficient investment and delivering effective competition across the whole of the industry, including Pay TV as well as communications. We believe that to fulfil its duties, set out in Section 3 of the Communications Act 2003, Ofcom needs to act in the six key areas set out below:

    - Long-term commitment: Ofcom should make long-term commitments in regulation to secure the long-term investments necessary to meet future customers' needs. An example here is Ofcom's very successful approach to regulating superfast fibre broadband access. All communications providers need policy certainty to invest with confidence.

    - Support for investment: The viability of long-term investments, the incentives to make them, and management of risk are critical issues. Ofcom should not price regulate services that depend on new investment before payback has been achieved. Ofcom itself recognises that vertical integration may provide vital investment coordination incentives, avoid the problem of investment hold-up and so facilitate major infrastructure projects. Britain has gained, and will continue to gain, from Openreach as a part of BT – benefiting from more investment, coverage and speed. Ofcom should reject calls for the structural separation of BT at the earliest opportunity.

    - Consolidation: To meet the challenges of declining revenues and rising investment demands, firms will look to consolidate to support investments and reduce costs. We believe Ofcom should support consolidation that promotes investment and competition.

    - Balance between service quality and price: Customers do not simply want ever cheaper broadband: they want faster, better broadband, with high service standards. We believe Ofcom should carry forward the model it adopted in the last Fixed Access Market Review and associated charge control, treating service as a third pillar alongside price and competition, and taking customers' service needs into account when setting price controls.

    - Level playing field: In a world where customers increasingly buy bundles of fixed, mobile and Pay TV services, we believe Ofcom needs to ensure a level playing field of competition across the whole industry and not allow disparities in regulation to distort market outcomes. Market power and customer problems should be addressed with vigour wherever they arise. Ofcom should focus its efforts on the problems in Pay TV, where competition has failed.

    - Regulate only where necessary: It is clear from Section 3 of the Communications Act 2003 that Ofcom should apply the minimum regulation necessary to ensure markets work for customers without distortion. We believe regulation should only be imposed at one level in any market, legacy products should be deregulated to encourage migration to modern alternatives, and regulatory duplication, such as the parallel equivalence requirements in the Undertakings and in SMP conditions under the market review framework, should be removed.

11. With the right regulatory regime, the communications industry will meet the challenges of the next decade, fulfilling the needs of consumers and businesses, driving the growth of the UK economy and supporting social progress for the whole country.

Market outcomes from 2005 to 2015

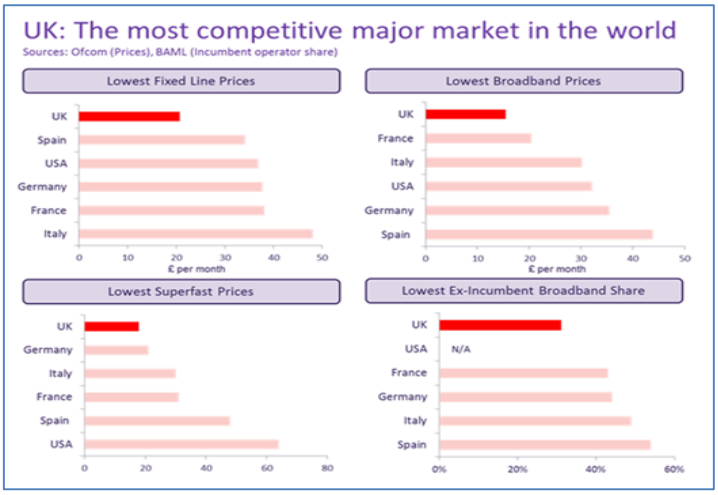
12. Outcomes in the UK broadband market have advanced greatly since Ofcom's 2005 TSR.

13. Broadband is central to the UK's economic and social life today. Superfast broadband is now available to around 83% of the population[20], and is expected to rise to 95% by the end of 2017. UK internet usage is higher than in any other large EU member state[21], and the UK internet economy forms a greater proportion of the national economy than in any other G20 country.[22]

14. Broadband is a more important choice criterion for customers in fixed than voice services, and Pay TV is even more important than broadband in triple play bundles[23] (which based on Ofcom's own data, went from 16% to 23% of the market in the three years to 2014[24]). These changes, such as the take-up of superfast broadband, reflect the increasing demand for and reliance upon digital communications. Reduced tolerance for downtime has driven an increase in demand for faster repair and provision.

15. It is generally accepted that UK outcomes in respect of broadband and mobile coverage and speeds compare favourably with other countries.[25] Competition in the UK also compares favourably with other countries. It is notable that BT has the lowest retail broadband share of any former incumbent in the major EU member states[26]. BT's share of retail fixed lines has fallen by 10.6 percentage points from 49.2% to 38.6% in the last four years, a decline of 21.5%.[27] Functional separation and equivalence have proved successful in promoting competition, as witnessed by the entry and growth of scale competitors using Openreach inputs. Sky and TalkTalk have come from nowhere in 2005 to accounting for around 40% of the retail broadband market now.[28] In effect they have become highly effective retail competitors.

Fig. 1: Price and market share comparisons



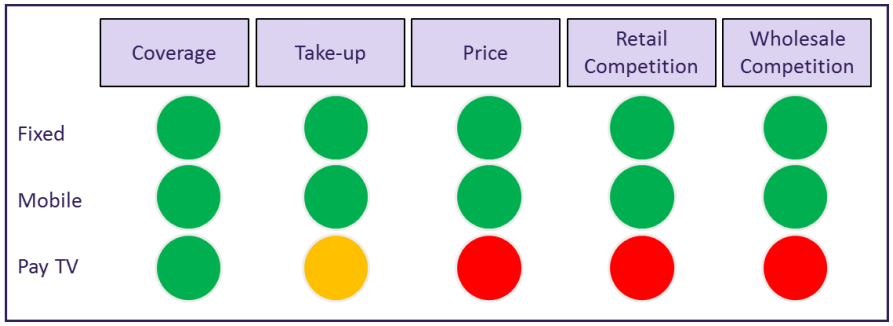
16. The international benchmarking report by Analysys Mason attached to this response shows the UK in top place among the 'Big 5' EU countries for superfast broadband coverage and take-up in terms of actual outcomes in 2014 and those forecast for 2020. It also shows the UK is set to close the gap and in some cases overtake world-beating countries like Japan and South Korea. The report attributes the UK's high scores to the fact that its fixed and broadband markets are so competitive.

17. In short, the case that the outcomes for customers and for competition have been unusually good in the UK compared to peer group countries is very strong.

18. However, customer and competition outcomes in respect of Pay TV in the UK are not strong and have not improved – prices are higher, and supply is extremely concentrated, with Sky having a share of

retail Pay TV subscription revenues in excess of 74% since 2004.[29] Ofcom's efforts to promote competition should be focused on this sector where competition has failed.

Fig. 2: BT's assessment of market outcomes in the UK



BT's vision for the market in 2025

19. Over the next decade, the enormous growth in demand for communications networks and services will continue. Currently, BT is seeing demand for data rising by 62% a year.[30] We confidently forecast, as most analysts do, that this growth will continue. Our central expectation is that average peak data demand per user will continue to grow at a rate of about 50% a year for the next decade.

20. Demand for communications is not confined to data volume growth. Consumers and businesses want the most capable networks (speed) to be available ubiquitously (coverage), both fixed and mobile. They expect high quality resilient access (resilience) and ubiquitous connection to all kinds of service and applications, particularly TV / content and IT service, often cloud-based, from all connected computing devices and capacity (convergence). Additionally, if networks are ever down or not available, customers are demanding increasingly rapid provision and repair times (service). Demand will be very strong across all five of these dimensions in coming years.

21. Despite this growth in demand, revenues in communications markets have been in steady decline, both in fixed and mobile.[31] This is due to a combination of technology change, regulatory intervention and competition constraining business models and monetisation. We expect these pressures will continue and industry revenues will continue to decline, or at best will be flat. The challenge for the industry and therefore for Ofcom is how to ensure that the investments necessary to meet customer needs can be made by commercially viable business cases funded from market pricing models, supported by further innovation and efficiencies, in the face of declining revenues, whilst ensuring that markets remain highly competitive as they are today. This, we believe, is the central question for Ofcom in its review.

22. In the consumer and business markets, cross-selling of fixed and mobile services will become more important, just as cross-selling has already become central in broadband and Pay TV in the UK residential market. It is likely that the traditional retail market definitions between fixed and mobile will blur as mobile and fixed services continue to develop and grow and substitution between the two increases. It is already evident that mobile voice calls are increasingly displacing fixed voice calls, such that the practice of separately defining markets for fixed and mobile voice calls is no longer, we believe, economically sustainable.

23. The industry will need to invest substantially going forwards to deliver a further leap forward in network infrastructure, competition and customer outcomes over the next decade. BT is committed to playing a leading role in this transformation, and on 22 September we announced a series of pledges including those set out below[32]:

1. BT stands ready to deliver minimum standard broadband speeds of 5-10Mbps to everyone in the UK so everyone can use modern digital services, if Ofcom and the Government take action to make this commercially viable.
2. We stand ready to expand the reach of fibre broadband in the UK beyond the current ceiling of 95% per cent in support of any further public funding scheme.
3. We will take the UK from a superfast nation to an ultrafast one. Our new ultrafast services of 300-500Mbps will reach 10 million homes and smaller businesses by the end of 2020. Our ambition is ultimately to extend ultrafast to most of the UK within a decade.
4. We will raise the bar on service, going beyond today's regulated requirements. We will aim to achieve on-time installations for consumer customers to 95% by 2017.

24. Alongside these pledges, Openreach has launched a Charter[33] setting out commitments to:
    - Aspire to go beyond the UK's 95% target for fibre broadband;
    - Work to provide people with the speed they need, including the proposal to give 10 million homes and businesses access to ultrafast broadband by the end of 2020;
    - Raise service standards, in particular offering quicker installations and faster repairs, and aim to do much better than the rising minimum service levels (MSLs) already set by Ofcom;
    - Continue to be a trusted partner to the CPs that Openreach serves, and demonstrate that it treats them all fairly and equally, including consulting with CPs on offering increased end customer contact with Openreach as well as the opportunity to input to service and product developments through a customer panel;
    - Continue to make a difference to society, not only through building Britain's connected future, but also through recruitment, including of former military personnel, apprenticeships and voluntary work; and
    - Invest to help sustain Britain's position as a leading digital economy.
25. BT can commit to these pledges as a single vertically integrated company, with Openreach as a functionally separate division, on the assumption that the policy environment is stable and supportive. Structural separation of BT, as proposed by some CPs, is not only unjustified based on an objective view of the evidence (explored in more detail below) but would lead to large-scale industry disruption and uncertainty that would undermine the feasibility of such major investment plans. These issues are discussed in detail in the reports on vertical integration and structural separation by RBB Economics, Plum Consulting and KPMG that have been provided alongside this report.
26. KPMG, for example, estimate that over the next ten years there should be significant benefit to UK consumers and businesses from BT's continued investments in access infrastructure and the services it supports. They estimate this to be worth at least £20-30 billion in direct GDP benefit alone. KPMG further note that structural separation of BT and the revised regulatory model it would require would be a major market intervention. They find that it is not clear that such a change would deliver the same level of economic benefits. Significant hurdles would need to be overcome for structural separation to be an effective remedy. They note that no other jurisdiction has successfully overcome these hurdles.
27. In the face of highly positive developments in customer outcomes and competition in fixed telecoms, which are without equal in the world, it is perverse that the question of structural separation of Openreach should be under consideration. We appeal to Ofcom not to be swayed by certain communications providers in the UK who are evidently motivated by self-interested corporate rivalry. There is no case for structural separation, no detriment to competition, no evidence that structural separation would lead to improved market outcomes, and no theoretical analysis to support such an agenda. Continuing to hold open the possibility of structural separation will put at risk the investments necessary to drive good customer outcomes in coming years. BT calls upon Ofcom to close down this question at the first opportunity.

Regulation from 2005 to 2015

28. Since 2005, some regulatory policy has been an enabler of competition, customer choice and investment. In fixed line, the foundations of policy have been functional separation, access to the Openreach network for all providers on an equivalent basis and no price regulation of wholesale fibre products.

29. The success of BT's superfast fibre broadband roll-out was made possible by the combination of our vision and boldness, investing during a recession at a time when many CPs are on public record as saying that they did not believe fibre broadband was needed (making their public positions now seem rather ironic), and a regulatory environment for fibre that allowed viable long-term business cases to be developed. The key feature of this environment is Ofcom's decision, despite imposing tough equal access to a risky investment, not to impose price controls on Openreach's Generic Ethernet Access (GEA) product set, but to mandate access on an equivalent basis: this has allowed BT to develop a commercial case to support its critical multi-billion pound investment of shareholder funds in Next Generation Access (NGA) at risk in a pro-competitive fashion.

30. Ofcom's approach has also thereby stimulated fibre investment by other providers. Virgin Media is investing £3 billion in extending the geographic scope of its network.[34] Other fixed providers have also undertaken significant investment, for example CityFibre, COLT, Gigaclear, KCom, Zayo, EU Networks and Vodafone. It is very important that Ofcom understands and takes a policy position on the importance of stimulating commercial investment in competition with Openreach. Its actions will determine whether they thrive or fail. In parallel, the mobile network operators have been rolling out their 4G networks. Giving EE an opportunity to gain a first mover advantage by liberalising the use of its 1800MHz spectrum was a key decision that has stimulated both EE and its rivals to deploy 4G networks rapidly.

31. The functional separation model has worked well, underpinning the positive market outcomes achieved, and Britain has gained from Openreach as part of BT. For example, BT provides Openreach with ready access to capital, and this has allowed the UK to benefit from what we believe to be one of the fastest superfast broadband roll-outs in the world. As part of BT, Openreach also has access to some of the world's most important telecoms research and development capability. As the UK's third largest R&D investor, spending over £500 million a year[35], BT has played a big role in driving innovation over the last decade. Openreach shares these benefits with the rest of industry by making its services available to all providers on the basis of equivalence of inputs (EOI).

32. The concerns over the current functional separation model set out in section 11 of Ofcom's discussion document are unfounded. The Undertakings have proved themselves as the most successful competition solution in the world. There are no better examples. BT has an excellent record of compliance with the Undertakings. Further, all the evidence suggests that structural separation would not be an effective or proportionate remedy to any of the concerns flagged in the discussion document and that it would make market outcomes worse and result in the UK losing its leading position among the world's digital economies.[36]

33. Although regulation has contributed to the good outcomes achieved over the last decade, some features of regulation since 2005 have not been successful, and Ofcom's policy in a number of important areas has not kept pace with the dynamics of the market and with changes in consumer demand.

34. Regulation has not adequately prioritised service improvement. In the last decade, Ofcom has taken £1 billion of profit out of Openreach in pursuit of lower cost networks. Only in the 2014 Fixed Access Market Review did Ofcom recognise that service quality was also important as well as lower cost. Customers do not want just ever cheaper broadband networks. They want better, faster, more reliable and more widespread networks and services, and these come at a price. Ofcom started to address this in the 2014 Fixed Access Market Review by building allowances for customers' service expectations into the associated charge control. We encourage Ofcom to continue to promote service improvement in

its future policies and charge controls, using its powers under the European Common Regulatory Framework (CRF).

35. However, with the proposed combination of a harsh charge control, mandated dark fibre, changes to cost allocations and remedies and challenging service level impositions proposed in the current Business Connectivity Market Review (BCMR)[37], Ofcom appears to be reversing this positive change. Ofcom's BCMR proposals represent a loss of [✂] revenues from Openreach in a three year period. A regime as draconian as this will be damaging to the service, quality and coverage provided by Openreach and will likely result in the elimination of network competition to Openreach.

36. The proposal to mandate dark fibre in the BCMR is ill-conceived. This remedy would be disproportionate, would damage customer experience, would not deliver the claimed innovation benefits, would cause substantial disruption in operational processes, would favour some CPs over the majority, would reduce investment incentives for BT and would undermine investment by other Ethernet network builders. The response to the BCMR consultation by the Infrastructure Investors Group[38] shows that other major investors, including Virgin Media, CityFibre and Zayo, share this view. We urge Ofcom to return to the key strategic questions: how does it promote investment in competition to Openreach, as well as by Openreach, and how does it promote improving service quality.

37. A priority area for Ofcom's attention, where regulation has not been successful, is Pay TV. As outlined earlier, Sky still has a share of retail market revenues in excess of 74%, a 62% share of retail market subscribers, and has sustained high shares for the whole of the last decade. The Competition Commission found competition in Pay TV to be ineffective. The wholesaling obligations imposed on Sky under the WMO (which is still subject to appeal) are too weak to address this market power. Sky's stranglehold on Pay TV has endured despite repeated attempts at regulatory intervention over 20 years. Pay TV is not characterised by scale new entry, as broadband has been, but by the regular elimination of competitors – Setanta, ESPN and Top-Up TV, ITV Digital and many others. BT's acquisition of rights such as the minority FAPL rights and UEFA Champions League has not fixed the problem. We have provided evidence to Ofcom that BT Sport is not capable of driving consumer platform choice for material numbers of subscribers. The evidence demonstrates that Sky's insurmountable advantages in Pay TV markets have the result that third party Pay TV retailers cannot compete effectively with Sky in acquiring Pay TV subscribers. We urge Ofcom to prioritise this obvious egregious example of customer detriment from the failure of competition.

Regulation in the next decade to 2025

38. To enable the industry to meet the challenges of the next decade, it is essential that Ofcom adopts the right regulatory strategies. The strategies that we believe Ofcom should adopt are outlined below.

Long-term commitment

39. Ofcom should make long-term commitments in regulation, so CPs can invest with confidence that they will be able to achieve the returns necessary to achieve payback on their risk capital in the shortest possible commercial timescales. This would provide policy certainty to underpin risky investments with long payback periods: a prime example is BT's investment case for NGA, which is 20 years long at the Openreach level, with payback after around 12 years. Its next NGA business case will need to be assessed over a similar timeframe.

40. Ofcom needs to take forward-looking policy positions as it has done in the past (in 2005 and 2009), in order that commercial investors may invest with reasonable confidence. Ofcom's policy approach on NGA to date shows that long-term commitment is consistent with and achievable within the CRF, despite its mandated three-year market review cycle. At the same time, it is crucial that Ofcom stands by long-term policy commitments it has made in the past. Otherwise policy commitments it makes in the future will lack credibility.

Support for investment

41. As our pledges announced on 22 September show, BT hopes to be able to make positive business cases for further billions of pounds of discretionary fibre and copper investment in broadband and Ethernet in the next five years. However, these depend on a supportive regulatory approach.

42. This approach should include pricing flexibility, with no charge controls for services that depend on new investment at least until payback has been achieved. Excessively onerous charge controls will undermine BT's case for investment and the business cases of other investors.

43. Ofcom should also recognise that vertical integration provides vital investment incentives which facilitate major infrastructure projects. A share of end-to-end margins is essential to support bold network investment cases. BT's downstream retail operations can de-risk investment for Openreach in various ways which could not be replicated in a separated organisational structure. This is one reason why Openreach should be kept as an integral, though functionally separate, part of BT. It would be irrational and unwarranted for Ofcom to even contemplate structural separation of BT (as set out in detail in the main body of our response). In the few markets where it has been adopted this model has delivering manifestly poorer outcomes than the UK and has typically been implemented following a decision by the Government to massively subsidise fibre roll-out. This is not a model that the UK should adopt.

Consolidation

44. In the face of significantly growing demand, yet declining revenues, CPs are often motivated to look at ways to transform their costs and to support their investment cases through consolidation. Experience in fixed telecoms over the last ten years shows that consolidation can strengthen competition and improve customer outcomes, and Ofcom should support consolidation that promotes investment, innovation and competition, and should adapt its regulatory interventions as may be necessary to support these outcomes.

Balance between service quality and price

45. Service is a shared responsibility between CPs and Openreach, and both parties' service performance has an impact on customers. Openreach provides the access and backhaul network CPs depend on, but at the same time CPs are able to differentiate on top of these regulated inputs. This is evidenced by Ofcom's quarterly complaints reports, which show varying level of complaints for providers which use the same inputs from Openreach to serve their customers. To improve end customer outcomes, which has to be Ofcom's objective, all parties in this value chain need to be incentivised to play their part.

46. We believe that Ofcom should recognise the impact of its regulatory policies on service outcomes. It is not just a matter of the activities of industry providers freely chosen but of those providers constrained by regulation. At the Openreach level, Ofcom should carry forward the model it adopted in the 2014 Fixed Access Market Review, treating service as a third pillar in reviews alongside price and competition, and taking customers' service needs into account when setting charge controls.

47. At the downstream retail level, Ofcom should consider options to increase transparency for consumers and accountability for providers.

Level playing field

48. As take-up of converged bundles grows, it is essential that customer choices, market outcomes and competition are not distorted by asymmetric regulation. One of the most effective things Ofcom could do to drive a level playing field in the retail market is to ensure that the same rules and processes for marketing and migration, including frictionless switching processes, are imposed on all competitors, in particular prioritising the application to cover Pay TV. Consumers would benefit from the certainty and simplicity of a harmonised switching process across the bundle, which in turn will support competition in bundles. In particular Ofcom should act now to remove the save opportunity currently available to cable and Pay TV operators. Ofcom's competition policy must as a minimum provide for a level playing field in the retail market, or consumers will suffer from inferior outcomes.

49. Ofcom has extensive powers to regulate telecommunications markets under the CRF. In particular, the rigorous market review process requires and empowers Ofcom to identify and address competition issues. We believe its powers under the General Conditions can be fully used by Ofcom in application to retail Pay TV conduct.

50. However, in contrast to communications, Ofcom's powers to deal with competition issues in Pay TV holistically are weak. Huge competition problems remain unresolved. The Competition Commission found in its August 2012 decision[39] that competition in the overall Pay TV market was not effective due to the very high and stable level of concentration, low level of switching, barriers to entry and absence of countervailing buyer power. However, corrective action has still not been taken. Policy for digital communications should recognise that Pay TV is characterised by permanent features giving rise to adverse effects on competition which are beyond Ofcom's powers to resolve. We believe it should be Ofcom's top priority to remedy these obvious market failures, and indeed BT struggles to see reasons not to put this at the top of the agenda. Unchecked, there is a real danger that Sky's market power in Pay TV will distort competition in the broadband market to the detriment customers, even more than today.

Regulate only where necessary.

51. Ofcom should only impose regulation where it is essential to make markets work for customers without distortion. However, as Ofcom highlights in the discussion document: i) existing regulation has built up over time; ii) it is easier to add regulation than remove it; and iii) the Digital Communications Review is an opportunity to challenge the need for existing regulation. We believe this is a golden opportunity for Ofcom to eliminate all regulation that is no longer needed.

52. We believe Ofcom should remove all regulation that:
    - Duplicates other regulation: for example EOI obligations in the Undertakings, which are unnecessary now that Ofcom imposes EOI obligations as remedies for Significant Market Power (SMP) under the market review framework;
    - Conflicts with each other or creates margin arbitrage opportunities: for example proposals to impose two EOI products closely adjacent in the same Ethernet value chain (dark fibre and active remedies) will result in margin arbitrage and conflict;
    - Deters investment: for example the proposed dark fibre remedy in the BCMR, which many stakeholders in addition to BT believe will damage their incentives to invest in new infrastructure;
    - Has become unnecessary as a result of technological and market change: for example regulation of fixed call origination in the era of mobile and over the top (OTT) voice services, or the inclusion of obligations around public payphones in the Universal Service Obligation (USO) regime;
    - No longer reflects the reality of competition: for example Ethernet in major city business districts across the UK, where there are numerous competing networks;
    - Risks prolonging the life of legacy services and hindering migration to more efficient modern alternatives, for example regulation of traditional interface leased lines, ISDN2 and ISDN30.

Stakeholder concerns and allegations reported in Ofcom's document

53. While much of Ofcom's discussion document is a balanced account of the good market outcomes for customers and competition, section 11 regarding the regulation of vertically integrated enterprises raises a large number of concerns about BT and Openreach, which are not balanced or substantiated and do not amount to a dispassionate evidence-based analysis of the situation. We regret to see this, and regret having to rebut these concerns in forceful terms in what follows. It is not obvious to BT why BT's vertical integration, which is extremely highly regulated and driving good competition and customer outcomes, is the exclusive focus of discussion in this section, when Sky's vertical integration, which is completely unregulated and driving very poor competition and customer outcomes, is not considered.

54. Ofcom puts forward allegations made by some other stakeholders that BT still has the ability and incentive to direct Openreach to discriminate in favour of downstream BT, despite the functional separation of Openreach and access to its networks on an equivalent basis. BT strongly rejects this allegation, and points to the facts that it is not consistent with Ofcom's own market review analysis and to reality, that BT's conduct clearly demonstrates its incentives and efforts to secure wholesale margins in a non-discriminatory manner. No evidence is put forward to support any of the charges made.

55. It is also alleged that Openreach can discriminate between downstream BT and other CPs. Again, we strongly reject this allegation. Openreach cannot discriminate between downstream BT and other CPs, because its services are provided to all CPs on an equivalent basis, because it is functionally separate and because it is subject to a panoply of regulation imposed by Ofcom. BT therefore has no ability to act on any alleged incentive to discriminate at the Openreach level. The fact that BT competes vigorously at both the Openreach and BT Wholesale level, well beyond any regulatory obligation, is evidence that its incentives are not to discriminate but to grow revenue profitably at every opportunity, in a manner that is consistent with all its publicly stated strategies.

56. In addition, BT is clearly mindful of its regulatory obligations not to discriminate and takes regulatory compliance extremely seriously. If CPs felt that discrimination had taken place, they would have raised a formal dispute or complaint with Ofcom. Only one such case has been raised and was rejected by Ofcom. A lack of evidence that BT has discriminated in this area strongly supports our contention that BT does not have the ability to discriminate.

57. It is alleged that Openreach has under-invested. This is unfounded. First, BT is by far the largest investor in the UK communications market: our total capital expenditure on tangible assets over the last seven years has totalled around £14 billion, whilst we estimate that the comparable figure for Virgin Media, Sky and TalkTalk taken together comes to between £6 and £7 billion.[40] Second, investment in Openreach has averaged over £1bn per annum[41], and Openreach's annual capital expenditure has increased from 33% to 47% as a proportion of total BT Group capital expenditure since functional separation was introduced.[42] BT does not just invest in infrastructure, it also invests in service innovation. NGA includes fibre-to-the-cabinet (FTTC) and fibre-to-the-premises (FTTP) products, which were developed by Openreach in response to demand for higher broadband speeds. We use many patented processes invented by BT in our FTTP deployment. We intend to continue this innovation with G.Fast deployment and with further innovation to improve the cost efficiency of FTTP. The fact that BT's investment has been critical in driving network performance in the UK from the bottom to the top of the league tables among our European peers does not suggest a lack of investment: it is a strong case for the opposite.

Fig. 3: Investment Capex

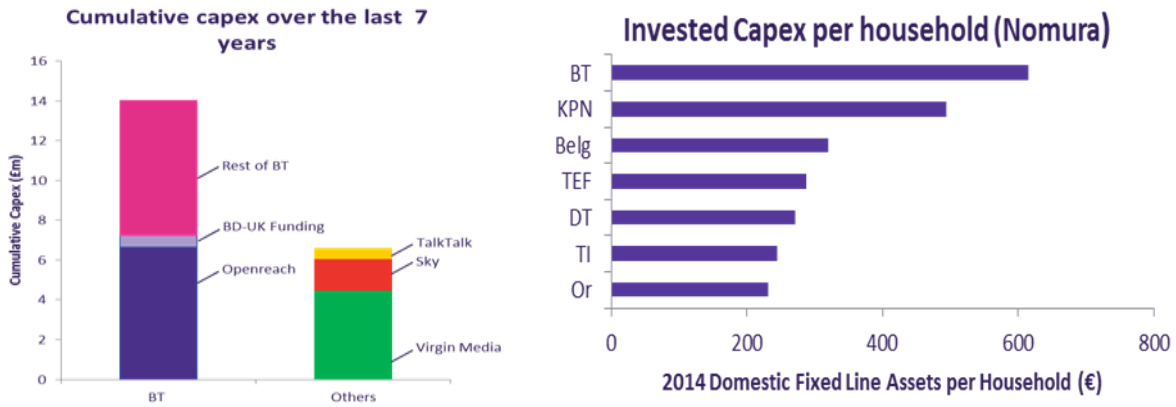
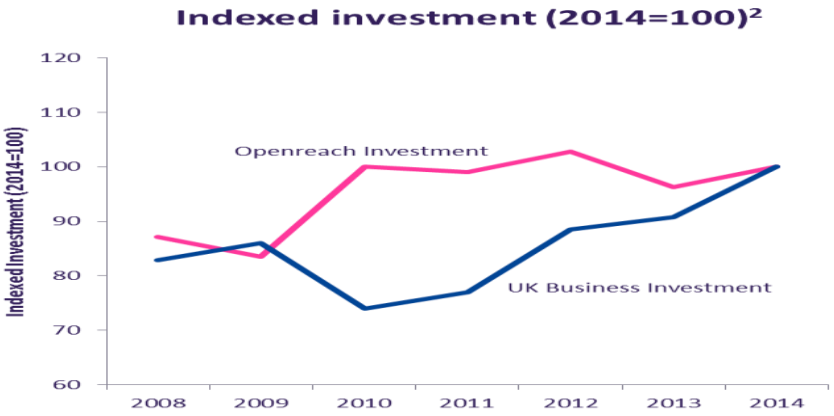
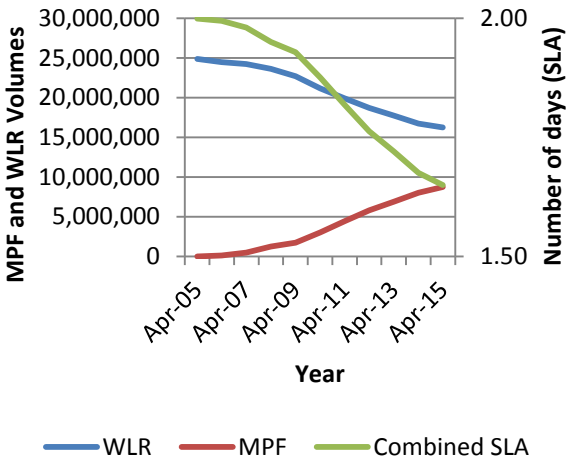


Fig. 4: Openreach continued to invest while UK business investment fell in 2010 and 2011



58. It is also asserted that Openreach has failed to deliver service standards. This is inaccurate and misrepresentative. BT and Openreach aspire to continue to meet customers' ever-rising expectation aspirations and deliver better service standards. However, for nine out of the last ten years, Ofcom's copper charge controls have prioritised lower prices over better service. Despite this, fault rates in the copper access network have been reduced by 16% over the life of Openreach.[43] The rapid growth of MPF in ten years has fundamentally shifted repair service levels agreements from 'next day plus 1' to 'next day', reducing average repair service level agreements (SLAs) from 2.0 days to 1.65 days, a speed of improvement of 17.5%.[44] Moreover, following Ofcom's imposition of a more balanced charge control to take account of service quality, Openreach exceeded all 60 of the imposed service quality requirements in 2014/15 and aims to do much better than the rising standards set for 2015/16. There is no evidence that other CPs have been disadvantaged relative to BT downstream. Indeed, given the product mix, BT's downstream consumer operations are disadvantaged relative to the large third parties because they use Openreach products that have lower services levels than other those used by other CPs.

Fig. 5: Openreach service performance - Repair SLA and all 60 service targets met (openreach.co.uk)



Openreach performance in 2014-15 for the Provision on-time Minimum Standard. The 2014/15 Minimum Standard is 89%			Openreach performance in the 2014/15 for the FAD Minimum Standard. The 2014/15 Minimum Standard is 54%			Openreach performance in 2014/15 for the Repair on-time Minimum Standard. The Minimum Standard is 67%		
Region	Product	Year End Result	Region	Product	Year End Result	Region	Product	Year End Result
Scotland	WLR	92.2	Scotland	WLR	86.3	Scotland	WLR	72.9
	MPF	94.7		MPF	88.7		MPF	74.6
Northeast	WLR	93	Northeast	WLR	96.5	Northeast	WLR	75.9
	MPF	94.7		MPF	97.5		MPF	74.6
North West	WLR	92.3	North West	WLR	99.2	North West	WLR	76
	MPF	94.3		MPF	99.8		MPF	74.5
Nw & NM	WLR	91.5	Nw & NM	WLR	96.8	Nw & NM	WLR	72.4
	MPF	93.3		MPF	97.7		MPF	72.3
SW & SM	WLR	92	SW & SM	WLR	92.9	SW & SM	WLR	77
	MPF	94.3		MPF	93.5		MPF	76
Wessex	WLR	92.3	Wessex	WLR	94.9	Wessex	WLR	75
	MPF	94.6		MPF	95.7		MPF	75.7
South East	WLR	92.6	South East	WLR	97.2	South East	WLR	78.7
	MPF	94.8		MPF	97.3		MPF	75.4
London	WLR	92.8	London	WLR	97.5	London	WLR	79.7
	MPF	94.8		MPF	97.2		MPF	76.4
East Anglia	WLR	93.5	East Anglia	WLR	98.8	East Anglia	WLR	77.2
	MPF	95.2		MPF	99.3		MPF	75.7
N. Ireland	WLR	91.9	N. Ireland	WLR	99.4	N. Ireland	WLR	85.7
	MPF	93.6		MPF	100		MPF	85.1

Conclusions

59. **Digital communications is a British success story.** The UK is already ahead of its European peers on superfast broadband coverage, take-up and average speeds and has one of the most competitive broadband markets in the world. Wholesale access products are more widely available in the UK and at lower prices than in comparable economies.[45] We have the largest digital economy in the G20 measured by percentage of GDP, and more of our GDP is generated from the internet than in any other country.[46]

60. **BT has played a major role in this success.** We have invested £20 billion in the last ten years[47], of which £10.5 billion has been invested by Openreach to maintain, repair and upgrade the access network. Our R&D budget of £500 million a year delivers innovations that keep the UK ahead, such as the G.Fast technology we will use to deliver ultrafast broadband.

61. **We are now at a critical point in the development of the UK as a digital nation.** Consumers and businesses are already driving increasing demand for data. This trend will accelerate as new data-hungry technologies and applications enter the mainstream over the next decade. There are already over 40 million devices in the 'Internet of Things' in the UK, and this is forecast to grow, with more than a billion daily transactions by 2022.[48] Speed and network reliability will be absolutely essential to the functioning of society and the economy.

62. **BT is committed to playing a leading role in delivering this transformation.** We have pledged, subject to regulatory support, to deliver minimum broadband speeds of 5-10Mbps to everyone, to extend superfast broadband beyond the current ceiling of 95% of UK premises in support of any future Government funding scheme, to roll-out ultrafast broadband to 10 million homes and businesses by 2020 and the majority of the UK by 2025 and to raise service standards, with faster installations and repairs.

    Ofcom also has a leading role to play. By adopting the regulatory approach that we propose, it can create an environment that gives customers the high speed, high quality services they need and maintain the UK's position as one of the world's top digital economies. If this is the outcome of the Digital Communications Review, Ofcom will have achieved its aims.

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[1] Ofcom, 'The Communications Market 2006, para 3.3.13

[2] Ofcom, 'The Communications Market 2006, para 3.4.11

[3] Ofcom, 'The Communications Market 2015, para 4.1.4

[4] Ofcom, 'UK fixed-line broadband performance November 2014', para 1.1

[5] Ofcom, 'The Communications Market 2006, para 3.2.7

[6] Ofcom, 'The Communications Market 2006, para 3.4.9

[7] Ofcom, 'The Communications Market 2015, para 4.1.2

[8] Ofcom, 'The Communications Market 2015, para 4.1.2

[9] Ofcom, 'International Communications Market Report 2011', fig 3.36

[10] BT estimate for Q1 2015, based on published information

[11] ONS, 'Statistical bulletin: Internet Access – Households and Individuals 2015'

[12] Ofcom, 'Adults' media use and attitudes – Report 2015', para 4.2

[13] Ofcom, 'Infrastructure Report 2014', para 3.1

[14] Openreach, https://www.Openreach.co.uk/orpg/home/aboutus/aboutus.do

[15] Source: Total pay TV subscription revenues: Ofcom Communications Market Reports 2009 (figure 2.13, page 165) and 2015 (figure 2.22, page 82). Sky retail subscription revenue and Sky broadband base: Sky Annual Report 2014 (pages 137-138) and Sky Annual Report 2010 (pages 111 112). Sky retail broadband revenues calculated from Sky broadband base and BT estimate of Sky broadband ARPU.

[16] Ofcom, 'The Consumer Experience of 2014', page 163, figure 157

[17] BT Group plc Annual Reports 2006 to 2015

[18] BT Group plc Annual Reports 2006 to 2015

[19] BT calculation based on AT Kearney Global Competitive Benchmarking Report 2013

[20] Ofcom, 'The Communications Market 2015', para 4.1.4

[21] Ofcom, 'The European Broadband Scorecard February 2015'

[22] Boston Consulting Group, May 2015

[23] Incite customer research for BT June 2014

[24] Ofcom, 'The Consumer Experience of 2014', para 7.1.1

[25] For example, Ofcom 'Strategic Review of Digital Communications Discussion Document' para 4.10

[26] Analysys Mason Fixed Broadband Quarterly Metrics – September 2014

[27] Ofcom, Telecommunications Market Data Tables Q1 2011 and Q1 2015

[28] Enders Analysis, 'UK broadband, telephony and pay TV trends Q2 2015'

[29] See endnote 16

[30] BT internal data

[31] Ofcom 'The Communications Market 2015, para 4.1.1

[32] BT press release at http://www.btplc.com/News/#/pressreleases/bt-ceo-delivers-vision-for-britain-s-digital-future-1222020

[33] Openreach, http://www.homeandwork.Openreach.co.uk/Our-responsibilities/

[34] Virgin Media, http://about.virginmedia.com/press-release/9467/virgin-media-and-liberty-global-announce-largest-investment-in-uks-internet-infrastructure-for-more-than-a-decade

[35] BT Group plc Annual Report 2015, page 34

[36] See Section 4.7 of this response

[37] Ofcom, 'Business Connectivity Market Review – May 2015' and 'Business Connectivity Market Review: leased lines charge control and dark fibre pricing'

[38] http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-2015/responses/IIG.pdf

[39] Competition Commission, 'Movies on pay TV market investigation - A report on the supply and acquisition of subscription pay-TV movie rights and services'

[40] Excludes capex on intangible assets for both Sky, TalkTalk, Rest of BT and Openreach. Virgin Media based on property and equipment additions that appear in consolidate cash flow statement. Data based on full years accounts: Virgin Media based on 31/12 year end accounts and covers the period 1/1/2008 to 31/12/2014, Sky based on 30/6 year end and covers the period 1/7/2007 to 30/6/2014; BT based on 31/3 year end and covers the period 1/4/2008 to 31/3/2015; TalkTalk based on 31/3 year end and covers the period 1/4/2007 to 31/3/2014.

[41] BT Group plc Annual Reports 2006 to 2015

[42] Derived from BT Group plc Annual Reports 2006 to 2015 and published KPIs

[43] Openreach internal operational data

[44] Openreach internal operational data

[45] Analysys Mason, 'International benchmarking report' (attached to this response)

[46] Boston Consulting Group, May 2015

[47] BT Group plc Annual Reports 2006 to 2015

[48] Ofcom, 'Promoting investment and innovation in the Internet of Things - Summary of responses and next steps', January 2015

2. Introduction

1. The first part of the main body of our response, Section 3, first gives more detail of the UK market outcomes over the last decade outlined in the Executive Summary. It then sets out our vision for how Britain can secure its digital future and maintain its position as the leading digital economy in the G20. Making this vision become a reality is the key challenge for Ofcom's review and requires a supportive and predictive regulatory framework that gives industry the confidence to make the investments required.
2. The rest of the main body of the response, Section 4, sets out our comments on key issues raised in the discussion document and our answers to Ofcom's questions. The sub-sections dealing with answers to questions correspond to sections of the discussion document: for example section 4.2 is our response to section 6 'Widespread availability of services' and it includes our answers to Ofcom's questions 1 and 2.
3. The final part of the response document consists of five annexes providing further evidence to support our response:
    - The first two annexes provide evidence that demonstrates BT's record of compliance with the Undertakings and addresses and rebuts allegations over the current model of functional separation that were made in Sky's initial submission to Ofcom;
    - The next two annexes assess Ofcom's powers in respect of functional and structural separation and list the provisions of the BT Undertakings that we believe should be removed to reflect changes since 2005;
    - The final annex gives an overview of the SME market in the UK, where Ofcom found in a review earlier this year that here was "a renewed competitive focus …with a range of existing and new providers competing for market share".
4. Finally, we are providing alongside our response four reports by independent consultants. The key findings in the reports are summarised below:

Analysys Mason: "*International benchmarking report*"

- The UK has one of the most advanced and competitive broadband markets in the world.
- It shows that as well as being ahead of other major UK economies for superfast broadband coverage and take-up, we are set to close the gap and in some cases overtake word-beaters like Japan and South Korea.
- The good outcomes in the UK are largely attributable to the competitiveness of the market.

RBB Economics: *"Vertical integration of Openreach – the impact on competition and investment"*

- RBB explain the benefits for new investment of having an "anchor tenant", i.e. the role that BT's downstream operations have in relation to Openreach in the current mode. These benefits include co-ordination, lower investment risk and avoidance of "hold-up" issues.
- RBB explain how these benefits apply to BT's superfast broadband roll-out and, by implication, would be recognised in other new investments.
- These benefits would be in jeopardy if reliance was put on contracting between independent parties if Openreach was separated from the rest of the Group. The extent of uncertainty and complexity would make contracts hugely challenging to write and enforce, leading to the problem of contractual incompleteness, and investment is likely to suffer as a result.

Plum Consulting: "*This connect'd Isle: building on success in digital communications*"

- The outcomes from fibre roll-out in the UK have been excellent, especially compared to fibre roll-out programmes in Australia and New Zealand, which have involved structural separation and supported by substantial Government subsidy. Australia is now reversing its

government-driven FTTP policy and moving to a hybrid model more in line with that in the UK.

- There is no evidence that consumers require the very high speeds which FTTP can deliver but which G.Fast cannot.
- Structural separation would be likely to slow down the pace of fibre delivery. Policy in the UK should continue to encourage commercial deployment of access upgrades, and concentrate on extending coverage.

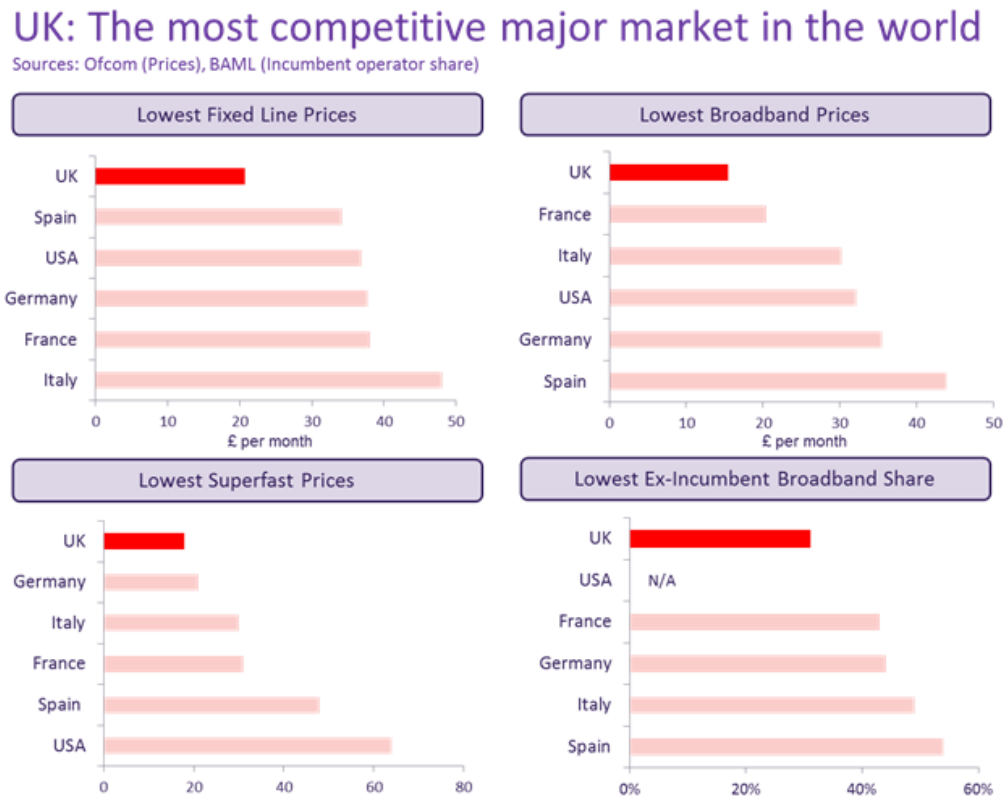
KPMG: *"Delivering Britain's Digital Future: An Economic Impact Study"*

- Contracting arrangements under structural separation would make it very difficult to realise anchor tenant benefits under EoI and non-discrimination: as a result, there would be a higher risk for Openreach's new investments and incentives for upstream investment would be harmed.
- This means that Ofcom would need to allow discrimination to make contracting work better. However, this would benefit large downstream providers and disadvantage small providers, thereby reducing competition and the prospects for new entry.
- The investment at risk is significant, and the wrong approach would have serious consequences for the UK. Based on broadband line speed projections that BT provided KPMG for a future both with and without G.Fast, KPMG estimate a benefit from higher investment of £20-30 billion in additional GDP and other benefits and increased consumer surplus of £5-15 billion by 2025.

3. BT's view of the market today and our vision for 2025

3.1 Market overview

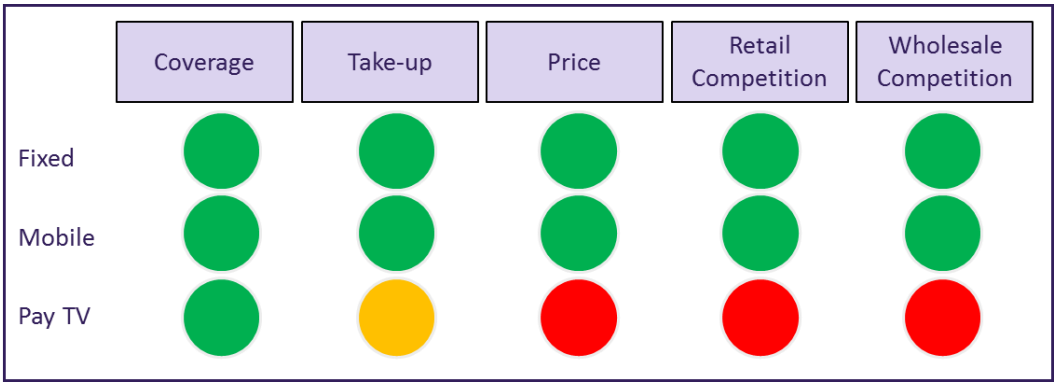
Consumers in the UK benefit from effective competition between suppliers utilising high quality communications infrastructure. In terms of price, choice, coverage and many other factors, the UK performs extremely well[1]; the UK leads Western Europe and the US on most performance measures used by Ofcom.



Ofcom's policy of regulating for competition – using functional separation and equal access remedies – helped provide the environment in which competition has flourished. It is the most successful arrangement for promoting competition that we are able to identify in the world.

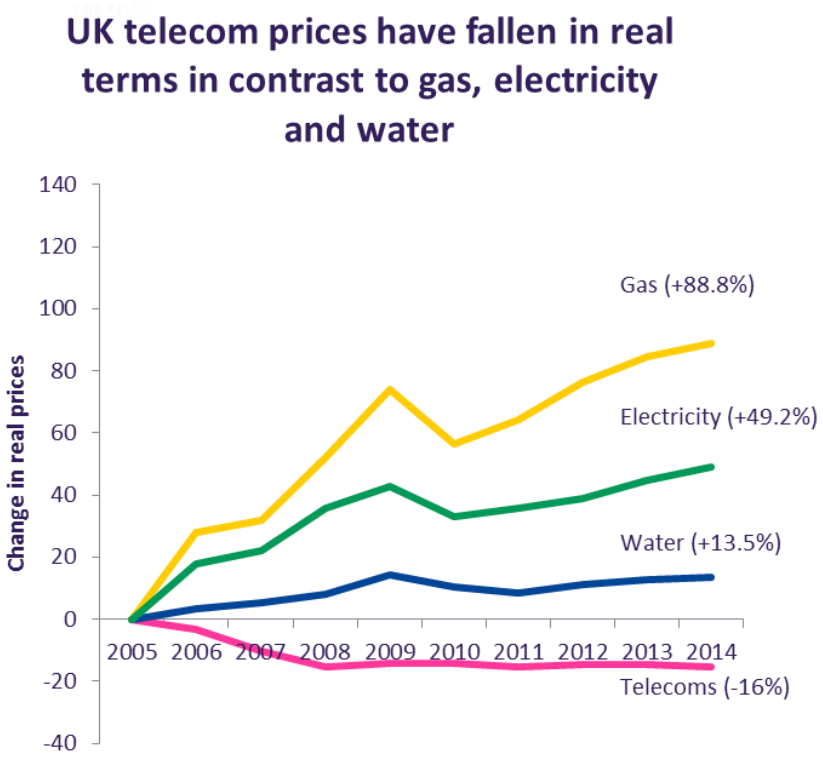
However, Pay TV is the exception and the principal area where regulation has so far failed to address market failure. Sky's stranglehold on Pay TV has endured for 20 years despite repeated attempts at regulatory intervention over the period. Sky continue to hold a dominant position at the wholesale and retail level of the Pay TV market and problems in Pay TV are bleeding into communications markets due to asymmetric regulation, e.g. distorting competition for bundles.

[1] Source: Ofcom, International Communications Market, December 2014



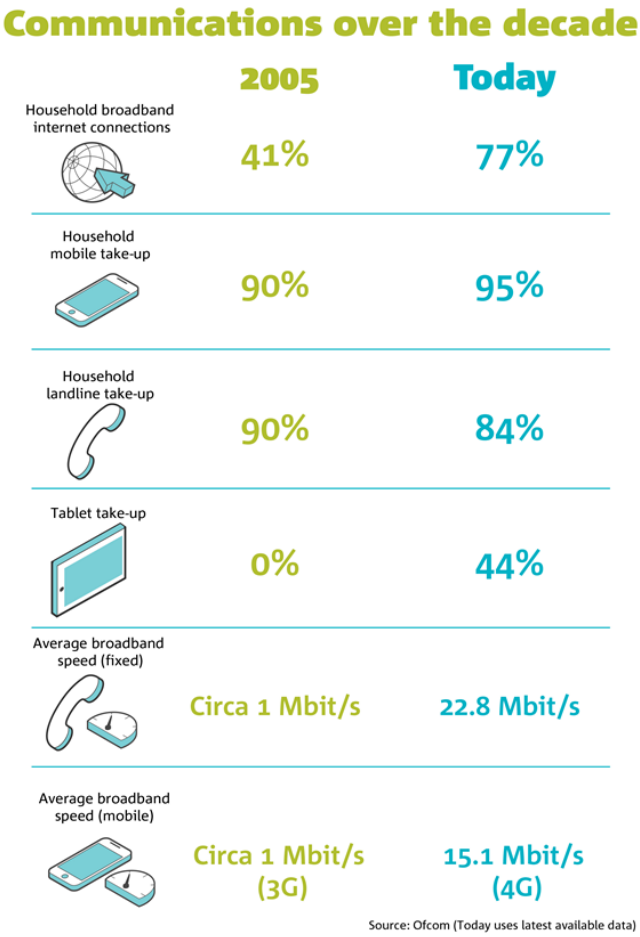
Market and consumer outcomes

In the decade following Ofcom's first strategic review market and consumer outcomes have been good. The fixed telecoms market has continued to deliver leading products at low prices, the result of increasingly vigorous and sustainable competition relative to other industries.



Source: ONS

Not only have prices fallen in real terms, the value customers derive from their products has significantly increased. UK telecoms prices have fallen by 16% in real terms since 2005. Speeds have increased more than twenty-fold.



Ofcom research in 2014 echoed the ONS findings, stating that, "overall UK communications service prices compare favourably to France, Germany, Italy, Spain and the US", adding also that, "the UK's low prices were mainly due to it having low prices for mobile and fixed broadband services."

In respect of broadband, the UK market has also delivered very positive market outcomes. For example, Ofcom's discussion paper notes that the average price of a residential fixed broadband package has fallen by 40% in real terms between 2004 and 2014 (para 1.3). Indeed, a review of the existing research and data illustrates that the UK market enjoys:

- Amongst the lowest priced broadband services[2];
- Amongst the lowest priced superfast broadband services; and
- Leading superfast broadband coverage.[3]

While prices have reduced in real terms consumption of data has soared; average fixed data usage has risen from 2Gbps per person per month in 2008 to 11Gbps in 2013.

Broadband service levels also compare well to other international markets. Ofcom's own research finds UK broadband consumer satisfaction at similar levels to other leading markets with "over three quarters of UK fixed broadband users satisfied with their service". However, BT anticipates ever rising

[2] Lowest available fixed-line broadband pricing. Source: Ofcom, International Communications Market, December 2014

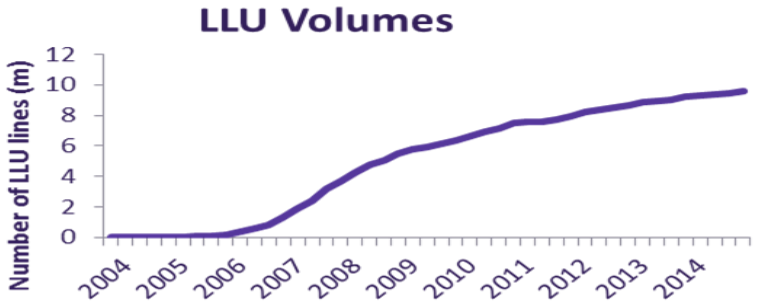
[3] Source: Ofcom, European Broadband Scorecard Q1 2015

broadband service expectations and believes the industry will need to continue to drive performance improvement in this area.

Regulating for competition

Ofcom's policy of regulating for competition – based on functional separation and addressing identified market failures through (local) access type remedies – has helped fostered highly competitive fixed and broadband markets in the UK. For example, Ofcom data shows that BT has, by a considerable margin, the lowest share of fixed broadband lines of any EU5 country former incumbent.

Since 2005, the number of unbundled copper lines has grown to over 8.5 million.



Communications providers also have access to VULA and Openreach ducts and poles (PIA) from which alternative and competitive next generation access networks can be deployed. There is further competition from Virgin Media (VM) over a large proportion of the market (measured in terms of geography and population), although (and unlike BT) VM do not offer wholesale access to their network. VM are expanding their network with the largest investment programme for a decade or more, £3 billion to extend to 4 million further premises. There is also increasing and substantial investment in fibre broadband access by companies such as CityFibre.

Consumer outcomes supported by competition at the wholesale level

The UK model of a functionally separate Openreach supplying regulated products and services on equal access terms continues to provide a good basis for competition and the UK market. Openreach currently serves 535 communications providers (CPs). All these CPs – including downstream BT – receive an EOI (exactly the same) level of service, pricing, non-pricing terms and conditions, information and confidentiality.

The large number of competitors, the low (internationally benchmarked) prices and also downstream BT's low market share, confirm that competition in the fixed and broadband markets is vigorous.

A healthy and appropriately regulated wholesale market offering a level playing field is essential for competition to flourish. This is the role delivered by Openreach. The fact that two companies, Sky and TalkTalk have entered the retail market and come from nowhere in 2005 to account for around a 40% market share in ten years since the Undertakings is ample evidence of the strength of retail competition and the success of equal access. Vodafone's recent market entry into the fixed consumer market and entry by players such as Fleur Telecom into the business market shows that market entry remains a viable prospect.

Openreach itself faces substantial and growing competition from a range of infrastructure providers. Virgin Media (VM) serves consumers and businesses within its footprint, with both VM and Openreach innovating to improve broadband delivery and reduce costs. Providers like CityFibre and Gigaclear focus on deploying optical fibre in specific markets. Other operators such as COLT and C&W/Vodafone, offer access and other services to business customers.

Wholesale access products are necessary but not the only component supporting competition across the value chain. Smaller scale CPs and new entrants may also need to utilise additional network services including transmission, network management, interconnect and other services. BT Wholesale provides these services to communication providers in both the fixed and mobile markets. However, BT Wholesale faces competition from other wholesalers such as C&W/Vodafone, Gamma and Magrathea as well as other large competitors who provide their own network services, such as TalkTalk and Sky.

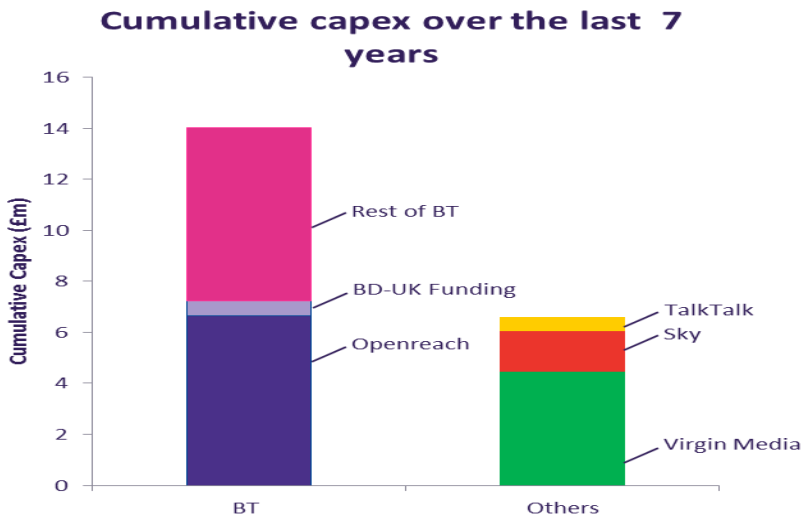
In summary, competition in wholesale communications markets – over varying forms of infrastructure – is thriving:

- Competition in access exists between Openreach and Virgin Media over a large proportion of the market – this proportion is growing as a result of Virgin Media's announced network expansion. Other infrastructure providers and wholesale suppliers, such as COLT, Gigaclear, HyperOptic, and Vodafone offer competitive services, over a growing, proportion of the market. Openreach also faces competition from wireless products; over 10% of households are mobile only.
- Communication Provider competition for consumers and business is intense. Over 500 CPs offer a variety of products and services, often using Openreach and BT Wholesale inputs to a greater or lesser extent, depending on their own business model. Vodafone is the latest major communications provider to enter the (fixed) broadband market (using Openreach access products).
- Application Provider competition is similarly intense and effectively global. Alternative over the top (OTT) products like VoIP services, instant messaging and conferencing are now offered by a wide range of competitors, including global players like Apple, Google, Facebook and Microsoft.

Investment, innovation infrastructure and service

Central to the positive market outcomes achieved in fixed and broadband has been large scale investment. BT has played a vital role by investing £20 billion of capital over the last 10 years in our networks. £10.5 billion of that money has gone to Openreach, so that the whole industry, and the whole country can benefit from a properly maintained and upgraded network. A network that is open to all CPs wishing to provide voice and broadband services.

BT is by far the largest investor in the UK communications market. Openreach alone, for example, has invested more than all the other major fixed operators combined over the last seven years.



Source: BT calculations based on published accounts

BT has also invested considerably in service innovation. As the UK's third largest R&D investor, BT spends over £500 million a year. In short, this delivers the technology that keeps the UK as one of the most vibrant digital economies in the world.

Moreover much of this innovation is made available to all CPs on an EoI basis. Examples include:

- Fibre/SFBB. When the original investment decision was taken non-BT CPs were saying that they did not think their customers needed fibre. However as soon as it was launched the product was available to them on a fully EOI basis. They were slow to take it up initially, but are now reaping the benefits.
- G.Fast is a world-leading innovation now being piloted by Openreach on an EOI basis.
- FTTP. Openreach has already deployed more fibre to the premise than any other company in the UK and, using the world class research of BT's labs, continues to innovate to find more economic and speedier ways to deliver such services.
- Harnessing the power of big-data technologies to guide proactive investment in the network, helping to reduce the fault rate on the copper and fibre products so important to all Communications Providers. For example, our Brandenburg system harvests billions of technical parameters (such as capacitance, inductance and noise margin) on the millions of lines in the UK network each day. This technical data is stored and analysed by advanced Artificial Intelligence based algorithms, in order to identify and diagnose fault conditions across the millions of UK lines. In essence this is about Smart Monitoring of the Network. This technology, again developed at our labs, has helped Openreach to reduce the fibre network fault rate by almost 20 per cent during the past year and we are optimising the system all the time.
- Long-reach VDSL. This demonstrated how we could take a 2km long copper line currently achieving 9Mbps on standard VDSL, and increase this to 24Mbps, and longer term, through standards changes, we could achieve even higher speeds.

In 2014 we demonstrated what is known as a 3 Terabit per second Coherent Optical Superchannel. That is enough capacity to download roughly 100 HD movies every second. This innovation means we can look forward to the next decade with absolute confidence that despite the prodigious growth in data traffic that we see, our UK core and backhaul networks, built on that single-mode fibre technology can evolve - there will be no 'capacity crunch' in the next decade.

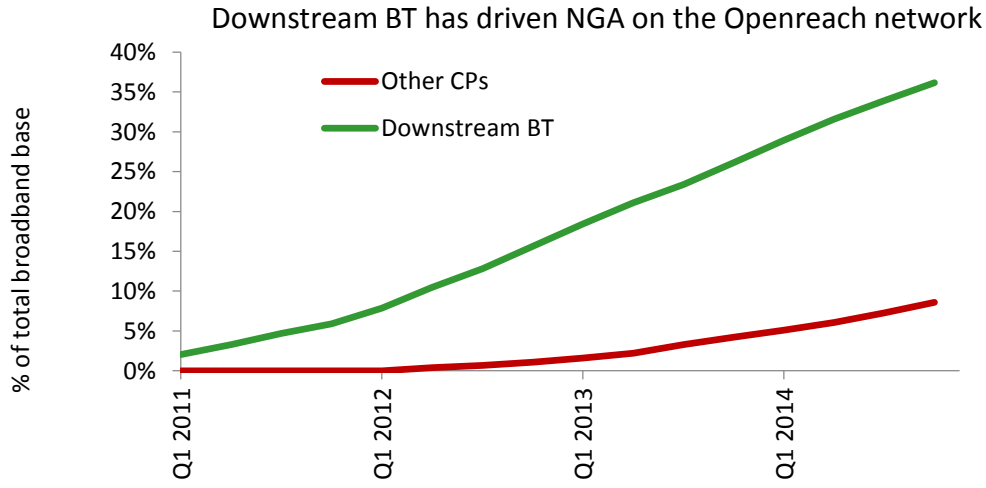
Despite being fully involved in the design of NGA and receiving the same information at the same time as downstream BT, the take-up of NGA by other Openreach customers has been disappointing until recently, well below the assumptions that BT made at the time of its original NGA business case.

They have only recently started to market fibre broadband, for reasons of their own strategic prioritisation.

BT's case to invest in highly risky NGA networks was fundamentally based on the vertical integration of BT Group, bringing three distinct benefits to the case, all consistent with the functional separation, equal access and indeed the strategic equality of Openreach.

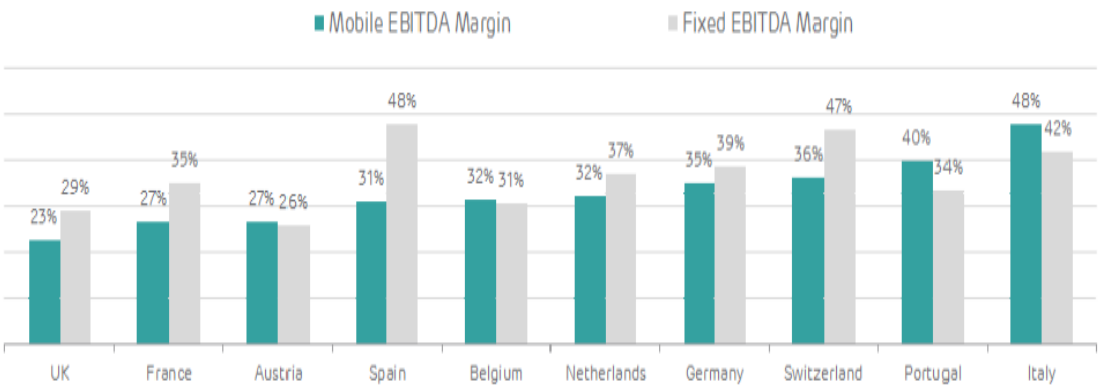
BT's/Openreach's investment in NGA was effectively underpinned by three key regulatory policies:

- First, the vertical integration of BT Group: this allows Openreach to invest with the assurance that, at the very least, downstream BT will market its products to drive volumes to recoup that investment. Downstream BT played a critical role in establishing superfast broadband in the UK while other CPs adopted a wait and see approach.
- Second, the application of equal access: BT positively welcomed the supply of its new fibre network to wholesale CP customers, and built these into its business case from the outset. Our original business case was based on the assumption of [✂] wholesale take-up and [✂] retail. Provision of fibre broadband by Openreach on an EoI basis, meant no CP had a built-in first mover advantage, which is often a strong motivator of new network investments (as it was for EE in its 4G investments). The high fixed cost of investment also meant Openreach had every incentive to make the service as attractive as possible to all CPs.
- Third, Ofcom's decision to forbear from imposing price controls on NGA products: this allowed Openreach to create a business case that could support the significant, long term investment required. It would have been extremely challenging, and indeed inappropriate, for Ofcom to have tried to put in place a price control before the volumes or prices on the demand side could be predicted or the costs of deployment on the supply side could be forecast. To do so would have undermined investor confidence and would have inhibited BT from doubling its investment commitment since its original announcement: our first plan was to spend £1.5 billion to cover 40%; then we announced plans to deliver 66% with £2.5 billion; in the end we committed over £3 billion, including matched funding for BDUK schemes. This approach will continue in future, as our recent Ultrafast Broadband announcements constitute another investment commitment of about [✂].



Source: Openreach

The courage and commitment to make these investments should not be under-estimated. It cannot be taken for granted that network operators will invest. It is a key issue for Ofcom in this review to work out how to ensure that investment is made. Investment returns for infrastructure operators in the UK market are in fact lower than other major European markets.



Source: Credit Suisse European Telecoms Factsheet, Q1 2014

The Boston Consulting Group[4] state that major infrastructure operators in Europe enjoy a return on capital employed that is less than a half of that achieved by 'access seekers' – CPs who rent networks rather than build their own. BCG believe there is an investment crisis in Europe driven in the main because investment returns for OTT businesses are much higher than for infrastructure businesses.

Given:

a. the low returns available to infrastructure investors, and
b. the low EBITDA margins in the UK compared to the rest of Europe

it is perhaps surprising to find the UK at the top of European league tables for NGA coverage (90% by May 2015 according to Ofcom[5]), with Analysis Mason[6] forecasting that NGA adoption in the UK will exceed all other major European markets in 2020.

A key challenge for Ofcom and DG Connect is to recast the regulatory framework in a way which preserves the vibrant competition present in the UK and some other parts of Europe whilst making long-term infrastructure investment more attractive to investors.

Our Technology choices

The UK's strong position in international benchmarks for average speed and coverage of superfast broadband derives from BT's decision to proceed with a national deployment based primarily on FTTC and to support the Government in the BDUK scheme with the same technology solution. The technology choice of FTTC has been very successful, as it is quicker and cheaper to deploy than FTTP and ongoing technical improvements continue to increase the achievable speed and performance since launch.

FTTC as the main solution was the correct choice for the UK for the following reasons.

- Our choice of FTTC reflects UK specific factors:
  - The UK's is a demand-led not a policy-led deployment (unlike Australia);
  - UK customers have a low willingness to pay (unlike Sweden);

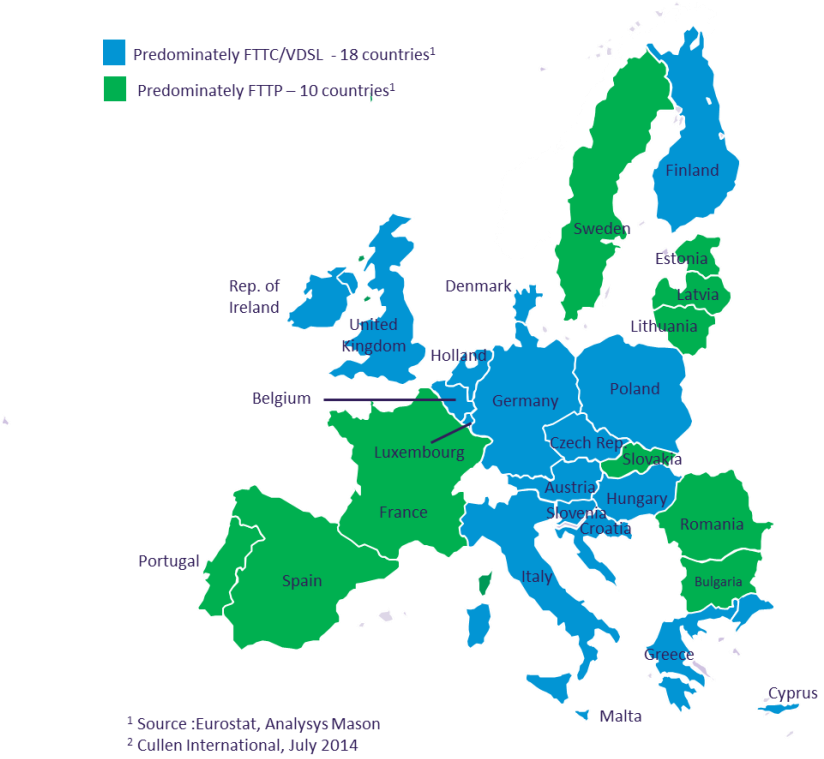
[4] Boston Consulting Group, Reforming Europe's Telecoms Regulation to Enable the Digital Single Market, July 2013, Exhibit 20

[5] Source: Ofcom Communications Market Review 2015

[6] Analysis Mason: Western Europe Telecoms Market: Trends and Forecasts (16 countries) 2015–2020, August 2015

  - FTTP deployment costs are high in the UK (low density of Multi-Dwelling Units / Multi-Occupancy Units and high labour costs, unlike Singapore);
  - Low level of Government funding (unlike Australia, New Zealand, France, Sweden)
  - Short sub-loop length (unlike France);
  - Regulatory requirement to wholesale an active product on an equal access basis (unlike Portugal, Spain).

- BT is not unique in selecting FTTC as the primary deployment technology:
  - The majority of EU incumbents have deployed FTTC;
  - It is now the most widely available technology in the EU.



- The minority of EU incumbents who chose FTTP as their main solution did so on the basis of country specific factors that do not apply to the UK:
  - Limited wholesale access regime including no active remedies.
  - Low FTPP deployment costs.

Our fibre broadband investment has proved timely and efficient:

- It has delivered the largest footprint of any EU5 incumbent;
- With FTTP we would have had lower availability, higher prices and lower uptake;
- Our investment is upgradable, as we are seeing now with G.Fast.

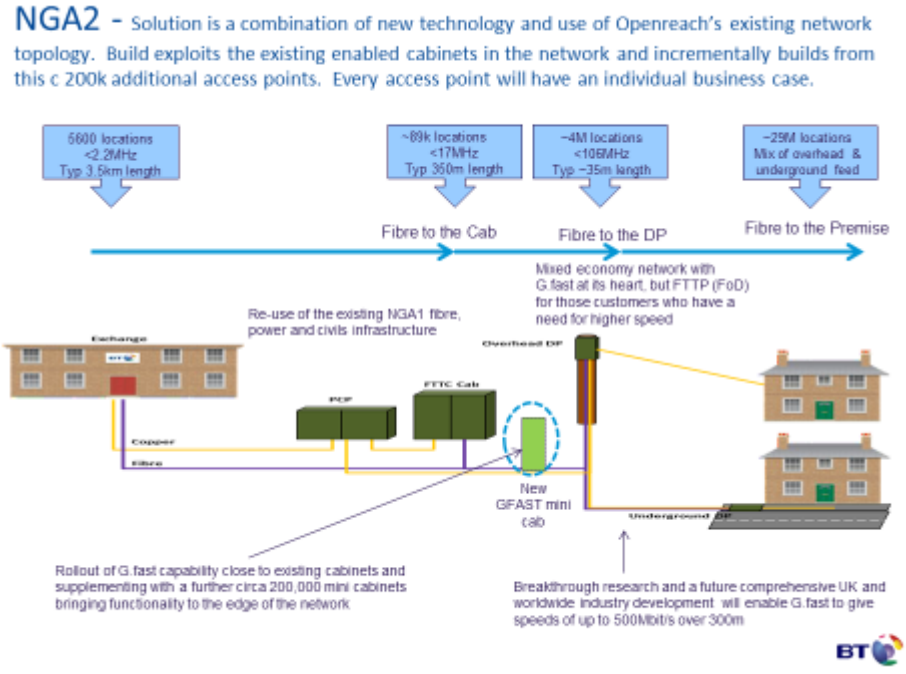
Moving forwards, BT stands ready to take the UK from a superfast nation to an ultrafast one. And to do it quickly, and at scale. We will do this by delivering ultrafast broadband with speeds of 300-500Mbps to 10 million premises by the end of 2020 and 1Gbps for those who want even faster speeds:

- Deploying G.Fast to the cabinet is the core of our approach and offers significant advantages in terms of offering rapid deployment and lower cost than FTTP;

- G.Fast will deliver speeds of up to 500Mbps to most homes which is more than will be required by 90% of households in the next ten years, even for their sudden peak requirements;
- FTTP remains a key part of our plans. We are committed to supplying FTTP to customers who demand it and are willing to pay and are innovating in the techniques and processes used for deployment to reduce its costs.

The following graphic illustrates the essence of our ultrafast broadband plans. A look at the sheer scale of the civil engineering task clearly illustrates the logic of BT's chosen approach:

- We currently have around 89,000 green cabinets in the street;
- Ubiquitous fibre to the premise (FTTP) would deliver the highest bandwidth but would cost c£20 billion and could take 20 years to deliver across the UK. It would require the digging up of driveways and gardens in around 29 million locations;
- Variants of VDSL (todays NGA1 technology) such as V+ have been explored but none of these offer a step change in capacity and thus are not future proof;
- G.Fast, the next generation of 'fast copper' technology, as currently conceived would meet bandwidth requirements but could cost c£8 billion, would require deployment to 4 million locations (DPs), provision of power to these locations and would take longer than ten years to deploy;
- We plan an alternative implementation of G.Fast that will allow faster and more economic deployment but will evolve to meet the bandwidths needs of most users. This is based on deploying G.Fast at or close to existing cabinet locations. We can forward power to these locations from our existing cabinets;
- We will also offer speeds of up to 1Gbps where that is the right solution.



For customers who need speeds of hundreds of megabits per second, we have been pioneering a new technology that can be deployed rapidly and this new technology will underpin our vision to make up to 500Mbps per second available across most of the UK over the next decade.

The technology that will allow us to do this is G.Fast.

It is a technology that BT's labs have been pioneering over the past few years. Standardised in December last year at the ITU, G.Fast is currently being productised by the world's leading technology equipment vendors and has been shown to have the head-room to evolve to speeds significantly in excess of 500Mbps over typical copper loop lengths in the Openreach network.

BT has made over 100 individual detailed technical contributions to the ITU - the global body accountable for agreeing the standards necessary before equipment manufacturers will build the required equipment. BT is the only UK contributor to the ITU standard for G.Fast.

The current G.Fast standard is not sufficient to deliver the Ultrafast vision that we have for the UK. Thus in the past year BT's lab has been working hard on improvements that will turn this great technical solution into a great cost-effective solution that can be deployed in the time-frame demanded by the market. Physicists and engineers at our labs have identified a number of key modifications to the technology which, when realised, will allow G.Fast to be deployed economically across the majority of the UK and in a timeframe measured in years rather than the decade the previous standard would dictate. BT and the UK are genuinely leading the world in driving standards and global vendors to produce the technology that, we are quite confident, will be the bed-rock of ultrafast networks here in the UK and globally. This technical leadership is fundamental to the offer that BT makes today.

Arguments that the UK should be deploying ubiquitous FTTP are flawed

We are aware that some CPs have argued that Openreach should be deploying ubiquitous FTTP. They further suggest that this is precisely what a structurally separated Openreach would do. We consider such arguments to be clearly wrong. Further it is ironic that the very CPs making such claims are on the public record as having argued until very recently that Openreach should not have been investing in fibre broadband and that there is no demand for such services.

To deliver this ambition we must consider, engineering scale, pace of deployment and cost to deploy. A winning technology must deliver maximum bandwidth, can be deployed in years and not decades, and results in a cost point that supports the highly competitive (i.e. low) prices that customers in the UK enjoy.

The economic reality is that a full nationwide FTTP rollout for the UK would cost well over £20 billion (some estimates are over £25 billion), which is too high for any commercial deployment and would take many years to complete. So, whilst FTTP remains a key part of our plans, it will not be deployed on a widespread basis.

FTTP also has practical problems which would slow any deployment. There would be the need for additional poles or to dig up gardens and driveways to provide the service. Also, customers might live in a Multi Dwelling Unit (MDU) and the landlord might not permit the work; permission to dig up the road or footpath might be denied; or there might be no suitable location for a pole. In contrast, our G.Fast plans involve upgrading street cabinets which we have already built, and to which power and fibre has already been provided. Installation of service can be provided without a truck roll.

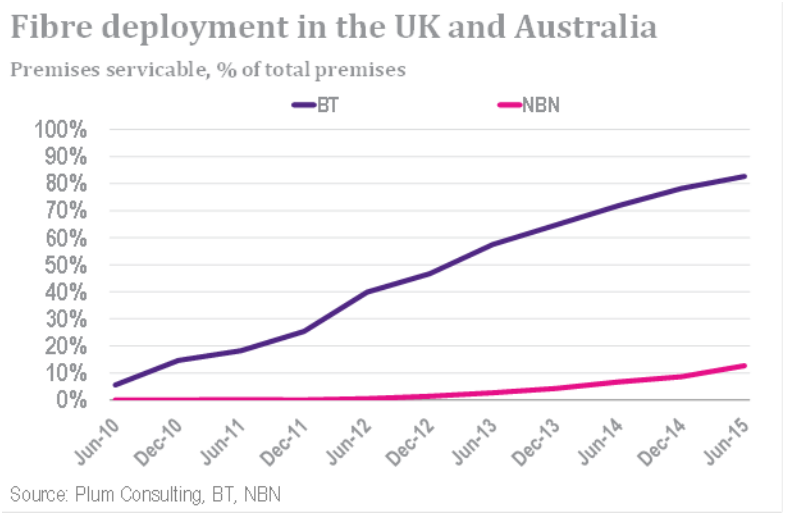
In having a preference for FTTC/VDSL for superfast broadband, BT aligns with most European countries. However, it is the case that in some other European countries operators have been installing FTTP, and we discuss the position in France, Portugal and Spain in Section 4.5 of this response. Their choice is due to a number of factors. Deployment costs for FTTP in Portugal and Spain are much lower than in the UK (due in part to the preponderance of MDUs in Portugal and Spain) and there is no regulatory requirement to wholesale an active product, meaning 'own investment' is the only way to enter the market (as one large supplier has done in Portugal). The length of the copper loops in France makes VDSL (and G.Fast in future) impractical.[7] The availability of useable duct in densely populated areas also seems to have played a role, certainly in Portugal and France.

As Ofcom mentions in the Discussion Document, some Governments have taken the political decision to subsidise FTTP and restructure the industry alongside this intervention,[8] but even when Government funding is in place, results have been very mixed with problems relating to a slow speed of deployment, cost overruns and low take-up. In New Zealand, Government funding has succeeded in rolling out fibre as an available infrastructure, but without an integrated retail arm to market FTTP services, actual customer take-up has so far been low. The Plum report shows the comparative outcomes in Australia and the UK, illustrating the difference in speed of roll-out between FTTP and cabinet-level services:[9]

[7] France's network topology (long sub-loop lengths) means that FTTC is not a viable option for the majority of lines. VDSL operating on the average loop of 700m in France (~twice the UK average) would only be capable of delivering 25 to 30 Mbps.

[8] Discussion Document, paragraph 11.66

[9] Plum, page 14



Australia has recently decided to make a large change in its technology choice, moving away from FTTP. Tony Cross, Chief Architect at the NBN recently said:

"Overseas experience in markets like the UK and Germany has proven the value of FTTN in delivering fast broadband services to millions of premises both quickly and cost effectively."[10]

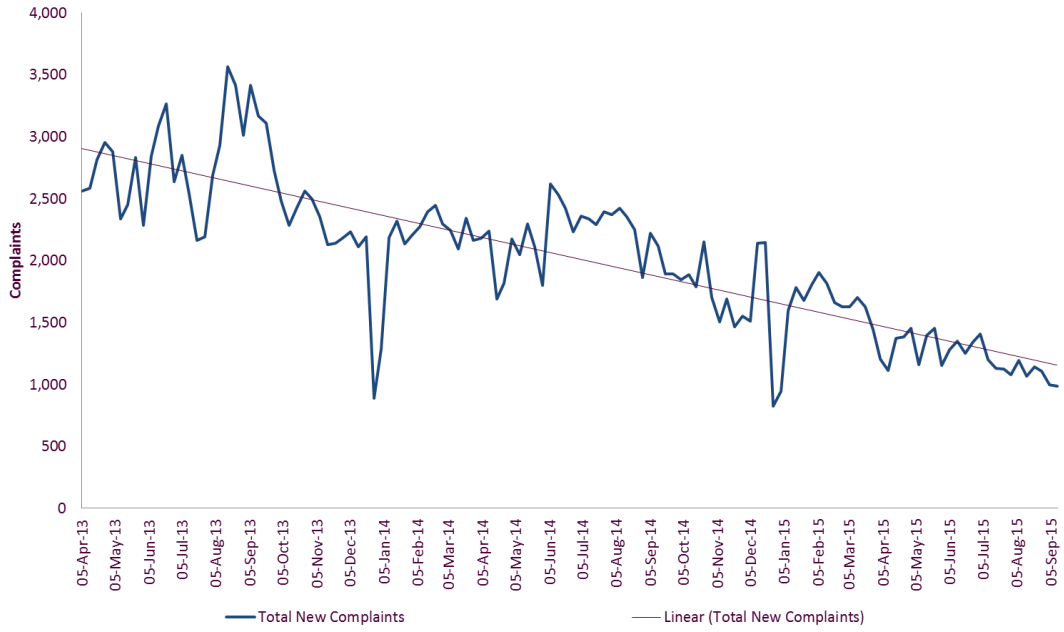
Singapore has rolled out FTTP universally with substantial Government funding, although, as we explain in our answer to Question 16 in section 4.7 of this response, even here there are significant challenges. Singapore is also very different from the UK in terms of its geographical features and population density, and what may be the right policy for a city-state like Singapore (which is under a half of one percent the size of the UK) cannot simply be transferred to the UK situation, with a dispersed population across widely-varying terrain.

The market is working for service quality

Over the last ten years consumer demand and service expectations have changed; for example, many customers now consider broadband service more important than voice. BT aspires to meet and exceed rising customer expectations. Even though service expectations have not always been met, contrary to some assertions service quality measures have not deteriorated over the period, but have largely been flat or slightly improved over the past ten years. In an environment where customers increasingly rely upon broadband and other communications services, BT recognises that service quality is increasingly critical. We believe that costs for quality need to be considered as part of market reviews and charge controls.

Openreach complaints have reduced and service improvement plans are in place which should reduce them further. Complaints have reduced dramatically since 2013. The trend is shown in the Figure below:

[10] NBN launches Fibre to the Node technology, 21 September 2015, http://www.nbnco.com.au/corporate-information/media-centre/media-releases/nbn-launches-fibre-to-the-node-technology.html



Ofcom should be conscious of the fact that its regulations have a direct bearing on service outcomes in the industry. We provide examples in Section 4.9 of what we consider to be regulatory problems in the approach Ofcom has taken, which have harmed improvement in service standards in the industry.

Service is a shared responsibility between Openreach, BT Wholesale and CPs. Outcomes appear to vary widely between CPs consuming exactly the same access or wholesale products; Plusnet has a consistently higher customer advocacy score than most other CPs, whereas TalkTalk generally perform poorly. Whilst it may be convenient for some commentators to assert that Openreach is at fault for poor service quality, the issue is in fact considerably more complicated. For more details see Section 4.9 on Service Quality.

Mobile performs well

The UK retail mobile market is characterised by a very high level of competition, between all MNOs (EE, O2, Vodafone, and H3G) and a large number of MVNOs, with high levels of customer switching. Competition between these players, alongside the competitive constraint of over-the-top (OTT) services, has resulted in low prices for customers and high quality services, as MNOs and MVNOs compete not just on price, but also on factors such as network coverage (including the 5-10% of customers who are poorly served) and reliability. This competition also drives considerable investment and innovation in the UK market, as demonstrated by the projects currently being undertaken by MNOs and MVNOs to enhance their networks and to deliver new propositions to consumers.

Low Prices

According to Ofcom the UK has some of the lowest mobile prices of any comparator nation (France, Germany, Spain, Italy and the US.) On a weighted average basis only France (where unusual dynamics exist) was slightly cheaper than the UK, with other countries significantly more expensive.

National 4G Coverage

O2's 800 MHz band spectrum licence includes a requirement to achieve 98% 4G indoor population coverage by the end of 2017. EE has also recently announced its commitment to invest £1.5 billion between now and 2017, focusing on extending its 4G network to more than 99% of the population and 90% of the UK's geography.

In fact, for competitive and technical reasons, 4G rollout is proceeding quickly. We expect population coverage to reach 98% by the end of 2015. Further geographic coverage in rural areas, network densification and the roll-out of indoor coverage solutions (such as femtocells and voice over WiFi) will deliver a mobile IP infrastructure that is vastly superior to that achieved with 3G technology.

Vibrant MVNO and OTT Market

The UK MNOs are active wholesalers, with all four MNOs hosting between them over 100 MVNOs on their networks including powerful brands like Asda, Tesco, TalkTalk, Virgin and the Post Office (without the need for regulatory intervention). The MNOs compete aggressively for market share and differentiate their propositions through pricing, distribution strength and the quality of services and innovations they are able to offer.

Ovum has reported that MVNOs account for approximately 15% of UK mobile subscribers, and approximately 10% of revenue for mobile services. There is also frequent new entry into the retail market by MVNOs.[11] Sky has recently announced plans to enter the retail mobile market as an MVNO and TalkTalk has announced enhanced mobile ambitions.

MNOs and MVNOs also face a strong further competitive constraint provided by OTT applications from services such as Skype, Facetime, iMessage and WhatsApp, which provide substitutes for mobile voice and SMS/MMS services and which can be provided over fixed internet connections, including WiFi. The proportion of adults using VoIP services, for example, has tripled over the past five years to 35%. Many businesses may not see consumer Skype type services as a substitute for telephony, but VOIP business services are becoming a substitute for voice telephony as we move into an IP world.

Mobile Market Conclusion

As with the fixed market, the mobile market exhibits vigorous competition. In common with fixed there is contemporary evidence of new market entry (Vodafone into fixed, Sky into mobile) which suggests that the wholesale markets are working. If there is a concern it is that low investment returns from mobile may ultimately limit the capacity and depth of mobile coverage within the UK.

Pay TV is the only poorly performing market

Pay TV in the UK is not working well for the consumer. The lack of effective competition in retail Pay TV has been acknowledged in numerous regulatory interventions and in Ofcom's International Market Review, but never properly addressed.

As a result, Sky's inherent market advantages, derived from its high and persistent profitability and relative scale in Pay TV, have endured for more than 20 years.

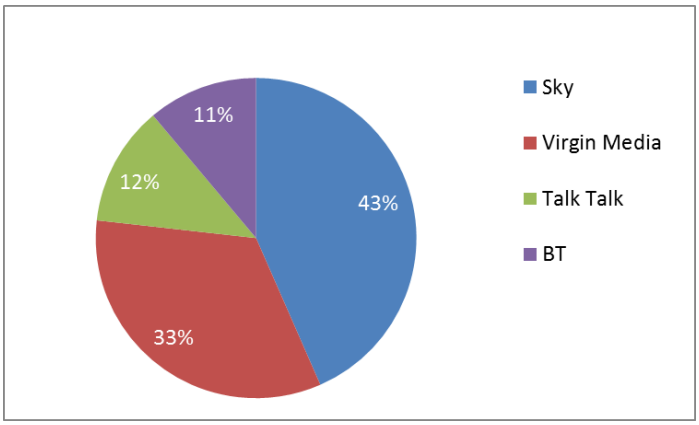
Unlike fixed and mobile communications there is no efficient wholesale market in Pay TV. Sky is not obliged to, and does not, offer fair, reasonable, non-discriminatory of cost-oriented access to their premium channels. On the contrary, Sky limits the distribution of its channels. At the same time, Sky's unassailable advantages enable it to command the most favourable wholesale terms for premium content. This makes it difficult for any other player to supply attractive content other than a distributor of Sky content on Sky's terms.

This has been a problem in Pay TV for a long time, but is now spilling into bundled services. As current research and data show, 40% of customers are now triple play (the fastest growing market segment) and Sky has by far the biggest market share. The impact of a dominant operator subject only to ineffective regulation bundling Pay TV products with communications is squeezing competition

[11] Piran Partners, MVNO Observatory, Annual Report on the UK Market, Spring 2014

out of the communications market place, is distorting customer choices and is harmful to end-consumers.

Triple play market share

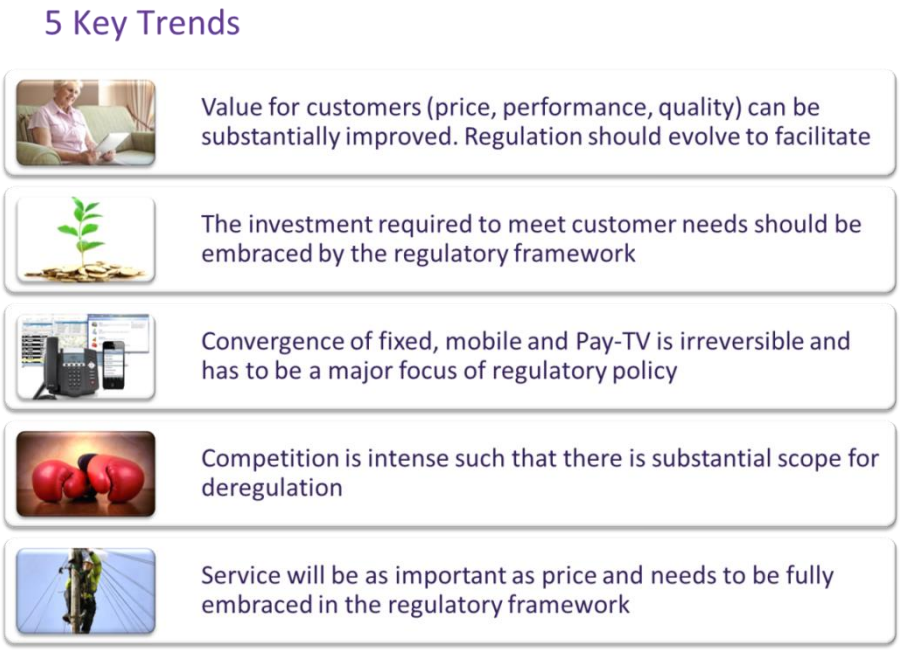


Source: Point Topic – September 2014

3.2 Customer Vision for 2025

Looking forward, we believe there will be increased data consumption, ubiquitous use of wireless for connecting devices, further convergence of fixed and mobile services, bundling, cloud-based applications and ever-higher expectations of service. However, we expect the different needs of commercial and consumer customers to drive different demands and outcomes.

We see 5 key trends:



Consumers' appetite for connectivity will continue to grow. An increasing proportion of the population will be computer and smartphone literate. Video – at up to 8k resolution – will dominate bandwidth demand. Smartphones and connected wearables will become as essential as the wallet or purse is today by acting as a payment mechanism, identity token, transport ticket and communication and entertainment hub.

Governments, corporations and small businesses will continue to do more with less resources by relentlessly removing inefficiencies. Some countries are already moving all Government services on-line (eg. tax returns) – this has significant implications for availability, security, usability, digital inclusion etc. A particular challenge will be caring for an aging population; communication and ICT technologies offer great potential to deliver high quality medical and social care services in a very efficient way whilst at the same time bringing the necessities and richness of the world into the homes of those who might otherwise struggle to experience it.

Connectivity resilience and automatic data backup will be essential by 2025: with so much of the social and economic activity in the economy relying on communication networks the consequences of losing connection or losing data will be unacceptable.

Government will increasingly want to assure itself that the UK's communication network is resilient and secure and not vulnerable to criminal or geopolitical attack. The ownership structure, management, financial strength and technical competence of major industry players will be an increasingly important political issue.

We set out our vision of three selected markets: Corporate and Government, Small & Medium Enterprises and Consumers.

Corporate and Government Customers in 2025

The overarching drivers for corporate and Government in 2025 are productivity, efficiency and effectiveness. This is achieved in many ways: by ensuring employees and customers always have access to communications and the information they need and where they need it, organising resources efficiently to avoid waste, a high degree of environmental and process awareness and automation.

Business customers take for granted that they and their customers can buy as much connectivity as they need. Devices are connected wirelessly but the core of many ICT operations takes place in shared data centres using cloud technology. This has driven demand for much greater capacity networks and fibre access to fixed networks in both urban and rural areas.

Corporate applications and many customer services reside the in the cloud, so businesses need their staff and customers to be permanently and reliably connected; outages are unacceptable and disproportionately expensive so resilient network access is mandatory. Cyber-attacks of various kinds are recognised as an economic threat to the UK; sophisticated defences are built into every layer of communication and ICT systems.

Small and Medium Enterprise Customers in 2025

The overarching ambition for SMEs is to achieve the same benefits from communications and ICT as their larger rivals despite their much more limited resources.

SMEs are a diverse group of customers ranging from the self-employed working from a kitchen table or a van to substantial firms employing dozens of people. Larger SMEs have similar needs to corporate customers but as firms become smaller staff must increasingly become jacks of many trades, however the need for advanced communications, sophisticated systems and access to professional services remains high.

SMEs are particularly vulnerable to simultaneous conflicting demands – a plumber cannot respond to a sales call or a supplier query while she is fixing a leak. SMEs wish to avoid back office overheads because they often cannot fully utilise dedicated resource. For this reason SMEs particularly value asynchronous communication (email, IM, visual voicemail) and flexible virtual offices (outsourced reception and scheduling). They will look to their CPs to bundle and manage these capabilities.

Service availability is crucial because of the business-critical nature of the applications but high fixed and mobile bandwidth is also essential for delivering ICT wherever it is needed.

Consumers in 2025

The overarching desire of consumers in relation to communications is to remain seamlessly, continuously and affordably connected to all the data and applications of their digital life.

The most important products in the market are fixed access, mobile, Pay TV and communication applications (voice, messaging, social media etc.). Most have automatic digital backup and device synchronisation because loss of data and content is catastrophic. Reliable and fast broadband will be even more critical to family life. There are a huge range of devices catering to many different needs – most people use several synchronised devices and want the ability to access content anytime and anywhere on all their devices.

Many CPs offer bundles containing all these elements and a larger number of niche providers serve specific groups. The national CPs may have sub-brands catering to different segments of the market – for example value and full service brands.

Customers have easy access to transparent information such as pricing, contract terms and service performance enabling them to make well-informed decisions.

Customers are able to switch suppliers easily (with a consistent process that provides a good customer experience, such as gaining provider led switching).

Customers have a choice of technologies to access TV and Pay TV services and content is widely available from multiple CPs – they are no longer tied in to bundles offered by a single dominant Pay TV CP.

Customers can choose between the bundles offered by their CP and over the top alternatives offered by other providers (such as Google and Apple); an open internet means alternative applications work just as well as those provided by CPs. Messaging services and social media interconnect allowing many different players to compete.

Consumers make daily use of many networked devices including those in cars, energy efficiency devices (smart meters and smart heating systems), security systems, education and health and leisure devices. These are frequently supplied with lifetime wireless data. Smart systems will help people make the most of their time and money, from managing their energy use to choosing the best route to work.

New technology is improving quality of life for many people. More elderly people than ever are able to remain in their own homes thanks to video connectivity to carers, medical professionals and friends. Access control to their homes lets in booked grocery delivery drives and carers but keeps out con men. Home automation and monitoring ensures the elderly remain warm and safe.

Education has been transformed by ICT. Lifelong learning is commonplace will millions of people improving their job prospects or broadening their horizons by participating in stimulating distance learning initiatives. Parents are much more involved in their children’s education with video access to teachers and on-line access to progress.

Communication services are highly reliable. Convergence at the application layer means applications can fail over between fixed and mobile networks should one become unavailable. Installation and repair times are as fast as can reasonably be expected and backed up by a Customer Charter that offers compensation if agreed performance and dates are missed. Consumers expect IP access to be ubiquitous and uninterrupted, and it invariably is.

There will also still be a proportion of consumers who do not or cannot engage with the technology, whose needs will require consideration by policy makers.

3.3 Communications Infrastructure Vision for 2025

Having set out customer needs in some detail we now consider how those needs can be met. Our vision is based on four key elements:

1. Universal broadband will be available for UK citizens, however, whenever and wherever they want.
2. Capacity, capability and service remain comfortably ahead of our customers' exponentially increasing demand for data.
3. An open, innovative internet in which many players offer competing applications to end users.
4. A thriving communications industry based on level playing-field competition and equivalent wholesale services.

The All-IP Industry

IP – internet protocol – is one of the key technologies that will drive communications forward through the next decade. The UK needs world-class IP infrastructure to gain the benefits of the potential of IP, to remain competitive and to cope with the explosion in data traffic forecast over the next twenty years. IP has many advantages over traditional technologies, including the ability for networks to self-optimise and self-heal, the separation of application and access layers and lower costs.

The UK is on the way to an all-IP communications infrastructure. The three key drivers are superfast broadband, 4G mobile (which is the first true mobile IP technology) and the transition of traditional services (like voice) from being embedded in the network to applications which can run over any IP infrastructure.

As previously announced, BT intends that all fixed line calls over our network will be IP by 2025. In its place we plan to deploy a scale IP voice infrastructure, based on the IP voice service being delivered all the way to end customers' premises; to sell this service to customers from 2017; to start proactive migration off the PSTN around 2020, once the IP solution has proven its capability; and to complete the migration of all customers, devices and applications from the PSTN by 2025, so that it can be decommissioned. This plan is driven by the functionality and cost benefits to customers of the IP services, and also by the technical obsolescence of the PSTN infrastructure, which is already decades old and nearing end-of-life.

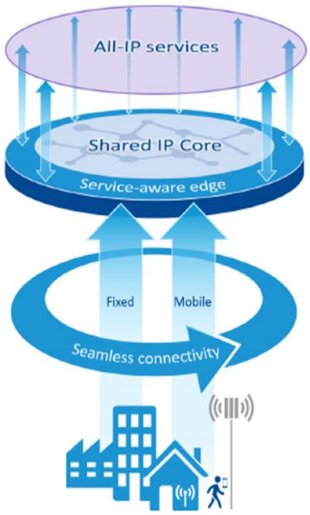
Our network vision:
All IP, fibre, converged, fixed and wireless, for all the UK

Services

- Seamless connectivity to the best fixed and mobile networks
- Customers migrate to an 'all-IP' service
  - Driven by a compelling bundle of voice, broadband, TV and mobility
  - By 2025 all customers will be using IP voice

Network

- One common access platform
- Connection to customers by copper, fibre and mobile
- A single IP core network
  - Replacing legacy networks and platforms



The convenience of mobile with the power of fixed

This will be a major transformation of what was the traditional foundation of the telecommunications industry in coming years. Ofcom has an important role in supporting this transition. Regulations framed with a PSTN mindset need to be updated to reflect the IP world where customers will, overwhelmingly, be served by (multiple) IP networks. Measures which provide meaningful customer protection should be retained but other requirements that are no longer appropriate for an IP-world should be removed.

We have mentioned before the key trend away from network-embedded functionality to all-IP networks with applications carried over the top. This model has already driven the smartphone revolution and underpinned the massive growth in demand for internet services. It is transforming the communications industry too and regulators need to ensure that regulation does not remain stuck in the past.

There are a number of implications of the IP /Application model:

1. Providers of regulated services (like voice) may be separate from the Communications Provider and Infrastructure Provider providing the access and IP.
2. Applications will operate over, and move seamlessly between, different types of IP access – fixed, wireless and mobile.
3. Competition will exist at the application layer, as well as at the CP and access layer.
4. It will be difficult to prevent applications based outside the UK from being available to, and used by, UK consumers, which may represent challenges if those applications do not comply with UK regulations and if UK authorities have little effective jurisdiction over them.

BT regards an application as over the top (OTT) if it can operate independently of a particular network. Regulators need to ensure effective, consistent and proportionate regulation of applications and OTT services, recognising that some of these services (such as voice) are regarded as critical for public safety. We consider this issue more fully in our answer to Question 24.

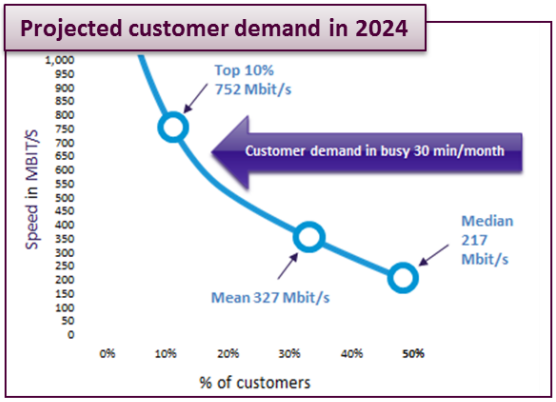
Universal Broadband

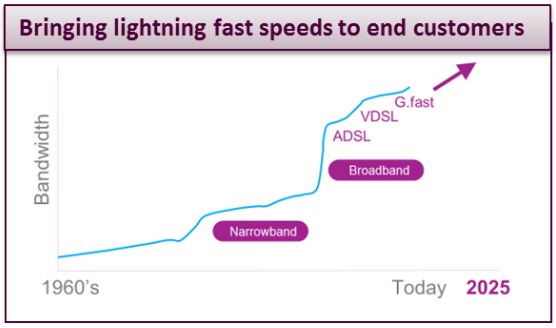
BT believes that fast broadband is increasingly necessary for citizens and businesses to participate fully in society. See Section 4.3 for how BT will support this vision.

The Need for Speed

Consumer Bandwidth

We expect demand for speed to continue to grow substantially for the next ten years, driven in particular by the increasing in video traffic over communications networks. The key drivers for this in the consumer market are market shifts towards much more video in web-applications, catch-up and on-demand TV and content, and the emergence of ever-higher TV resolution. By 2025 we expect video in various forms to account for over two thirds of all internet traffic.





Over 20 million households already have access to internet speeds more than adequate to support 4K TV. BT has announced plans to rollout out ultrafast G.Fast technology to 10 million premises by 2020, delivering speeds of between 300-500Mbps. We expect further rollout beyond 2020, keeping supply of bandwidth comfortable ahead of demand for most UK households. For new build housing it often makes sense to deploy FTTP. BT already provides FTTP to many larger new build developments and intends to extend this programme in the future. See Section 4.3 for how BT will support this vision.

Business and Government Bandwidth Requirements

As already stated businesses vary greatly in their demand for bandwidth. Openreach proposes a comprehensive range of solutions that combine performance with economy, allowing businesses to choose the best solution for their needs.

- FTTC (ADSL, VDSL and G.Fast) can meet the needs of many businesses in cost-effectively. This is particularly true where a business uses remote hosting and cloud services for its ICT needs.
- Fibre on demand allows business customers to order a fibre link supplied from their nearest cabinet. The customer pays an installation charge but then ongoing rates comparable to FTTP. Fibre on demand is appropriate where customers require high bandwidth including high upstream speeds.

- Ethernet services will offer carrier-grade IP services for business-critical applications, outdoor cellular sites and the like with an enhanced service wrap.

Cellular and Wireless Access

Demand for mobile bandwidth will rise exponentially over the next decade – estimates typically suggest traffic will grow twenty-fold by 2020. To meet this demand MNOs will need to develop their services in three ways:

1. By improving spectral efficiency – 4G is a large step forwards because it allows 2G spectrum (which has low spectral efficiency) to be re-farmed for 4G use and also supports carrier aggregation, which can enhance peak speeds significantly and spread demand efficiently across the available radio spectrum bands. 5G is likely to introduce further improvements subject to the physical limits as to how much spectral efficiency can be economically and technically obtained.
2. By acquiring more spectrum – Government continues to identify and make available spectrum for cellular use, however there spectrum is a finite resource. We expect MNOs to make increasing use of higher frequencies and other techniques – such as spectrum sharing and use of unlicensed spectrum – to maximise the spectrum available for communications. Very high frequency spectrum may support extremely high capacity services, however these will pose major engineering challenges as radio propagation is greatly diminished.
3. By increasing the number of cell sites – This allows radio frequencies to be reused much more intensively. We expect to see the rollout of small cells over the next decade; these will use the fast fixed network services already described for backhaul.

4G rollout, 2G to 4G re-farming, forthcoming spectrum auctions and the introduction of 5G around 2020 combined with a large-scale rollout of small cells will provide a large increase in mobile capacity. BT has an important role to play, as it does today, in delivering the fibre backhaul that makes small cells possible. Mobile operators will potentially need to support a high density of outdoor cells, especially in urban areas, and very high speed services over extended sparsely populated rural areas. BT stands ready to fulfil its part to meet this demand.

Core Network Capacity

Core networks must carry all the traffic generated by these access networks (fixed and mobile): any failure of the core has impacts on users over a very wide area. The core must not be ignored.

BT has long been at the forefront of developments in optical communications. We were the first operator to deploy the single mode optical fibre system in 1984 which is the foundation for all transmission networks globally today. This innovation has continued. Last year we established the world's fastest installed optical link operating at 3Tbps. This technology, combined with improvements in the processing capacity of routing equipment, will ensure that the core network can keep pace with demand. We are confident that there will be no capacity-crunch in future, no potential constraints arising from the optical fibre capacity on network performance. This is important – BT supplies core network services to many customers as well as its own downstream businesses.

In a world where capacity is dominated by video it is possible to reduce the cost of the core network by reducing the need for traffic to travel over it. Content Delivery Nodes that sit near the edge of the core network and store, or cache, copies of frequently-requested content allow much content to be locally stored rather than fetched form a remote location, saving network capacity costs. Where many users wish to receive the same content at the same time broadcast or multicast technologies are increasingly deployed. These allow multiple subscribers to access shared bandwidth rather than creating many individual connections. Broadcast / multicast solutions exist for fixed and mobile networks and BT expects them to become increasingly important, alongside deeper content caching, as content consumption moves to personal devices.

Always Connected – Resilience

As communications become ever more central to the economic and social fabric of UK society, loss of IP connectivity will be a major inconvenience for consumers and businesses. Resilience is a joint responsibility between the infrastructure provider and CP; many sources of failure lie in the CP domain. All parties need to work together to ensure good network performance.

BT believes that four key developments will deliver the resilience that customers demand:

1. Smart diagnostics identify areas of performance degradation; preventative maintenance can then avoid failures. They can also be used to pinpoint the location of a fault, ensuring the right response is triggered. Smart diagnostics are equally useful to CPs and infrastructure providers;
2. Enhanced break-fix includes a range of measures from enhanced service response to widespread availability of replacement components (such as hubs and routers) which customers can replace themselves, reducing delay and inconvenience;
3. Network Resilience will be enhanced within the core, for example through hardware and geographic redundancy and automatic fail-over. IP networks and Evolved Packet Cores are inherently more resilient that traditional networks. It is essential that single points of failure are identified and removed or reinforced. Resilience should enable service to be maintained, albeit at possibly lower levels of performance;
4. Access Multiplicity means the ability of applications to move seamlessly between fixed and mobile networks. Most customers will be served by at least two networks and in the event of one failing essential applications can be delivered over the other. This facility is greatly enhanced by the move to an IP / application model as services are no longer tied to a specific network. It is likely that CPs will introduce mechanisms to automate fail-over between different access networks.

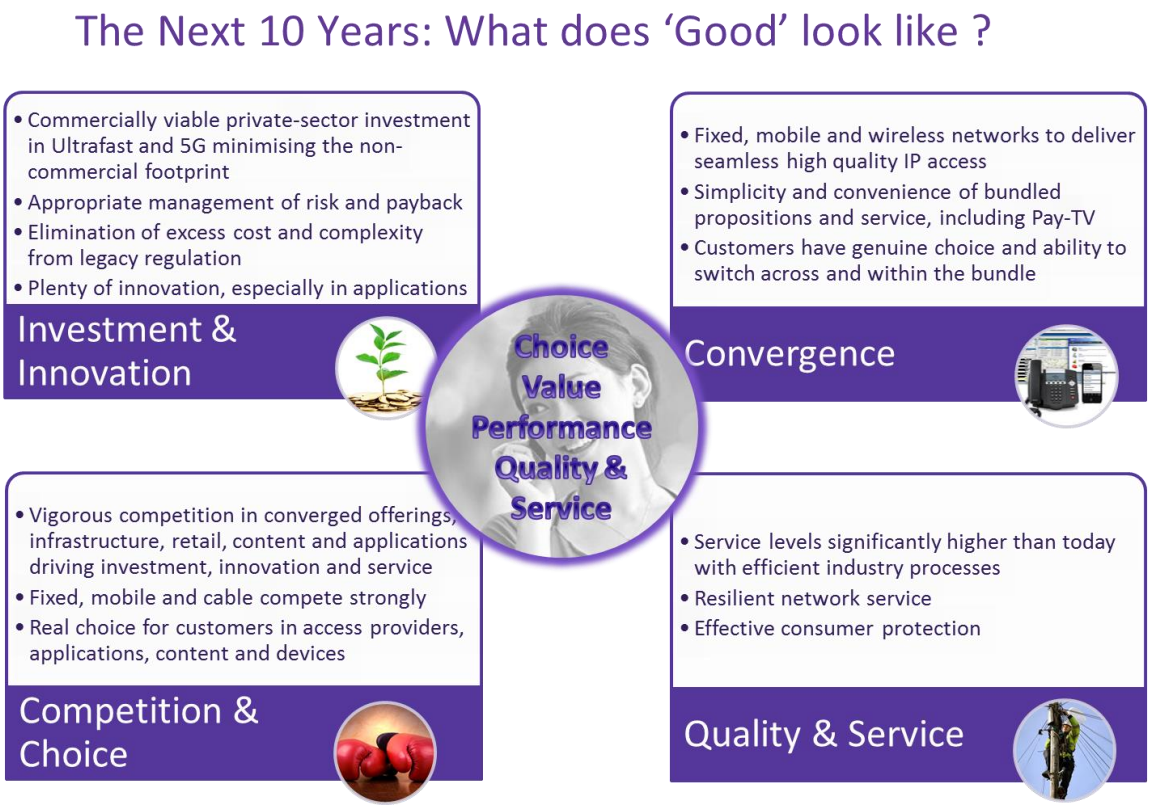
Going forward we expect applications to be even more resilient than services like fixed voice have been in the past. It is important that regulations evolve with technology and do not impose on industry and consumers expensive last generation solutions that are no longer necessary or useful.

Technology and Innovation

Within the UK communications industry BT Group is by far the largest investor in R&D. In fact we have one of the largest R&D organisations in the UK: only Rolls-Royce and Unilever file more patents than BT Group. We have played a leading role in the development of a range of important communications technologies. We have the expertise and financial strength to actively participate in global standardisation bodies which help ensure that emerging technology meets the needs of the UK market. Our R&D organisation supports all parts of our business. These innovations ultimately benefit the whole industry and, because they stimulate competition, UK consumers and businesses in general. Openreach makes the developments it funds available to all CPs on an EOI basis.

Conclusion: The BT Infrastructure Vision

BT has a clear and compelling vision for access services, core networks and applications which will deliver the speed and capacity required for the future. This is summarised in the diagram. We understand the importance of reliability and the critical role that smart technology, service levels and redundancy have to play in delivering the ultra-reliable internet that customers demand.



An integrated BT Group, with its technical expertise, research and development capability and the right incentives to invest, is well placed to deal with these issues over the next decade.

4. Comments on key issues and answers to Ofcom's questions

The Strategic Review of Digital Communications is an opportunity for Ofcom to fulfil its remit as a converged regulator by looking at the converging markets holistically and coherently, and to make clear how it proposes to fulfil its duties regarding proportionate, consistent and targeted regulation. The regulatory approach that Ofcom adopts as an outcome of the review will play a key role in determining whether the communications industry invests to meet the needs of customers and the wider economy over the next decade or whether the UK loses its current position as a leading digital economy and falls behind its international competitors. In short we believe Ofcom needs to focus its regulation, to make long-term commitments, and to leave markets to operate.

The discussion document is a key element of the review, setting out Ofcom's views of the key policy challenges and seeking input and evidence from stakeholders to help it decide how to take the review forward.

The starting point for the document is sound, recognising the positive outcomes that the industry has achieved for UK consumers and businesses over the last ten years that have positioned the UK as the leading digital economy in the G20. Ofcom's discussion document identifies some of the regulatory policy decisions that have enabled this success, for example the pricing freedoms in wholesale fibre access that have given BT incentives and confidence to invest in superfast broadband.

Ofcom's identification of the key challenges over the next decade is also broadly right in our view, with recognition of:

- The need to support roll-out of faster, modern networks and services, with incentives for efficient investment by CPs and public policy intervention in the hardest-to-reach areas;
- Competition problems arising from the bundling of Pay TV with telecoms services, and issues over Ofcom's powers to deal with them;
- The importance of incentives for high quality of service, with discussion of issues with Openreach service to date, and a welcome for the current Openreach management team's greater focus on improving quality;
- The need to ensure consumers are empowered through access to information and effective switching processes;
- The need for regulation to be targeted, with redundant regulation removed, an effective approach to legacy services that encourages migration whilst protecting customers, and a restatement of the principle that Ofcom will always seek the least intrusive mechanisms to achieve good outcomes for consumers.

However, as the rest of this section of our response shows, we believe there are significant shortcomings in Ofcom's approach and conclusions. The most serious of these are summarised below.

- Although there is discussion in the document of market trends, these are spread throughout the document and there is no holistic view of what different types of customer will need by the end of the next decade or what the industry and regulation could look like by then. The review is intended to set the regulatory approach for the next ten years, and as such it should be informed by Ofcom's own vision for 2025.
- Pay TV is only considered in the context of bundling with telecoms services. This is wrong given that Pay TV is critically important in its own right. The competition problems in this sector are of a greater order of magnitude than any that are seen in fixed and mobile telecoms, and any forward-looking review of the converging digital communications industry needs to address them rigorously.

- The heavy focus on BT and Openreach in a review that is intended to address the industry as a whole shows a serious lack of balance.
- In particular and as set out in detail in our answers in section 4.7, below, the section on regulating vertically integrated firms quickly launches into the issue of BT's structure and unfounded allegations of discrimination which are not balanced or substantiated and do not amount to a dispassionate evidence-based analysis of the situation. We regret to see this, and regret having to rebut these concerns in forceful terms in our response.
- Further undue emphasis on BT is evident in the section on quality, which only looks at the impact of Openreach on service and does not consider the effects on service of downstream providers which consume Openreach services or the service records of vertically integrated companies in other parts of the industry.
- The consumer empowerment section focuses too much on advocating measures that have been tried but found not to work well, and not enough on measures that would really help customers, for example a common switching process across all services and platforms.
- The section on targeted regulation and opportunities for deregulation is incomplete and one-sided: for example there is no discussion of how the Undertakings could be slimmed down, no analysis of the scope for removing obsolete USO requirements, and no roadmap setting out when Ofcom expects that it will be possible to remove existing wholesale remedies as they become obsolete.

Our detailed views on the full range of issues raised by Ofcom are set out in the remainder of this section of our response.

4.1 BT's regulated returns

In section 4 of the discussion document, at paragraph 4.51 et seq, Ofcom comments on concerns raised by some CPs about Openreach's returns in regulated markets, and that these have been "consistently above the rate required to compensate investors."[12] The period in question is the ten years since 2005/6.

This concern is unwarranted. As Ofcom states, its duties require it to recognise the impact of its decisions on investment in the UK, and for the availability and quality of services.[13] Ofcom also notes that capital funds need to be attracted to the UK: this should be taken into account in considering returns in charge controls. Moves to force BT's returns down to a level which always just cover the WACC, as implied by the CP concerns highlighted by Ofcom, would have clear adverse consequences for all those investing in the fixed telecoms market, not just BT.

We have noted, in particular, that the headline figure in the Frontier Economics Report (which is referenced by Ofcom) for what has been alleged as an over recovery of costs combines returns on services which were subject to RPI-X / CPI-X price controls with returns on services which were subject to a looser cost orientation obligation, or even just an obligation to report returns in the regulatory accounts.

The difference is that under price controls there is an aim that prices are aligned with forecast efficient costs at the end of the control period, whereas no such objective exists in the latter cases. We estimate that only just under 21% of the alleged over recovery (a margin above the WACC) according to Frontier is accounted for where RPI-X / CPI-X price controls were in place. In other words, the Frontier Economics Report mentioned by Ofcom is dominated by returns where charge controls were, after a full industry consultation, deliberately not imposed by Ofcom – thus there was no regulatory objective of aligning prices and costs.

Any sensible debate regarding historic returns must therefore consider the reasons why Ofcom did not impose RPI-X price controls, and allowed higher returns, and then to consider the effect of these decisions.

To give just one example, Ofcom's approach to wholesale broadband access (where there has only been a price cap in rural parts of the UK) was designed to promote infrastructure competition in as much of the UK as possible, a policy which has manifestly been successful in achieving this particular objective (90% of the UK has now been found to be competitive). As a result, the UK has a vibrant competitive market for broadband, and keen retail prices.

It is also relevant to recognise that the reported regulatory returns only ever show a partial picture regarding profitability rather than a proper analysis over the life cycle of investments. For example, the period reviewed by Frontier Economics excludes the heavy investment that BT made during the start-up phase in providing wholesale broadband access incurred before 2005/6, and the returns made in the period will be recovering such previous investments.

Where Ofcom imposed charge controls, our estimate is that the average margin earned by BT was circa [✂], and this figure is likely to be over-estimated for various reasons.[14] Even then, one cannot simply equate a positive margin over costs with prices, or returns, being excessive. BT made huge strides in reducing costs over the period, for example taking 24% out of its cost base between 2008/09 and 2012/13 – a period right in the middle of the assessment period. Given that the UK has regulation which is *designed* to provide a reward for excellent efficiency gains,

[12] Discussion Document, paragraph 4.40

[13] Discussion Document, paragraph 4.41

[14] The Regulatory Accounts understated duct costs over certain years during your period, and it uses FAC rather than Hypothetical On-going Network costs which Ofcom used for ISDN 30 charge controls.

it should be no surprise if some margin remains above costs, reflecting for example the effect of glide paths. This is the very nature of incentive regulation, and without such incentives, and also the commercial need for BT to respond to market entry, costs are likely to have been much higher - meaning, of course, higher prices for consumers.

A backward-looking accounting analysis of this type omits any proper recognition that regulatory decisions are forward-looking economic decisions, and that Ofcom had proper reasons not to set prices on a rate of return basis.[15] In particular, Ofcom itself points to the fact that it has made specific policy choices when setting charges to ensure that investment and competition are effectively promoted, in line with its duties under the Communications Act.

The implicit suggestion that all regulated services in telecommunications should be subject to a rate of return, utility-style regulation is simply wrong and would not have permitted growth of competition and services that we have seen since 2005/06.

[15] We note that Ofcom has been supported by CPs in this regard. In particular, C&W urged Ofcom to take a "cautious approach" to setting an ISDN charge control. In other words, C&W wanted to see prices which would be "inefficient" according to the Frontier definition.

4.2 Widespread availability of services

This section of our response addresses Questions 1 and 2 in section 6 of the discussion document.

Ofcom's overarching issue

"Should competition policy remain at the core of good availability outcomes for most consumers, complemented by targeted public intervention as required?"

Summary of BT's response

Yes, BT believes that competition should remain at the core of achieving good availability and targeted public subsidy should support availability in commercially uneconomic areas.

As a general policy, we believe Ofcom should seek to encourage the wide availability of commercially deployed networks as far as possible.

As a general point, we support the government's established approach of targeted public subsidy to achieve wide coverage.

It is possible to identify alternative approaches. In Australia, for example, the Government has intervened directly to provide universal availability even in commercially viable areas. This has created huge challenges, costs and political uproar, such that the Australian policy-makers look to the UK as the leading example of best practice. There is no case for adopting the Australian approach.

It is also possible to take another alternative approach and leave availability only to the market. We believe that policy-makers and regulators should encourage market solutions as far as possible, and should ensure that regulation and policy are not unintentional barriers to wider deployment. BT delivered near universal first generation broadband without regulatory or public assistance. BT believes that there could be a commercial case for universal deployment of broadband networks of between 5Mbps and 10Mbps, if Ofcom and the Government take the action necessary to make this a commercially viable business case.

However, at some level, either in the more remote or disadvantaged areas, or in relation to more demanding network performance (e.g. superfast broadband), the commercial case for network deployment will reach its limit. In these circumstances, it is in the best interests of the country and all end-users, we believe, that targeted public subsidy supports wide availability. This approach will have been highly successful in the UK in upgrading universal broadband from the first generation performance to a 2Mbps universal service commitment, and in achieving over 95% coverage of fibre broadband by the end of the current BDUK schemes.

BT's answers to Ofcom's questions

It is widely understood that competitive rivalry, in the form of effective and sustainable competition, helps deliver good outcomes, whether measured by the scale of efficient investment, innovation and service availability, or more generally as consumer welfare. Experience in the UK illustrates how the competitive process supported by competition policy has driven good consumer outcomes in broadband and mobile markets in the UK.

In the context of broadband it is important to note that competition policy, in the form of functional separation, local access and active-type remedies, has delivered both effective and sustainable competition for the consumer. It is competition for the end-consumer, competition from like technologies (e.g. cable) and parallel technologies (e.g. wireless), underpinned by the right regulatory policy, that drives commercial incentives to innovation, investment and availability. Signals provided by the competitive process, and competition for the end-consumer, will determine the extent of investment and service availability. However, these signals can be distorted and investment curtailed if regulatory policy fails to establish the right underlying incentives (this issue is discussed in more detail in Section 4.6 of this response).

The work commissioned by Ofcom in this area provides further evidence of the relationship between competition and investment (and availability). While not definitive, WIK's report illustrates the likely correlation between competition and investment, indicating that market factors, such as the presence of non-incumbent infrastructure, might have more of an influence on investment than perhaps regulation. Analysys Mason's report is not definitive on this issue either, suggesting that it is difficult to establish a causal link between regulatory intervention and investment.

The report also illustrates that different forms of competition policy can drive very different incentives and outcomes. We note that outcomes in the UK compare favourably with all other comparators in the WIK report, in respect of coverage, take-up and price, etc. Indeed, the report shows that certain forms of regulatory and competition policy, e.g. passives or separation, risk delivering worse outcomes in terms of coverage, choice and take-up. For example, there appear to be very wide differences in the levels of coverage in comparator countries and similarly dispersed levels of take-up. It is notable that, in relative terms, the UK performs very well on coverage and take-up, indicative of a competition policy that drives greater availability (coverage) and market participation (take-up).

In addition to the network, geographic and other supply-side factors, demand-side factors will clearly influence both the nature and extent of investments. This issue is indirectly addressed in both the WIK report and Ofcom's discussion paper, where bundling is referenced as a means of attracting increased demand and revenue, and therefore, potentially encouraging further infrastructure investment. This is a significant area of policy, and we note here that WIK refer to content and Pay TV as being a key demand-side issue in the context of coverage and take-up. This is echoed in Ofcom's paper in that bundling of superfast broadband and Pay TV is seen as a means of attracting more revenue, which would then encourage investment in infrastructure. BT agrees that where consumers are taking a wider range or bundled products, this may be likely to support cases for further investment. It is therefore essential that competition policy is applied uniformly across the bundle and across the value chain, from access to upstream network infrastructure through to access to Pay TV content.

In the context of availability and public intervention there are number of detailed issues to consider. This is discussed in more detailed in our answer to Question 3 in Section 4.3 of this response.

Accepting that competition encourages efficient investment and greater availability, Ofcom's policy approach must continue effectively to balance the incentives to invest, on both regulated networks and services and unregulated, with the promotion of competition, across the entire set of bundled propositions and across the value chain. Fair and effective competition across the value chain is particularly important given greater convergence, cross-selling and consumer demand for bundled products.

Question 1: *Do stakeholders agree that promoting effective and sustainable competition remains an appropriate strategy to deliver efficient investment and widespread availability of services for the majority of consumers, whilst noting the need for complementary public policy action for harder to reach area across the UK?*

Yes, promoting effective and sustainable competition is an appropriate strategy for promoting efficient investment; competition has been and will continue to be a stimulus to investment. Competition from cable has encouraged investment in superfast broadband networks by BT. Potential competition from 4G networks has been and will continue to be a stimulus for fixed line network investment. Downstream of Openreach, equal access is the foundation on which competition drives investment by numerous competitors.

We believe that policy-makers and regulators should encourage market solutions as far as possible, and should ensure that regulation and policy are not unintentional barriers to wider deployment.

However, it is in the basic nature of telecoms networks that the costs of network deployment rise as the dispersity of customers increases. At some point the case for deploying parallel infrastructure will run out and at some other point the case for deploying even a single network will run out.

It is not a trivial matter for policy makers, regulators or businesses to identify these points. Furthermore, attempts by regulators to define these points have the tendency to ossify any definition made. Ofcom should err on the side of leaving opportunities for competitive investment open, rather than closing down opportunities for others to invest.

In the TSR ten years ago, Ofcom concluded that there would be no access network investment and set a charge control on Openreach's MPF lines which was, in BT's view, below BT's cost of capital. The consequence was a self-fulfilling prophecy: no parallel copper access investment has been made in that time. By contrast, Ofcom chose not to charge control Openreach's fibre network products (although not because it believed necessarily in parallel investment). The consequence has been plentiful parallel investment in fibre access networks, particularly the extension of Virgin Media's hybrid fibre-coaxial network. We believe that there are lessons in this for regulators, and that Ofcom should err on the side of encouraging parallel network investment. We believe that Ofcom is on the point of making the wrong choice in this regard, by imposing a draconian charge control on Ethernet networks, which will undermine investment by operators competing with Openreach, not just in BT's view, but in the opinion of competitive infrastructure investors too.

Where the commercial case for network deployment reaches its limit, it is open to policy-makers and regulators to mandate coverage by a number of means: either in spectrum licence obligations, or by contract (through public subsidy schemes) or through USO obligations. The UK has adopted a well-judged approach to achieving high levels of coverage through efficient use of public funding in a gap funding model, which has demonstrably out-performed subsidy schemes in other countries, and has successfully promoted vibrant downstream competition. A single scale provider, properly incentivised and held to account, providing equal access to the subsidised infrastructure, is the best solution for achieving public policy goals. The alternative – public subsidy directed to multiple local providers not providing a scale equal access wholesale service – will not achieve the best public policy outcomes, because they will result in local monopolies and not support vibrant competition in the retail market.

Market context

In addition to the general discussion above, we make the following outline comments on the current economic structure of the UK market. In simple terms, and when viewed statically from a perspective of local access infrastructure, the market could be characterised by the following:

- The area over which there are at least two players (usually Openreach and Virgin Media, but increasingly more suppliers, e.g. COLT, C&W/Vodafone, City Fibre (in partnership with Sky and TalkTalk Group), Gigaclear, Hyperoptic and others) supplying state of the art fixed access services (FTTP, VDSL or DOCSIS3.0 on hybrid fibre coaxial networks). This currently includes about 50% of households in the UK. Virgin Media have recently announced an intention to extend its footprint to a further 4 million households, suggesting that c.60% of UK households will be served by at least two local access infrastructure providers;
- In addition, over the same area, Openreach supports a large number of CPs offering a wide variety of services. In the very few areas where competition is not currently present, Openreach prices are regulated on a national basis and Openreach offers its products on an equivalent basis to all CPs;
- An increasingly small proportion of the UK market presents a commercial challenge in terms of infrastructure and/or service investment. These areas might be characterised as being uneconomic for Openreach, or any other fixed access provider to provide state of the art fixed access services, although it may be commercially viable (and necessary) to provide so-called legacy products.

It is important to note that the competitive commercial footprint provides for national price and service level competition to Openreach, not just where it is present. This is because Openreach prices and SLAs are national and not restricted to those areas in which there are competing infrastructures or alternative CPs. All areas of the country, even those without local competition, get the benefits of competition in the competitive parts of the country.

Factors driving the extent of investment

As noted by Ofcom in the discussion paper and in the work it has commissioned from WIK and others, infrastructure investment and the deployment of superfast broadband technologies will depend on a number of factors (in addition to those discussed above):

1. The cost of upgrading the network (to state of the art functionality);
2. The prevailing and anticipated market prices; this in turn depends on whether new products are regulated and also the (regulated) price of legacy products;
3. Adoption and long-term pricing risks, including the risk of regulatory price controls; and
4. Substitution and product obsolescence risk.

In addition, BT identifies three other critical factors driving the extent of commercial network deployment:

1. Likely market demand, in terms of the number of customers likely to subscribe to the network services at the expected market prices: once the network is built and the fixed costs incurred, it is strongly in the interests of the network operator to recruit subscribers to pay for it rapidly. Among other factors listed below, likely demand will be driven by demographics (the affluence of subscribers or the make-up households in the area);
2. Related to the above, the capability of the antecedent network is also an important driver of demand: good copper broadband speeds in the area limits the take-up of fibre broadband compared to areas with poor copper broadband speeds;
3. Also related to the above, the extent of competitive networks is an important driver of demand: if an alternative network which can deliver good speeds is present in the area, take-up of fibre broadband will be lower.

These challenges operate in all parts of the country equally. It is for this reason that the apparently counter-intuitive but actually consistent result arises of not spots even in urban areas.

Implications for public intervention

As the case for commercial network deployment, driven by the factors set out above, will reach its limit in certain circumstances, it is necessary to consider the appropriate public policy solutions for wide coverage.

BT supports the current model of public subsidy. We believe that public support for wider availability should follow the established policy pattern with what we see as its five key components, a) a public subsidy b) on a gap funding model, c) a technology neutral basis, d) targeted at areas where no network is present or intends to deploy commercially (white areas), and e) on the basis of equal access to the active wholesale products on the subsidised infrastructure:

- Moving away from subsidy to some other form of intervention (e.g. a USO) will create a series of consequential funding, legal, policy and process delays, which will be to the detriment of speedy deployment of widely available services;
- Moving away from a gap-funding model would fail to make use of the private sector's willingness to invest, which would increase the costs to the public purse;

- Moving away from a technology neutral basis, for example to a technology-driven attachment to FTTP, will increase the costs and delay the time for widely available fit-for-purpose networks;
- Moving away from targeting subsidy on white areas would displace commercial investment, which would not be welcomed by network operators or compatible with state aid requirements;
- Moving away from a real wholesaling requirement would result in local state-funded monopoly not benefiting from vibrant retail competition.

It should not be taken in the way we have set out this position that BT assumes it will always win all state-aid funded contracts. On the contrary, we have not won them all, and we do not presuppose that we will win them all. Before the BDUK scheme, BT lost publicly funded fibre network contracts in North Wales and South Yorkshire. Both of these have failed to deliver public benefit, despite large public investments. We were one of nine applicants to the BDUK process, and one of two qualifiers: all our prices and terms under the BDUK Framework benefited from that competition. We have not won all the phase 2 (Superfast Extension Programme) contracts. We welcome any other network operator willing to shoulder part of the challenge of meeting the public policy goals in future.

We believe that it is in the best interests of the country and of all end-users that the Government takes forward its proposals for a third phase of the BDUK scheme and seeks to achieve 99% coverage of fibre broadband networks.

Availability of Mobile Networks and Services

Policy considerations

Ofcom has always adopted a different strategy to promote competition in mobile, focusing on having a minimum of four national wholesalers, each holding sufficient spectrum to compete effectively. This competition has resulted in high levels of deployment of 2G and 3G networks and is on track to deliver the same for 4G networks.

In addition Ofcom has used conditions in spectrum licences to mandate wide availability, particularly through the obligation in the 800MHz licence acquired by O2 to achieve 98% population coverage indoors at 2Mbps by the end of December 2017. It is notable that, despite much pressure to the effect that the coverage obligation would cause high costs and reduce the value of the licence: in fact the spectrum licence with the coverage obligation was found to be worth the same as 800MHz licences without coverage obligations. BT considers that the use of licence conditions to achieve availability goals is an appropriate policy, and interprets the results of the auction as indicating that none of the mobile networks can let another have systematically better 4G coverage: competition will drive the networks to seek to match or exceed each other.

We do not think that Ofcom needs to consider further interventions to drive coverage, and needs to make sure that its mobile coverage obligations do not distort adjacent markets, in fixed line networks. Ofcom does have other policy tools available to it to promote coverage. For example, it could mandate national roaming for 2G, 3G and 4G services. However, BT considers that the adverse impact on competitive investment incentives for mobile networks outweighs any positive customer experience benefit from national roaming.

The Government has also sought to promote wide coverage, both by direct financial intervention and by persuasion. In relation to direct subsidy, the Mobile Infrastructure Programme is an attempt to promote wider coverage in rural areas. BT considers that this subsidy scheme has been unsuccessful, because it was not well designed, and would be happy to engage with the Government to consider better solutions in future.

In parallel, the Government has been able to use its persuasive powers to secure commitments from mobile networks to achieve 90% geographic coverage (a more demanding goal than 98% population coverage). Mobile network operators were looking to Ofcom to ensure that the incremental costs of this commitment was taken into account in the way Ofcom chose to set annual spectrum licence fees.

BT's view is that it is appropriate for Ofcom to take account of the costs that networks incur in meeting public policy goals as well as commercial goals. This interaction between Government policy and regulatory policy is common in fixed and mobile networks.

The Government also has the option to consider how it uses its own telecommunications assets to promote public policy goals. The government, through its various departments and agencies, owns and operates extensive networks, which could be used to contribute to the delivery of public policy goals, such as wider geographic mobile coverage. BT would be happy to work with the Government to explore such options.

Market context

It is important to keep in mind that the four UK mobile operators have formed two consortia to manage their passive and active radio access networks. In effect there are two competing footprints (although in some cases MNOs deploy additional cell sites outside their consortia), the joint venture between EE and Hutchison, MBNL, and the joint venture and collaboration between O2 and Vodafone, CTIL / Beacon. BT believes that network sharing arrangements promote cost efficiency in delivering mobile outcomes for wholesale and retail customers without impairing any competitive dynamics in the markets at these levels. However, the current network sharing arrangements will have to be considered in the context of the proposed acquisition of O2 by Hutchison in the UK, as the combined enterprise would span the two arrangements.

The UK is an urbanised society by global standards and population coverage close to 100% is reasonably achievable. More difficult will be achieving good levels of in-building coverage and securing coverage of rural areas, including roads and railways. Typically the mobile traffic generated in these areas does not justify the additional cost of deploying networks. In these circumstances, public policy support as well as regulatory support is appropriate, just as it is in fixed line networks.

A further factor in the UK has been the historic imbalance in low frequency spectrum allocation and the standardised association of spectrum with mobile technologies. Vodafone and O2 control virtually all the sub-1GHz spectrum, which has the best radio propagation characteristics. However, this spectrum was, until recently, only used by 2G GSM technology. The result was good voice coverage but relatively poor mobile data services. 3G data services operate at 2.1GHz, offering a much smaller footprint around each cell and inferior in-building coverage. Fortunately, 4G largely resolves these problems because it has been standardised to work in a wide range of global bands, including all the spectrum historically licensed for 2G/3G mobile use in the UK. This has resulted in a significant expansion of the useful mobile data footprint as 4G has been deployed.

Mobile networks face essentially the same economic issues when considering expansion as fixed operators. Indeed, the prevalence of large voice, text and data bundles in the UK – which customers like – arguably makes for more of a challenge because there may be little incremental revenue to be earned from incremental coverage.

In response to this dilemma MNOs have innovated in several ways. All MNOs offer indoor small cells which use domestic or business broadband lines for backhaul. This allows customers to solve indoor coverage problems provided they have basic broadband (1Mbps or more). Vodafone has launched a rural SureSignal product which essentially crowd-sources rural sites (the site and power is provided free by the community). A residential broadband connection (typically provided by Openreach) is generally used to provide backhaul. Thus, Vodafone has been able to extend the reach of its network by taking advantage of assets provided by others, reducing its own costs. It should be noted that all of these solutions take advantage of Openreach investment and BT's adherence to an open internet policy.

Question 2: *Would alternative models deliver better outcomes for consumers in terms of investment, availability and price?*

BT supports the model founded on the general regulatory strategy principle that Ofcom reached in the previous strategic review: infrastructure-based competition should be encouraged as far as it is likely to be effective and sustainable. However, BT considers that Ofcom should seek to encourage competitive investment in all parts of the value chain by not imposing draconian charge controls, which will only squeeze out investment by BT and others.

We support the government's approach of targeted subsidy, based on a gap-funding partnership, to achieve higher coverage and the equal access wholesaling of such infrastructure. However, we believe the Government and Ofcom should consider how to promote the commercial case for investment, so as to achieve coverage with a lower burden on the public purse. Among the proposals that BT made publicly on 22 September was a commitment that we stand ready to achieve 5-10Mbps universal broadband coverage, subject to Ofcom and the Government taking action to make this a commercially viable opportunity. We believe that appropriate regulatory, policy and contractual support from Ofcom and the Government can make universal broadband coverage commercially viable, and we are ready to discuss options as to how this may be achieved.

In BT's view, alternative models to competition would not provide better coverage and availability for the vast majority of the market. In terms of areas in which commercial investment and deployment remain a challenge, there may be a number of alternatives to the BDUK model, but few, if any, of which are likely to deliver better outcomes for the UK consumer.

In conclusion, competition has delivered high quality fixed and mobile access for most of the UK. Targeted public intervention to overcome those areas experiencing market failure appears to be a good means of dealing with hard to reach areas. The UK's approach on competition policy has been amongst the most successful compared to many other countries and models.

4.3 Extending availability through targeted public policy

Ofcom's overarching issue

"What more can be done through public policy to deliver truly widespread availability?"

Summary of BT's response

- BT believes the UK should sustain its policy commitment to achieving 99% fibre broadband / superfast broadband coverage supported by public funding.
- Delivering high levels of superfast broadband coverage beyond the current 95% target will require further Government funding for rural areas, a state aid approved scheme for urban not-spots and the use of multiple technology solutions.
- In the absence of a policy commitment to universal superfast broadband, BT believes that a lesser policy aspiration of universal good broadband speeds is an appropriate policy commitment but not an appropriate legal USO Obligation.
- As well as speed, other parameters should be built into a definition of good service/availability, for example capacity, peak time throughput, and connection performance (jitter characteristics), that could be delivered in areas beyond the superfast footprint.
- The evidence of what speed is sufficient for the typical customer is inconclusive, but may fall between 5Mbps and 10Mbps.
- Ofcom cannot simply leap from a view as to what a good speed looks like to a conclusion that a USO for broadband is justifiable.
- However, BT stands ready to support the Government in delivering a good universal broadband speed such as in this range, so long as Ofcom and the Government take the action necessary to make this commercially viable.
- Delivering a universal speed of 5Mbps to 10Mbps will need significant investment to achieve. For this to be commercially viable, end customers will have to pay and Ofcom will have to adjust its regulations.
- An arrangement of this type could be supported by public support schemes such as individual end user grants to key groups of users in a similar manner to the current SME connection voucher scheme, subject to State aid issues being addressed, or the previous scheme of support for Digital Switchover.

BT's answers to Ofcom's questions

Question 3: *We are interested in stakeholders' views on the likely future challenges for fixed and mobile service availability. Can a 'good' level of availability for particular services be defined? What options are there for policy makers to do more to extend availability to areas that may otherwise not be commercially viable or take longer to cover?*

BT envisages a promising future scenario for UK ICT infrastructure that is both world-leading and realistically achievable, and where the UK extends its current strong position compared to key economies to one of genuinely world leading coverage, take-up and use.

The challenges to delivering on this ambition are not technological or financial but commercial and regulatory. The technology solutions are present to deliver widespread service availability. Financial capital is available to invest in attractive investment cases. However, the challenge is the commercial case: it is vital to ensure that returns to infrastructure providers are sufficient to support the necessary investment in fixed and mobile coverage commensurate with quality of service expectations. This is dependent on market conditions and the regulatory regime. BT believes that most customers are

willing to pay for the subscriptions necessary to pay for the investments in networks needed to provide them with fit-for-purpose services. There is no breakdown in the basic business model of network subscriptions, except in localities where network deployment is disproportionately expensive. Often, however, the regulatory regime, imposing national pricing and low rates of return on investments, inhibits the supply side of the market from finding an outcome that meets customers' needs on the demand side.

The solution for the UK will need to enable the most cost effective means of delivering superfast coverage as far as possible (towards 99% of premises) with the potential for a good level of service, such as that proposed in our universal minimum speed announcement, capable of delivering popular internet services like high definition video for all that require it.

The actions that are needed to deliver solutions to these challenges include the following:

- For BT to ensure that the BDUK phases I and II schemes are fully completed, including ensuring that local bodies use the benefits of gain-sharing arrangements and claw-back funding to maximise coverage under the approved schemes;
- For the Government to engage with the European Commission to secure approval for the remainder of the phase II schemes (in England and Scotland) on similar terms to the highly successful original approval, so that the UK's coverage targets can be met;
- By the same new approval, for the UK Government to take forwards its previously proposed BDUK Phase III scheme (for the final 5% in rural areas) with adequate funding for the best technology approaches, to achieve maximum geographic coverage;
- For the UK Government to engage with the EU Commission with a new State Aid scheme for fibre deployment in city areas, addressing the limitations and inconsistencies in State aid rules which have inhibited such a scheme in the UK to date. In particular they should tackle the differential requirements for open access in city areas, which prevent a successful solution to urban fibre broadband not-spots. The issues behind market failure in urban areas are equivalent to those in rural areas. The specific exclusion of city areas from the UK clearance has effectively prevented superfast infrastructure deployment in urban white spaces under the BDUK scheme even though they suffer from the same issues as BDUK intervention areas. City white spaces are highly likely to persist unless a scheme is approved in a way that strikes an appropriate balance of access obligations under the NGA State aid guidelines and is accepted at EU level (specifically with regard to the access conditions in paragraph 80 a) of the EU guidelines);
- For the Government and Ofcom to engage with the industry in a consultation on rendering universal broadband coverage commercially viable, relying on end customers to pay and, where relevant, on changes to charge controls to accommodate adequate returns; and
- For the Government and Ofcom to support any policy changes necessary to facilitate the use of cost effective technologies for delivering universal broadband.

We believe the focus must increase on dealing with the final 5% of premises without fast fixed broadband and the remaining parts of the UK without mobile broadband coverage. These areas are the least likely to benefit from a commercial solution, even with significantly enhanced take-up and actions to reduce costs of deployment.

This need for intervention can be minimised by ensuring effective investment returns on the deployments already made, with long term regulatory certainty and consistency of regulatory treatment across the converged market areas, coupled with actions to drive take-up of the superfast services. The higher than forecast take-up of superfast services in the BDUK deployments to date has already allowed BT to commit to return £129 million of current funding back to the deployment programme to be re-invested in going further with superfast coverage.

BT is confident that with appropriate support from Government current technologies can effectively deliver a fibre footprint out to 99% of the UK, but a full 100% commitment at superfast levels is unlikely to be cost effective. Achieving that goal for the UK needs Government action to deal with not-spots in cities as well as rural not-spots.

The socio-economic benefits of broadband that come with universal availability are widely recognised and mean that benefits flow to a much wider group than just network investors, e.g. Analysys Mason's study for DG Connect, which concludes that "*this principle [of universal availability] should drive the policy agenda of the European Commission.*" Therefore while superfast everywhere is an appropriate ambition, the evidence suggests that much of the social benefits can be delivered with a good speed if made available to all. There may therefore be options to deliver this good speed more cost effectively universally than a minimum speed of 30Mbps.

Defining a good level of availability

Ofcom have already conducted significant research and analysis into what might constitute a good level of service through the work they have done via their infrastructure report and in particular the analysis of download data volumes of users by access speed. Ofcom concluded that although speed was important…

> **"*There is emerging evidence that a typical household requires a download speed of around 10Mbps. Below this level, demand is likely to be constrained."***

…other factors were also found to be important, and in particular:

> **"*The quality of the broadband experience is not solely dependent on the access speed as supplied; factors such as in-home wiring and peering arrangements between internet service providers can also be important. Indeed for connections with a download speed greater than 10Mbps, access speed appears to become less significant than these other factors."***

We would also add that other factors such as capacity (limitations on capacity often drives usage caps) and line performance (delay (latency) and jitter characteristics) are also important for customers. We would broadly support a definition of a 'good' service of between 5Mbps and10Mbps, but would suggest that other user and network requirements beyond simple access network speed should be taken into account.

Delivering a good service for all

Ofcom's discussion paper suggests that a broadband speed of around 10Mbps may be appropriate as a Universal Service Obligation. The previous Government proposed consideration of a 5Mbps USO. BT does not agree. It is one thing to define what a good broadband speed is in the modern world: it is quite another to suggest that there ought to be a Universal Service Obligation imposed on one or a number of operators to deliver it. Consideration of a USO has to take into account a wide variety of factors, the universality of needs, the benefit to end-users, the costs of deployment, the proportionality of the obligations and the legal vires.

BT is not convinced that the evidence produced in Ofcom's discussion document, drawn from their research – paragraph 7.35 and figure 18 – and which shows a positive correlation between line speed and monthly data usage, supports the conclusion that the increase in monthly data usage by customers with speeds up to 10Mbps suggests that 10Mbps is an appropriate minimum speed. The two datasets – data usage and speed – are very likely to be driven by an underlying variable of customer data need: end customers with limited demand for data usage tend to be happy with slower speeds and have little need to download large amounts of data, resulting in the effects that Ofcom observe.

In BT's real-world experience, various facts point towards 5Mbps being a better judged minimum. In BT's superfast broadband deployment, for example, take-up of superfast broadband is a function of

existing copper line speed. We see a clear inflection point at about 4-5Mbps: if existing copper line speed is below that level, take-up of NGA is higher. At speeds ranging above 4-5Mbps, take-up does not appear to be differentially influenced by increases in existing copper line speed. Other data points are also available: for example, in Ofcom's "Availability of communications services in UK cities" report of June 2014 the data shows that typically 75% of customers on sub 2Mbps lines in cities have a faster service available to them and concludes "*that while most connections of less than 2Mbps were able to upgrade to an NGA service, they were choosing not to do so."*

Whatever definition one seeks to put on 'good' broadband speeds, it would be inappropriate to leap to the conclusion that such a service is now universally required. According to Ofcom data, 15% of premises do not require a fixed line at all, and of fixed line customers, only 80% take-up a broadband service at all and of the 80% that do a substantial number are content to use lines of less than 5Mbps to 10Mbps. This is not compelling evidence of a need for a universal service obligation.

On the other side of the equation, no attempt has been made to identify the costs of meeting such an obligation, or of the proportionality of imposing this cost obligation or of policies to support the fulfilment of the obligation.

It would be inappropriate to conclude that a universal service obligation, even if the evidence supported one, should fall on fixed line operators. Terrestrial wireless (4G) and satellite technologies are also capable of delivering wide coverage of good broadband, indeed near-universal coverage in the case of satellite. This must be taken into account in considering what role fixed line operators should have.

Ofcom and the Government should consider carefully the limitations of the Universal Services Directive (USD), which does not provide for a broadband USO, and the guidance around the USD, along with consideration of the other European precedents, none of which approach the 10Mbps threshold. It would be inappropriate to over-interpret the provisions of the USD at a time just prior to its receiving a full review at European level.

It is also clear that delivering a 5Mbps to 10Mbps broadband service universally for fixed line operators would have a disproportionate cost burden compared to any benefits to the provider – otherwise there would already be coverage plans and no need for intervention. Such an obligation would be a massive increase in the cost burden from the current requirements. The costs of different universal speed obligations need to be weighed carefully in the balance relative to the supposed universal need. Lower speed requirements would obviously lower the cost burden and should be fully considered along with speed benefits.

Given the various legal and EU regulatory complications, for example the need to consult on any change in USO conditions or revised guidance on what would constitute the obligation, it is clear to BT that simply creating a new Universal Service Obligation for broadband and either imposing it on existing USO operators or inviting bids from other providers is not straightforward. Any intervention would also need to satisfy EU State aid and procurement rules.

However, BT is keen to support the achievement of a public policy commitment. We need a regulatory and Government policy environment to bring about a commercially viable case to meet this goal, as we confirmed in our announcement on 22 September.

The key question is who will pay for this burden? There are only four options in principle, none of which is entirely satisfactory.

1. The Government could fund it: as noted above, we think a phase 3 BDUK scheme to get circa 99% of the UK to fibre broadband, typically of 24Mbps or 30Mbps depending on the definition of superfast, is the best long term solution for the UK. We believe the case for economic and social benefits of such an investment is very strong, much stronger than some other much larger Government infrastructure investment programmes. However, we understand there are limitations on how much investment the Government wishes to make to achieve this goal. Also, we believe

the Government would face challenges in seeking State aid approval for funding networks that did not deliver superfast speeds.

2. BT could fund it, under a legal universal services obligation of 5Mbps to 10Mbps: we think it would clearly be an unreasonable burden to impose an obligation costing billions of pounds on BT shareholders' capital for an investment without a positive return. (The same applies to other existing USO providers.)
3. The industry could fund it: it is of course permissible to construct an industry fund to pay for a USO obligation. While it would be fairer to share the burden between all CPs, BT anticipates that an industry fund will not be viewed favourably by our CP customers and note that in the past the idea of a telephone tax provoked political opposition.
4. The customer could pay for it: this would not be a legal universal service obligation, but would be a universal service commitment, a development of the USC BT has already helped deliver for the Government this year (at 2Mbps). The Government and Ofcom would need to make it commercially viable for the industry (BT and others as they wish) to deploy networks to all premises (subject to cost limitations), primarily by allowing providers to charge customers extra for the upgraded networks. Ofcom would need to adapt its regulations and charge controls, the Government and Ofcom would need to support the use of cost effective technology solutions and the Government may be persuaded to adapt the terms of existing subsidy arrangements.

It is for these various reasons around the evidence of benefits and impacts on cost that BT has announced its support for a universal broadband commitment of 5-10Mbps and that we stand ready to work with Ofcom and Government to progress this if it is made commercially viable.

4.4 Convergence and changing market structures

This section of our response addresses Questions 4 and 5 in section 8 of the discussion document.

Ofcom's overarching issue

"Does convergence and consolidation in our sectors suggest new approaches or tools are required to deliver effective competition?"

Summary of BT's response

Convergence and consolidation are not new but continuing phenomena in the communications sector. Their continuation increases the need for Ofcom to fulfil its remit as a converged regulator. The asymmetric approach to regulation across fixed access services (i.e. voice and broadband access services) versus Pay TV presents a major barrier to effective competition in converging markets.

Ofcom should fulfil its remit as a converged regulator by regulating all relevant sectors with a coherent, consistent and targeted approach, and should adapt its activities to prioritise clearly evidenced instances of competition failures and consumer harm. If it does not, market outcomes will be distorted by regulatory imbalances rather than competitive dynamics.

Continued consolidation is inevitable, driven by the underlying economics of the industry: Ofcom should not resist reasonable consolidation which promotes investment and competition, but should adapt its approaches to regulation to ensure that competition is protected all the same.

BT's answers to Ofcom's questions

***Question 4**: Do different types of convergence and their effect on overall market structures suggest the need for changes in the overarching regulatory strategy or specific policies? Are there new competition or wider policy challenges that will emerge as a result? What evidence is available today on such challenges?*

Consolidation

The industry structure today is the result of ten years of consolidation. Indeed Ofcom understood at the time of the last strategic review that the market would consolidate, and some of its actions – e.g. prioritising infrastructure-based fixed line competition – were designed to encourage it. Most of the operators Ofcom was concerned about in 2005 have been consolidated into the key players in the market today – Demon, AOL, Tiscali and HomeChoice into TalkTalk; Thus, Energis and Cable & Wireless into Vodafone; Easynet into Sky; NTL, Telewest and Virgin Mobile into Virgin Media.

The driver of consolidation is economic pressure from long term declining revenues and high investment costs, which drive organisations to seek greater economies of scale and scope in order to support adequate returns to investors. BT's view is that this will continue.

Ofcom's attitude to consolidation needs to reflect the particular transactions in question. Horizontal consolidation within a market (e.g. from four networks to three in mobile) presents significant competition challenges that will have to be resolved. Whatever remedies the merger control authorities put in place, Ofcom will have to exercise its powers to protect competition and consumer outcomes in the long term. Cross-market consolidation (fixed to mobile) obviously does not present the same competition issues, as they do not result in changes in market structure. Ofcom already has the full set of tools it needs to regulate markets – other than in relation to Pay TV – whose structure has not experienced any significant change.

Convergence

Using the three layer taxonomy of convergence that Ofcom sets out, BT's view is that convergence is very well advanced at the retail level, is advancing in relation to specific services at the services level and has yet to advance at the network level.

At the retail level, the convergence of Pay TV and broadband into triple-play bundles in the consumer market is well advanced and will continue to advance in years to come. As a result, it is of the utmost importance for good consumer outcomes that Ofcom takes action urgently to ensure that regulation is applied consistently across all components of the bundle, because market outcomes are being heavily distorted by regulatory imbalances.

BT has about 30% share of retail broadband connections in the UK and a share of about [✂] of superfast connections at the wholesale level. When BT is supplying broadband in triple-play bundles, we purchase inputs from the wholesale fixed access market on an equal access basis and follow highly regulated gaining provider-led switching processes, with restrictions on save calls and marketing practices, in the retail market. In contrast, Sky, which has a 75% share of the retail Pay TV market by revenues and an 80%+ share of the upstream premium sports and premium movies markets and whose wholesale products are important drivers of Pay TV subscriptions, is subject to limited, and ineffective, wholesale regulation and is not subject to gaining provider-led rules or restrictions on save calls and marketing practices. It is impossible to justify such a disparity as being objectively justifiable or an appropriate prioritisation of regulatory effort to issues of greatest customer harm.

Convergence at the retail level between fixed and mobile is, to date, limited and not as advanced as retail convergence between broadband and Pay TV in the UK. It is more developed among business customers, who are content to buy fixed and mobile services from the same supplier. This is typically done by means of cross-selling not through single-contract bundling. It is notable that the cross-selling of fixed and mobile is not as advanced in the UK as in some European countries. We believe that this arises from the fact that customers' purchasing behaviours differ across fixed products (which tend to be a household purchase) and mobile services (which tend to be an individual decision). We anticipate that there will be opportunities for more cross-selling for many operators in future.

It should be recognised that strong competition, underpinned by strong consumer protection, should enhance competition in converging markets. With the appropriate information and empowerment, customers are well equipped to choose between bundled services and stand-alone services cross-sold by suppliers, and suppliers are well positioned to construct attractive bundles, responding to customer preferences, customer value and customer buying power.

Market consolidation and convergence may result in even more vigorous competitive rivalry. While consolidation may imply a reduction in the number of providers in certain markets, these consolidated entities may have increased scale and scope and vertical reach, enabling each to compete more effectively across the entire value chain. Neither convergence nor consolidation in principle implies a reduction in competition in principle; each case has to be considered on its merits.

At the services level, some services are clearly close substitutes that were once obviously separate. The notable example is of course voice services. It is increasingly difficult to sustain the economic view that fixed and mobile voices services are not substitutes when mobile has in fact displaced most of the fixed voice market, even in the home. Other services have yet to converge fully but may do in future. 3G mobile was not a close substitute for fixed broadband, but 4G mobile has the potential to be a close substitute for standard speed fixed broadband. If that unfolds, it will call into debate whether fixed access and mobile access are also substitutes and converged at the network level. Ofcom should be open minded to the possibility and prepare for it in its future market reviews that fixed exchange lines may not be a bottleneck in future.

At the network level, in one sense convergence is well advanced, but in another it has yet to advance at all. All networks are hybrid fibre, copper, wireless infrastructures: the only questions are when do

the networks switch between these forms of transmission? The core is all fibre, the backhaul is a mix of fibre, copper and microwave and the final connection almost always wireless, either by WiFi or mobile connectivity. On the other hand, beyond the provision of backhaul and core transmission on converged infrastructure (as in BT's 21CN network), the fixed and mobile networks access networks are fully separate in the UK. It is possible, though the commercial case and technology solutions have yet to be found, that cross-market consolidation will present opportunities for increasing convergence of access networks. BT's own femto-cell solution is a forerunner of possible access network convergence in a way that might improve customer experience in future. However, the technology and business case is not yet proven and is still subject to high risk.

Regulatory implications

In respect of market, service and network convergence, we believe that Ofcom will need to give further consideration to a number of issues, in particular, how these forms of convergence will impact and change existing regulatory policies and approaches; for example, current market definitions in the context of mobile and fixed voice substitution and greater consumer empowerment by means of supporting the competitive process on the switching of bundles (irrespective of platform and service). Similarly, convergence in underlying technology (IP) may also give rise to other regulatory issues, for example, the need to review the General Conditions and certain existing PSTN type obligations to facilitate technology transformation.

Service convergence more generally

The communications industry is transitioning from network-embedded functionality to applications carried over ubiquitous broadband IP networks (fixed, wireless and cellular). This is a fundamental technological transformation of the industry, which BT anticipates will bring many benefits. It creates challenges for Ofcom, as often historic regulation is based on assumptions about network technologies. The key point about this transformation to IP is that the applications customers demand – TV, voice, messaging, social media and cloud services of all descriptions – will become increasingly detached from the networks that carry the traffic.

As a result convergence is blurring the distinction between fixed and cellular services. Historically the cellular world involved telephony services delivered over licensed spectrum bands whereas WiFi was a wireless end extending the fixed network over short distances for users with low or no mobility requirements.

Devices – especially smartphones and tablets – developed the capability of using WiFi as an alternative to cellular connections in order to minimise customers' bills. This has been very successful: it is estimated that up to 80% of the traffic generated by smartphones and tablets is actually carried over fixed WiFi networks, usually at no incremental cost to the customer. However, the networks have remained separate, the device connects to both quite independently and the device determines when to use cellular and when to use WiFi.

Three new technologies may blur the fixed / WiFi / cellular distinction in future:

1. **Voice over WiFi**. This technology, already launched by EE in the UK allows a smartphone to use a WiFi bearer as if it were a native 4G bearer. Essentially, the WiFi link temporarily becomes part of the 4G radio access network and is used to carry 4G signalling as well as media traffic.
2. **Licence-Assisted Access (LAA)**. This technology allows 4G mobile networks to use unlicensed spectrum (the same bands that are used for WiFi). In current versions of LAA, the unlicensed 4G carrier is tied to a licensed carrier (which may come from a different cell) which carries the signalling. LAA has the potential to increase the capacity of 4G networks significantly, particularly indoors as all MNOs have access to unlicensed spectrum. The main user benefit is that LAA could provide a much more seamless transition from macro cellular to

local (free) wireless access without the device needing to connect to a completely different network. This approach would support mobility between very small cells, for example, and also allows very high density deployment of femtocells.

3. **Evolved Packet Core**. This is a core network architecture that provides a range of capabilities for IP networks, regardless of whether they are fixed or cellular. It is already possible for converged operators to run a single evolved packet core network that provides services over both fixed and mobile IP networks, with common authentication, functionality, billing interfaces, provisioning and so on. This technology is ideal for supporting converged products and services.

It is BT's view that these developments will pose regulatory challenges to Ofcom, including in defining markets. We do not consider that these will have any impact on the regulation of Openreach. With equal access to Openreach's fixed access network in place, all fixed and mobile operators have access to the same Openreach products on the same terms. Therefore, all MNOs have an equal opportunity to develop converged networks using voice over WiFi, LAA and evolved packet cores if they so choose and furthermore they can make these capabilities available to their MVNO partners. Nevertheless, convergence may require some refinement of some current policies and regulations downstream of Openreach, which we consider below.

Some industry processes will need to be updated

Greater convergence means the need for a common switching regime across all elements of consumer bundles. It is important that the consistent switching regime prioritises good customer experience. It is important that Ofcom focuses on putting right the egregious examples of inconsistency causing consumer harm, particularly the fact that cable and Pay TV operators are free from the regulatory constraints on BT and LLU operators.

There are also some other industry processes dating largely from the circuit-switched era which will need to be reviewed and possibly changed. These include:

- **Number management** – In the context of increasing VoIP services, it would be more efficient for there to be a central database[16] to manage numbers. This would also allow numbers to be issued in smaller volumes, or even individually.
- **Number porting** – A centralised number management database could also improve the number porting process: there would be no need to enter into bilateral relationships between CPs and the current slow and unreliable process could be replaced by a quick and efficient process coupled with effective feedback facilities.

Some regulations require revision for the IP / Application world

Ofcom should consult specifically on regulatory policy in the context of an IP / application market. We consider OTT issues in more detail in our answer to Question 24, but there are regulations within the access market that require further review. We have selected two examples to illustrate the point.

Example 1: General Condition 3 (Proper and Effective Functioning of the Network)

Historically providers of voice and broadband services have either had end to end control over the service and underlying network or have had contractual relationships with those that do (such as Openreach).

- In the context of IP / Applications, it is less clear how Communications Providers would effectively comply with General Condition 3 (GC3). For example, providers of voice telephony may have no control over, or knowledge of, the underlying IP networks used to carry their calls, and IP network

[16] The 'numbering database' could be a set of distributed and synchronised databases using a similar model to the DNS servers used to route internet traffic.

operators may have no control over the applications carried over their infrastructure. Both parties have a part to play in delivering GC3 but neither can discharge the responsibility alone.

- BT believes this problem can be readily resolved but it requires GC3 to be expressed in a form that does not pre-suppose that the communications provider has end-to-end control over the network, or that network operators have control of applications.

Example 2: General Condition 4 (Emergency Calls)

This condition requires CPs to offer voice access to 999 with location information provided – where feasible – when the call is answered. BT recognises there is considerable value in the 999 service, but questions whether GC4 prescribes the best 999 service possible in an IP/applications world.

BT believes that the whole concept of access to the emergency services and location information needs to be revisited, given that around 80% of 999 calls now come from mobiles, and the growing prevalence of connected devices that are not capable of making voice calls.

PSTN operators go to considerable lengths to provide accurate location information alongside 999 calls. Mobile and VoIP operators have historically been unable to provide accurate location information and messaging / social media have not been part of the 999 service at all. Modern mobile phones with GPS know exactly where they are and it may be appropriate to place obligations on device manufacturers to provide GPS location information alongside emergency calls. Similarly, it may be more efficient with IP to use IP addresses to identify location than information associated with access lines. Rather than insist that location information is supplied when the call is presented, it might be more appropriate to require it to be immediately discoverable in the event that the caller cannot describe their location. Finally, it might also make sense to include text, IM and even social media interfaces into the 999 service as there may well be situations where people have a connected device but no voice capability. This approach could also cater for devices that might need to connect to the emergency services, although safeguards may be required.

***Question 5**: Do you think that current regulatory and competition tools are suitable to address competition concerns in concentrated markets with no single firm dominance? If not, what changes do you think should be considered in this regard and why?*

Yes, the tools are suitable, but changes in their use are required.

Ofcom has an enormous array of competition and regulatory tools at its disposal, more comprehensive than any other sectoral regular, including its dispute resolution powers, and it works in a system that combines other competition and merger authorities, also with wide-ranging powers. No further powers are needed. On the contrary, Ofcom must be disciplined in keeping to the powers that it has, not over-reaching them.

It is important to distinguish between ex-post competition tools, merger control tools and ex-ante regulatory tools.

The regulatory regime for Pay TV should however be updated to align it with the market review process and appropriate regulation of SMP that applies to telecommunications services, and we urge Ofcom to press Government and the European Commission, as appropriate, for such legislative changes. Sky has had a retail market share over 74%, persistently high profitability and ineffective regulation for over ten years, to the detriment of customers: Ofcom should focus its attention on these obvious priority problems.

Where there is no single firm dominance, there can be no presumption that markets are failing. Ofcom should not intervene where the evidence is unclear. Ofcom has the power to deal with abuses of competition law, under Article 101 as well as Article 102. Ofcom has the power to send a whole sector to the CMA for a market investigation if there are features causing adverse competition effects. These

should be sufficient for the public authorities to deal with issues arising in concentrated markets where the evidence is clear.

The merger control authorities are also obliged to protect against any significant lessening of competition in merger cases. Whether in the CMA or in the European Commission, the authorities conducting merger processes must look at the evidence carefully, and not be swayed by unsubstantiated allegations motivated by obviously self-interested corporate rivalry. Ofcom should support the merger control authorities, as indeed it does, so that they can gain the benefit of Ofcom's greater experience of the UK sectors. But in the end, Ofcom will have to live with the remedies imposed by other bodies and take them into account in formulating their regulatory strategies going forwards.

4.5 Strategies for sustainable competition

This section of our response addresses Questions 6 to 10 in section 9 of the discussion document.

Ofcom's overarching issues

"What model of competition should future regulatory strategy focus on: full end to end network; passive access to support end to end networks; or active wholesale remedies to deliver downstream competition?

"Are there new or unresolved competition issues in digital communications services?"

Summary of BT's response

- Ofcom should maintain its strategy of a) promoting infrastructure-based competition in fixed communications as deep in the network as would be effective and sustainable, and b) imposing single effective wholesale interventions accordingly. It should also ensure that its regulations result in a good customer experience.
- However, these strategic principles have to be applied judiciously on a case by case basis according to the circumstances of the product and geographic markets under consideration, with Ofcom being ever mindful of its duties to impose only proportionate, consistent and target regulations. There is no general answer to the question posed.
- There is no case for an overhaul of BT's passive products, and for them to be made cheaper (they are already low by international standards) or easier to use. The particular issue about the presence of vacant and useable (spare) duct has been considered in depth by Ofcom in the recent past, and the limitations are well understood by most in the industry.
- In terms of investment in FTTP, we suggest that Ofcom gives full consideration to the differences in the national circumstances in France, Portugal, and Spain, a consideration which is clearly supported by the two independent studies which Ofcom published alongside their Discussion Document. Investments in these counties have occurred in the general absence of a regulated GEA portfolio anywhere near comparable to that in the UK. The message here is glaringly clear. We very much doubt the UK would be served by attempts to emulate the named countries which have tended to have poorer outcomes than those we have seen in the UK.
- A model of competition that is not proportionate and the least intrusive required to deliver effective competition has no legal basis under European law. To the extent that there are unresolved competition issues in communications services, we do not believe that the evidence would enable Ofcom to satisfy the high legal test required to justify a sweeping policy change towards passive remedies.
- For long term investments, above all investors need a stable regulatory regime. It is because Ofcom has ignored this requirement in its proposal in its Business Connectivity Market Review (BCMR) consultation for the introduced of a regulated dark fibre product that those competitors to BT who are willing to invest have reacted so strongly. We look to Ofcom to appreciate fully the strategic considerations which dark fibre raises. Ofcom should reconsider its proposals in this area: it should, we believe, promote infrastructure-based investment in competition with Openreach and see the value in end-to-end competition rather than resale with some value-added by downstream providers. Because of the strategic nature of dark fibre and the linkage to the wider issues raised in this consultation, it is clear that Ofcom should take any decision regarding dark fibre for Ethernet products as part of the Strategic Review not separately in the BCMR.

In its telecoms strategic review in 2005, Ofcom developed its strategy for the regulation of fixed line communications; namely, that it would seek to promote infrastructure-based competition as deep in

the network as would be effective and sustainable. Further, Ofcom's strategy was to impose a single effective intervention at the wholesale level, typically in the form of equal access to Openreach infrastructure, to promote competition downstream.

BT endorses these two strategic principles and recommends that Ofcom maintains them. On top of these, BT would recommend that Ofcom is mindful of a third key strategic principle, namely that its interventions should result in a good customer experience as well for CPs seeking to serve end customers.

However, these strategic principles have to be applied judiciously according to the specific circumstances of each individual product and geographic market under consideration. There is no general answer to the question as to how deep infrastructure-based competition can be sustainable. How deep competition can be sustainable is inextricably linked to Ofcom's own regulations regarding product interventions and charge controls.

In 2005, Ofcom concluded that investment in the copper access network was very unlikely in future. Consequently it set a tough charge control on copper access products, especially a very low MPF price, which, in BT's view, was set below its cost of capital. The charge control was a self-fulfilling prophecy: no competing copper access network has been seen since.

By contrast, in 2009, BT set about new investment in the access network, in its Next Generation Access programme. Ofcom did not set a charge control on Openreach's GEA products (which would have been extremely difficult in any event as the revenues and costs associated with the investment were extremely uncertain and risky). The result has been not only large investment by BT, but significant investment by Virgin Media plus a proliferation of other network operators making also investments, as set out in figure 25 of Ofcom's discussion document.

The lesson to be taken from this history is that in the application of its regulatory principles, and consistent with its section 3 duties, Ofcom should not assume that competition and investment in the access network is unlikely but should positively encourage parallel network investment where this might be viable.

In general, Ofcom should expect that in areas of high customer concentration and in respect of higher value products, end-to-end investment is more likely. In urban areas, in high value products – such as Ethernet – it is clear in theory and evident in the facts that competing end-to-end networks are possible and are present. In such circumstances, Ofcom should encourage end-to-end competition and should not undermine nor eliminate competition by imposing unduly interventionist remedies or draconian charge controls on Openreach. This is the mistake it is about to make in its BCMR and Leased Lines Charge Control.

It is essential that, at whichever point it determines is the right foundation for competition, Ofcom establishes a single effective intervention to promote the emergence of and competition between downstream providers. Too often in the past Ofcom was plagued with disputes as to the pricing and margins between two closely adjacent regulatory interventions (e.g. Datastream and IPStream). Ofcom rightly took the view that it did not want to promote business models which survived only on the arbitrage of regulatory pricing rules and margins. It has to consider which single intervention will be the best one for promoting a) sustainable downstream competition and also b) a good customer experience.

This is again a mistake that Ofcom is on the point of making in its BCMR. Imposing two equal access products – Dark Fibre and Ethernet Access Direct – closely adjacent in the same product value chain will result in margin disputes and regulatory arbitrage. Instead, Ofcom should consider which one of these possible wholesale interventions will promote a) the most (sustainably) infrastructure-based downstream competition, b) while not foreclosing upstream investment by competing networks and c) will result in the best experience in the use of the services by end customers, both in provision and in repair.

In Section 9 of the Discussion Document, Ofcom considers whether the UK has the right "model of competition" and whether this might be "re-focused" in order to improve consumer outcomes. In particular, Ofcom asks whether a strategic refocussing on a package of passive remedies might result in more effective sustainable competition that encourages innovation and competition on the quality of service offered. This could mean, for example, making passive remedies easier/cheaper to use; increasing the portfolio of passive remedies; changing the pricing of passive remedies relative to active products; and undertaking a managed transition from active to passive remedies.[17]

We do not consider that Ofcom has any basis to suggest that UK regulatory policy might need to be changed in such a material way. The policy approach for fibre regulation, which was introduced in 2010 through the Wholesale Local Access Market Review[18] has served the UK very well and there is every indication that this can and should continue. At the time, Ofcom carefully reviewed the economics of active and passive remedies and considered which were more likely to both encourage investment and support competition. Ofcom concluded that the Openreach active product (VULA) offered the deepest sustainable (and cost effective) point of competition, and that the alternative passive remedies available, PIA and SLU, would only ever be complementary, and desirable and effective only in specific circumstances, due to their challenging economics.

Without strong evidence that circumstances have changed significantly, a radical change now would be completely unjustified. It would result in the imposition of unwarranted and disproportionate regulatory burdens and, to the extent that a large policy shift might represent a reversal from the 2010 position, it would damage Ofcom's reputation for being an evidence-based regulator and one which provides the UK with the regulatory consistency needed for investment. This latter attribute is particularly important to encourage investments with very long term paybacks and hence for dynamic efficiency. Indeed, a policy which in effect undermines NGA investment made from 2010 (both by BT and Virgin Media) before they have had chance to provide investors with a return would be very damaging for planned further tranches of investment, including the upgrade from superfast to ultrafast broadband.

We also consider great caution is needed in adopting policies applied in other countries, where very different circumstances apply and where outcomes have not been as good as those achieved in the UK. That one type of entry has occurred in a handful of countries throughout the EU does not provide a basis for adopting such a policy in the UK, especially as such entry has occurred *in the absence* of active remedies on which around 150 CPs in the UK rely.

To give one example, we estimate that only around 11% of consumers in Portugal are served by CPs other than the former incumbent or cable companies (that is, by a supplier which does not have a full end-to-end network); in the UK this is circa 50%. For consumers, choice in Portugal is between 2 or 3 suppliers at best.[19] That Ofcom seems to be considering Portugal as a model when customers there have far less choice than in the UK does not appear warranted.

Ofcom should also be mindful of the assessment by WIK-Consult (hereafter, WIK) which substantiates the importance of country-specific factors:

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[17] Discussion Document, paragraph 9.63, bullet 4

[18] Review of the wholesale local access market – Ofcom Statement, 07 October 2010. Ofcom concluded there that (para 1.26), *"At this point, we consider that VULA is likely to be the main basis for NGA competition over BT's network, to supplement the continuing effectiveness of LLU, over at least the next four years. Our economic analysis suggests that VULA is very likely to be the most cost-effective NGA remedy and the remedy most likely to emulate the level of competition currently delivered by LLU. However, we think that access to BT's ducts and poles, and to a lesser extent SLU, could also play a part in supporting competition, as well as investment in NGA. Partly, this is because VULA will only be available where BT deploys its NGA network."*

[19] Between Portugal Telecom (MEO); a cable operator; and Vodafone, which has a 10.6% market share according to AM.

"Based on our analysis of 12 countries, we conclude that NGA access regulation is less likely to determine NGA coverage than widespread infrastructure-based competition (for example between the incumbent and cable provider), demand factors and other factors such as the technical solutions adopted (DOCSIS 3.0 and FTTC can be deployed at lower cost than FTTH) and demographics, such as the urban density and prevalence of multi-dwelling units, which also lowers the cost of deployment."[20]

These points are discussed further in our responses to Ofcom's questions 6 and 7 below.

Question 6: *What do you think is the scope for sustainable end-to-end competition in the provision of fixed communications services? Do you think that the potential for competition to vary by geography will change? What might this imply in terms of available regulatory approaches to deliver effective and sustainable competition in future?*

Scope for market entry offering end-to-end competition

Recent experience suggests that there now is scope for more end-to-end competition, not based on either LLU or VULA. Most significant is the announcement of Project Lighting by Virgin Media to expand its footprint to cover by 4 million premises to 17 million premises, nearly 60% of the UK total. However, investment is not just limited to Virgin Media and a number of other suppliers have been investing, as Ofcom notes in figure 25.[21]

In assessing the scope for sustainable end-to-end competition in the UK, it is important to remain firmly focussed on the supply and demand conditions that apply to an investment in the UK. As highlighted in the Analysys Mason (AM) and WIK reports, country specific factors have a huge influence on investment viability, as we discuss in response to Question 7 below.

Further, in assessing the scope for sustainable end-to-end competition it is particularly important to take account of the UK's current strong position with NGA availability as this has a significant impact on the viability of any proposed investment. Looking around Europe, we note that there is little commercially driven investment in end-to-end infrastructures in circumstances comparable to the UK, where cable operators and incumbents have deployed superfast broadband and active remedies are in place on the incumbent.

The economics of end-to-end competition largely dictate that the potential for such entry will be concentrated in more densely populated areas where the deployment costs are lowest. The importance of deployment costs is evident from Virgin Media's current footprint (i.e. concentrated on denser areas) as well as its recent Project Lighting announcement whereby it plans to focus expansion in close proximity to its existing footprint.

Implications for policy

In setting regulatory policy, Ofcom first and foremost must take account of the supply and demand conditions that apply to the specific product and geographic markets in the UK.

The current policy (established in 2009 and 2010) has served the UK well as evidence by it strong position on NGA availability versus the other leading economies of Europe. A radical change from the current policy will give rise to risk and uncertainty that may impact the UK's position in the future.

In Ethernet, Ofcom has similarly adopted a strategy of progressive liberalisation of products and geographies, as downstream competition has flourished. It is very disappointing that Ofcom proposes to reverse this trend in its recent BCMR proposals.

[20] Competition & investment: An analysis of the drivers of superfast broadband, WIK July 2015, Executive Summary, page XIII.

[21] Discussion Document, Figure 25

We also note that where entry has occurred (in more densely populated geographies) this has occurred under very different regulations from those in the UK and largely in the absence of active remedies.[22] The clear implication is that if Ofcom is seeking more such entry, then this is likely to involve significant geographical variation in regulation and material changes to the regime as it has applied in the UK.

We note, for example, that Ofcom's approach to date has tended to wait for entry to be established and only then to reduce regulation. Ofcom should reflect on the fact that this reactive approach limits entry and could be replaced by one which is more proactive, for example to withdraw the obligation for BT to provide active remedies on a non-discriminatory basis in dense urban areas.

Question 7: *Do you think that some form of access regulation is likely to continue to be needed in the future? If so, do you think we should continue to assess the appropriate form on a case by case basis or is it possible to set out a clear strategic preference for a particular approach (for example, a focus on passive remedies)?*

Requirement for some form of access regulation

We accept that some form of access regulation is likely to continue to be needed in the future, in some parts of the country where there is no parallel competing infrastructure. However, that need is not universal. For certain services in defined regions this may not be the case, as Ofcom has found for business access services in WECLA. In the years to come we expect the size of those competitive areas to grow. The prevalence of competing networks in metropolitan areas has never been properly and fully reflected in Ofcom's geographic market analysis in successive BCMRs.

The exact geographical boundaries are clearly a matter for market reviews, through the standard process of market definitions and assessment of SMP.

Strategic preference for a particular regulatory approach

Ofcom also asks whether it is possible to set out a clear "strategic preference" for a particular approach to access regulation. The inference is that the case by case approach to regulatory policy on this issue in Ofcom's past market review decisions has not been sufficiently "strategic" in tending to weight short term effects (static efficiency benefits) above longer term ones (dynamic efficiency benefits).

We do not agree. It is important that Ofcom adopts regulatory strategies that are consistent and predictable through time, as infrastructure investors of all varieties need to have a predictable regulatory back drop on which to make investment decisions. Ofcom has maintained a consistent preference for passive remedies in low value maturely established national products, such as in copper access; a consistent preference for active products in high value networks being actively deployed de novo, such as Ethernet; and a consistent approach to virtually-unbundled active remedies in NGA since its first policy consultation in 2008[23] through the 2010 and 2014 market reviews. The consistency of these approaches through time, each adapted to the particular product markets, is important and appropriate. A theoretical attachment to one of these three approaches in all circumstances, ignoring the nature of the products involved in each specifically, cannot be justified and would not be consistent, in BT's view, with Ofcom's regulatory duties for proportionate, targeted regulation.

Ofcom interprets the experience in France, Portugal and Spain as providing some substantiation for the view that there needs to be a change in approach to one favouring passive remedies on a more 'strategic' basis. But investors in these markets face different supply and demand conditions than

[22] For example, there have been no wholesale FTTH products in Spain or any FTTC products above 30Mbps.

[23] Delivering super-fast broadband in the UK, Ofcom Consultation: 23 September 2008

those in the UK, and Ofcom should be extremely wary about inferring too much from these examples, particularly as they were not subsequent to the roll-out of superfast broadband.

We note here WIK's conclusions of their assessment of the UK outcome and regulatory regime[24]:

Comments on WIK Assessment on the UK

WIK Conclusion	**BT comment**
1. **Commercial incentives** - policies which incentivise infrastructure-based competition are likely to continue to yield positive outcomes for NGA deployments today and in the future.	We agree, and Ofcom should not underestimate the huge benefits from competition between BT and Virgin Media, plus fledgling new entrants.
2. **User requirements** - consideration should be given to consumers' needs in shaping regulatory policy. Strategies which explicitly seek to favour FTTH may not necessarily match user requirements for bandwidth.	We agree, and do not see that there is sufficient user-demand for mass market FTTP, especially given the enhanced performance of copper loops, in particular via G.Fast. Widespread FTTP roll-out would be very expensive and slow to implement; and neither Australia nor New Zealand suggest this route is likely to be advantageous.
3. **National circumstances** - there is no 'magic bullet' as regards regulatory approaches, as they are affected by national circumstances... approaches in the US, Canada, Korea and respectively Australia are in many cases not applicable in the UK. Some outcomes in those markets are substantially worse than in the UK.	We agree with this observation. Countries outside the EU have followed different policies, with different outcomes which, on the main metrics, have fallen short of those achieved in Europe. Further, small, densely populated countries like Singapore, with a high concentration of MDUs, do not provide a good benchmark for the UK.
4. **Choice of suppliers for end-users** - access regulation may play an important role in enabling choice where infrastructure competition alone would be insufficient to achieve this. Experience from basic broadband markets suggests that choice can be a driver of price and speed innovation, and support uptake in the early deployment phase.	We agree - the combination of Virgin Media and EOI on BT's services provides the enabling of choice which WIK highlight – the extent to which is not present in France, Portugal or Spain.
5. **Passives approach** - the degree (and geographic scope of) infrastructure-based competition in European countries which focused on competing NGA infrastructures, may provide some useful insights as to the potential as well as the limitations of passive approaches.	We think caution is needed in reading across from one country to another, principally due to differences in national circumstances. We note further that where passives have been successful, active remedies have been absent and very different regulation to that used in the UK has been in place. Passive products are of course already available in the UK.

[24]Competition & investment: An analysis of the drivers of superfast broadband, WIK July 2015. Table based on a précis of their assessment on page 82.

6. **Related issues** - On the basis that cost as well as demand factors (such as online video, publicity around high bandwidth connections) may affect NGA outcomes, there may be a case to focus NGA policy on areas beyond economic regulation.	We agree - one of the key drivers in NGA investment in other countries has been for the delivery of premium content, but in the UK access to such premium content is a major impediment.

Regulatory Policy in Portugal, France and Spain

As noted above, WIK suggest that that Ofcom might find insights from other European countries which have focused on encouraging competing NGA infrastructures and have seen FTTH entry. Regulation in such countries is certainly very different from that in the UK. For example, regulation in France, Portugal and Spain generally involves the following features not found in the UK:

- the absence of alternative regulated active products;
- mutualised infrastructure zones[25] and symmetrical wholesale obligations;
- commercial reciprocal access deals (involving the incumbent);
- vertical building operator regulation (on a symmetric basis); and
- in France, the use of non-telecoms duct.

As both WIK and AM make clear, both regulation and outcomes will also depend crucially on country-specific conditions and relevant considerations here include:

- the number and location of street cabinets;
- typical lengths for copper loops;
- housing density and the preponderance of MDUs (which has implications for the economics of FTTH);
- the availability of vacant duct space in the required locations; and
- conditions of competition in the Pay TV market as a driver for infrastructure investment.[26]

Such differences caution against making simple comparisons across countries where conditions vary across relevant factors. Key differences of particular note are that:

- FTTH deployment costs are much lower (around half) in Portugal and Spain compared to the UK;
- Long loop lengths in France mean that FTTC was never a viable option given the architecture of its network whereby the length of line between the cabinet and the end-user premise is significantly longer than that found in UK and other major economies;
- We understand that in both Portugal and France, there is an availability of spare duct. In France, vacant duct space is available via municipal sewers. In Portugal, duct availability reflects over-capacity in the past;
- Access to premium content has been a strategic issue in the UK and one which has not applied to the same extent in other EU countries.

[25] According to WIK, in France the access point applying to symmetric obligations is referred to as the 'mutualisation' point for the 'terminating segment' of the fibre loop. Its location is decided by ARCEP and can at the first distribution point outside the building.

[26] For example, Telecompaper Europe of Wednesday September 2nd, 2015 reported that over 3 million homes in Portugal have Pay TV, which corresponds to 76.4 percent of all households in the country. Elsewhere, we understand that in Spain, the incumbent has over 60% of the Pay TV market; and in France just under 40%.

Outcomes in France, Portugal and Spain compared to the UK

Further, we note that it is not clear that the outcomes from such an alternative approach would be superior to that in the UK – and current evidence suggests otherwise.

In terms of **speed**, Akamai's Q1 2015 State of the internet report shows that average UK internet connection speeds are 26% *higher* than in Portugal; 30% *higher* than in Spain and 55% *higher* than in France.

The UK and Portugal have comparable **fibre coverage**, which exceeds that in France and Spain.

The UK has more **retail competition** (Portugal basically has three competitors – the incumbent, cable and Vodafone), and a regime which enables smaller CPs to enter the retail market.

In terms of some specifics, WIK's review of passive remedies in France states:

"it is notable that, notwithstanding the higher degree of infrastructure competition in FTTH within urban centres, consumer outcomes in France fall below the average in the researched countries. In particular, take-up of NGA and usage of bandwidth is relatively low, while NGA prices remain above levels in the UK".

According to AM, in Portugal three suppliers account for 95% of the retail broadband market – the incumbent; a cable operator and Vodafone.[27] Vodafone is in effect the only substantial entrant without its own access network. In effect, only 11% of the market is supplied by a supplier which does not have a full end-to-end network[28] whereas the comparable figures for the UK is circa 50%. The obvious deduction is that, in terms of the number of broadband customers supplied, UK CPs make far greater use of the incumbent's access network than do competitors to MEO in Portugal.

WIK also highlight the fact that policy has not spread the benefits of competition very evenly:

"both France and Spain have experienced a gap between dense urban areas, in which there is a degree of choice, and less dense areas, in which there is limited or no choice of fast broadband provider".

Suggested re-focus of UK policy / enhancement of passive remedies in the UK

Against this background, we do not consider there is evidence to support the contention that UK outcomes would be improved by a re-focus on passive remedies. UK regulation and country conditions have been well-matched with very good outcomes achieved.

Nevertheless, Ofcom suggests that it could consider re-orientating policy by:

- mandating improvements to the product design and processes to make using passive remedies easier/lower cost to use. For example, a duct paths and location database could be introduced;
- increasing the portfolio of passive remedies. This could involve making new products available, or adaptations to passive infrastructure access. Alternatively, existing passive remedies could be made available over a wider range of services;
- making passive remedies cheaper relative to alternatives; and

Taking this last suggestion first, we note that there is no evidence to date that, where active remedies have been in place, entrants of scale based on passive remedies have emerged in any country. Competition has been based on either a passives model (France, Portugal and Spain) or an active remedies model (UK, Germany). We note Ofcom's reference to access regulation in France, Portugal

[27] The other 5% of the market is supplied by the smaller cable operator.

[28] Figure for Portugal based on market shares reported by AM, "International case studies", Final Report for Ofcom, 19 July 2015.

and Spain, and the statement that passive remedies have promoted network investment in some European countries.[29] However, it must be recognised that passive remedies in these countries have been used instead of active remedies and their success as a foundation for downstream competition, investment and innovation does not exceed the performance of the UK, but lags behind it.[30] Where Ofcom states that, where passive remedies have been successful, they have been the primary focus of regulation[31] in fact it appears that, as far as extensive fibre deployment is concerned, passive remedies have essentially been the only regulatory remedy.[32]

Ofcom should therefore consider factual evidence on the extent to which competition has been established on both passive remedies and active remedies in any large country. We believe the evidence demonstrates that the two types of competition do not exist simultaneously. Ofcom should consider, we believe, the evidential finding that active remedies are more successful in delivering a large number of downstream competitors, their investment and their innovation, whereas passive remedies support a narrower base of competition.

Regarding the first suggestion, that passive remedies could be made easier to use, Openreach has been open to suggestions from industry as to how to improve the design and processes for all its products, and Openreach operates an agreed Statement of Requirements (SOR) process to facilitate such requests. It is worth noting that since the launch of Physical Infrastructure Access (PIA) in November 2011, Openreach has not received a single SOR for a product enhancement to its PIA products. This does not suggest any meaningful (but suppressed) demand.

Nor do we consider that the introduction of a duct paths and location database would meet the objective of making the current PIA product easier to use. We consider this would be a disproportionate obligation, especially for a product with no proven industry demand. Today, CPs can already obtain duct and pole locations on request through existing processes. However, once obtained the CP must then carry out a survey to ascertain whether the route is useable, e.g. whether the duct (or pole) has sufficient space for new fibre and is in good working order. This is exactly the same for Openreach which also has to survey the routes. The existence of a duct paths location database would not improve this experience or overcome the practical operational issues encountered when seeking to use Openreach's existing duct and pole assets – the need for a survey to establish if there is useable spare capacity.

These practical issues were themselves evidenced by Ofcom's own PIA surveys carried out prior to the introduction of the PIA product in 2010. Analysys Mason noted that:

"available space at the duct-end would not always directly translate into useable space for a CP willing to use the ducts, because (1) a duct might have collapsed somewhere in the section (2) the cable arrangement far into the duct may be such that existing cables cross over, and may prevent any

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[29] Ofcom DD 9.59

[30] Although AM report that these have recently been proposed in Spain.

[31] Ofcom DD 9.69

[32] In France, AM report that regulation of VDSL was introduced only in 2013, and that by July 2014 VDSL only covers 14.5% of all lines in France. In Portugal, fibre is overwhelmingly provided by FTTB/H, and the majority of broadband connections are in 'C' areas (ie deemed to be competitive) and thus not requiring active service regulation. In Spain, active products have not been required at speeds over 30Mbs.

As WIK describe the situation, page 37 (emphasis added),

"Other countries such as France, Spain and Portugal, have abandoned current rungs of the ladder of investment for NGA and focused on offering only higher rungs on the ladder of investment, such as duct access, sometimes with forms of subloop unbundling. This strategy essentially compels access seekers to invest in order to compete on NGA."

further cables being inserted in the duct (3) engineering rules may prevent unoccupied space being used (e.g. to limit disruption with other cables in the duct).”[33]

Ofcom accepted this and concluded:

“there is uncertainty about how this [unoccupied space] would translate into usable capacity, particularly in relation to poles. It is also clear that while PIA could considerably reduce the amount of new infrastructure construction required to deploy an NGA network, a significant amount would still be required to relieve congested segments and on routes where cables are buried directly in the ground without ducts, or where BT’s physical infrastructure is otherwise not suitable for sharing.”[34]

Further, the creation of a large database of Openreach assets would be a time-consuming and costly task that, of itself would be disproportionate, in that such a database would still be of limited use on its own, as location-specific surveys would still be needed. The costs would also need to be recovered, and we doubt very much CPs would really be willing to contribute fairly (for example, based on the number of lines they rent from Openreach).

On physical infrastructure prices, we further note that these were benchmarked against other European offerings at product launch and found by Ovum in 2011 to be favourably competitive and amongst the cheapest in the major European companies. For example, Ovum’s benchmark suggested the UK was c 20% below the European average in urban areas and, in rural areas, as much as 38% below average compared to France, Portugal, and Spain. Prices in the UK were subsequently reduced by 15-30% in Sept 2013 and are below replacement cost. All such reductions also have an adverse impact on competitors with their own direct access infrastructure, particularly Virgin Media,

As for new PIA products, or extending their applicability, we point out that Ofcom themselves have considered in depth whether to adapt and extend PIA usage in the previous two Business Connectivity Market Reviews (in 2010 and 2013) and during the Colt Appeal in 2013.[35] The November 2014 consultation on passive remedies also considered duct access in the current market review, which Ofcom proposes not to introduce in the current BCMR.[36]

Ofcom has recently proposed to mandate dark fibre in the UK for Ethernet services and BT has responded to this proposal in the May 2015 BCMR consultation. Rather than actually deepen competition, BT’s view here is that using dark fibre as a regulated remedy will undermine those suppliers who have been, and are, making end-to-end network investments, principally by decreasing the overall revenue likely to be earned from these investments. On all the fibre investment already made by all parties, this will be a huge and unanticipated commercial blow, and if such action is confirmed will clearly disincentivise future fibre investment, thus undermining infrastructure-based competition and innovation. This is particularly the case given the impact of the proposed price control where, in addition, BT considers that Ofcom’s belief that the risks of regulated dark fibre are mitigated by using “EAD minus” pricing is incorrect and active product sets and cost recovery will be undermined even at these price points.

Ofcom’s principal justification for introducing dark fibre rests on the assumption that dark fibre will facilitate innovation. BT believes that there is no evidence for this, and our view is that the move is only going to take value from the market and from those willing to make investments. We have therefore urged Ofcom to reconsider its policy in this area and to recognise that more access

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[33] Analysys Mason, Final report for Ofcom, Telecoms infrastructure access – sample survey of duct access, 3 March 2009. http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/ductreport.pd

[34] Review of the wholesale local access market, Statement on market definition, market power determinations and remedies, October 2010, para 7.5.

[35] Competition Appeals Tribunal, CASE NO 1212/3/3/13

[36] May 2015 BCMR Consultation paragraph 7.72.

regulation, and the promotion of one particular form of competition, does not inevitably lead to more investment and innovation – in this case, we think the result will be quite the reverse.

In this, we are not alone and there are very strong feelings about these impacts across the industry, with Virgin Media, Zayo, CityFibre and euNetworks forming a new industry group, the Infrastructure Investors Group (IIG). These are operators trying to provide exactly the kind of infrastructure competition Ofcom most prizes, but in the IIG's response to Ofcom's BCMR and LLCC consultations[37], they argue that:

"…*the remedies proposed by Ofcom in their consultations [dark fibre and harsh price controls] will not only destroy future competition in the UK telecoms infrastructure market, but may also reverse the great strides taken towards competition since the last BCMR."*

"There is nothing inevitable about investment in fibre networks. Large international investors, such as Liberty Global, Zayo and euNetworks are at liberty to invest in countries that most support independent infrastructure competition"

"Ofcom's proposed pricing for Dark Fibre Access will, at the very least, discourage further investment in independent infrastructure in prospectively competitive areas and could result in efficient competitors being forced to exit the market.

"By destroying both existing and future competition at the infrastructure level, BT's incentive to expand and upgrade its own network will be completely removed."

BT and other infrastructure providers are therefore clear that the introduction of a dark fibre access remedy will have a fundamental impact on infrastructure investment and competition. Even the proponents of dark fibre suggest that it will have significant impacts on the boundary of functional separation. The question of whether to introduce a requirement to provide dark fibre leads to a regulatory choice as to what level or levels of the supply chain are regulated. This in turn will have long run implications for the degree of competition at different levels of the supply chain and the prospects for any deregulation in the future.

In view of this, we believe it is imperative that Ofcom does not take a decision regarding dark fibre for Ethernet services ahead of and independent of the conclusions of the DCR regarding the kind of competition it is seeking to foster as part of its broader industry model.

<u>Regulating at multiple points in the value chain / challenges in setting efficient prices</u>

Further, as Ofcom notes, intervention at multiple levels in the value chain creates a risk of inconsistency (leading to inefficient investment decisions) and of encouraging business models dependent on regulatory arbitrage, because Ofcom will be providing the pricing signals which will guide investment decisions.[38]

This is a hugely demanding requirement, and it is unclear how Ofcom could set such prices on an objective basis. Nor does Ofcom set active prices at this time, which are restricted by a "retail minus" type approach via the margin squeeze test.[39] Ofcom should therefore explain their view on the practicality and proportionality of this task, given its important strategic implications.

To avoid inefficiency, Ofcom needs to focus on single interventions to support downstream competition, and to set access prices so that investment is incentivised when the benefits (in terms of

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[37] Quotes from the Response to the 2015 BCMR and LLCC Consultations by The Infrastructure Investors Group

[38] Discussion Document paragraph 9.70

[39] Ofcom also states that that investment incentives for regulated firms can be maintained by including compensation for risk. However, this principle has never actually been implemented in the UK and BT's active fibre products have not been subject to "cost plus with a risk allowance" regulation.

potential for competition and innovation) exceed the costs (due to duplication of assets which increases total industry costs).

Question 8: *Do you agree that full end-to-end infrastructure competition in mobile, where viable, is the best means to secure good consumer outcomes? Would alternatives to our current strategy improve these outcomes, and if so, how?*

Question 9: *In future, might new mobile competition issues arise that could affect consumer outcomes? If so, what are these concerns, and what might give rise to them?*

BT, in its current position as a provider of retail mobile services as an MVNO, considers that the situation at present in which MNOs as end-to-end infrastructure providers compete vigorously has delivered good consumer outcomes. In particular, BT notes that competition among MNOs has resulted in vibrant competition at both the retail and the wholesale levels. Competition at the wholesale level has in turn further bolstered retail competition due to the proliferation of MVNOs. Each of the MNOs currently hosts a wide variety of MVNOs.

Ofcom faces substantial changes in the mobile market place through the two active acquisition processes under way, BT's acquisition of EE and Hutchison's acquisition of O2. BT's acquisition of EE does not change any mobile market structure to any significant extent. There are four mobile network operators today and there will be four after the acquisition is completed, both at the retail level and at the wholesale level. As the two businesses are highly complementary, BT's view is that the transaction does not represent any significant challenges to Ofcom's established competition strategy in mobile, namely having four credible competitive mobile networks competing at the retail and wholesale levels, nor any significant challenges in the way it uses its powers to regulate communications markets.

Hutchison 3G UK's proposed acquisition of Telefonica UK, by contrast, does result in a substantial change in the UK mobile market structure, resulting in a reduction in the number of mobile networks from four to three, if it is approved. This could have implications for competition in retail and wholesale markets which are currently being examined by the relevant merger authorities. The combination will also cause issues in network sharing arrangements, as Hutchison/O2 will share both the MBNL and the CTIL / Beacon network sharing arrangements, with BT/EE and Vodafone respectively. While these are the obvious areas of possible concern, BT does not yet have a view on the severity of the issues, and looks forward to engaging with the process, in whichever jurisdiction it may fall.

The outcome of the merger control processes will naturally be decided by the merger control authority, DG Competition or the CMA. It will be important that Ofcom considers the competition implications of the transaction and is influential with the merger control authorities to ensure that competition is protected to its satisfaction, so that Ofcom can be confident that the vibrant wholesale and retail competition that currently exists in the UK will remain.

Question 10: *Does the bundling of a range of digital communications services, including some which may demonstrate enduring competition problems individually, present new competition challenges? If so, how might these issues be resolved through regulation, and does Ofcom have the necessary tools available?*

Introduction

Yes: bundling of Pay TV and telecoms services presents serious competition challenges for Ofcom – though these are not new. Ofcom's review of digital communications should include an assessment of the long standing competition issues in Pay TV, which are now spilling out and creating competitive distortions in the wider provision of communications bundles, and Ofcom should prioritise action on Pay TV.

Why bundling of content with telecom services presents competition challenges

BT agrees with Ofcom that for many customers, Pay TV is the most important part of their bundle.[40] As competition problems in Pay TV (including with respect to access to content and channels on terms that allow rivals to compete) have implications for the wider bundle[41], it is neither effective nor proportionate to seek to address competition concerns in telecoms services without also resolving the manifest and long-standing competition issues in Pay TV. Moreover, it is increasingly apparent that the increasing numbers of customers who have a preference for purchasing Pay TV and telecoms bundles are suffering from a lack of effective competition, with retail providers unable to compete effectively for these customers.

The competition issues in Pay TV arise due to high and persistent barriers to effective entry and expansion as a result of Sky's huge relative retail scale – a retail market share by revenue over 74% for over 10 years – which gives it insurmountable advantages in acquiring access to third party channels and upstream content for the assembly of its own channels. These insurmountable advantages are reinforced by Sky's vertical integration and a network of agreements, resulting from Sky's buyer power, which entrench its retail scale advantages contractually. Sky's relative scale also enables it to earn super-normal profits which help to fund platform investments that further entrench its retail scale advantages.

Asymmetric regulation in the rules applied to consumer switching – which favour Sky (and Virgin Media) over other, smaller scale providers of bundled communications services such as BT and TalkTalk – also reinforces these issues[42], and are particularly problematic in a market where switching is exceptionally low. Switching in Pay TV is considerably lower than for telecoms services[43] and in other industries tracked by Ofcom, and Sky's churn rates are also exceptionally low.[44]

The overall result of this combination of market features is an adverse effect on competition, with the consequence that rival Pay TV retailers cannot compete effectively with Sky in acquiring Pay TV subscribers.

Moreover, Sky's insurmountable advantages in Pay TV are now bleeding into bundled communications services. Sky is now the largest provider of triple play bundles.[45] Therefore, Sky's insurmountable retail scale advantages in Pay TV are now infecting telecom services and distorting competition for subscribers in bundled communications services. Sky's supernormal profits in Pay TV, combined with stringent wholesale regulation on the telecommunications elements of bundled services, make it possible for Sky to discount the telecom services heavily within its triple play bundles (and in particular fibre broadband), and rapidly achieve market share. Indeed, while BT's broadband market share has seen a marked decline, and is now only about 30% (the lowest retail market share of any former incumbent operator in Europe), Sky is now the second largest broadband retailer with a retail share of 23%. This contrasts sharply with Pay TV entrants' inability to make gains in Pay TV, where BT's retail market share is just 6% in volume terms (and less than [✂] in revenue terms) despite its extensive Pay TV investment, and the imposition of regulation by Ofcom more than five years ago.

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[40] Paragraph 1.61 DCR.

[41] Paragraph 9.123 DCR.

[42] The existing rules in place to ensure regulated access to Sky's platform infrastructure are also not currently effective which provides Sky with additional levers to frustrate the emergence of competition.

[43] Only 4% of consumers with a Pay TV service switched their main TV provider, compared with around one in ten in each of the fixed-line (9%), mobile (11%) and fixed broadband (9%) markets. Source: Ofcom's Consumer Experience Report, 2013.

[44] See BT's Pay TV Submission, eg "*Sky churn at 10-yr low after CRM blitz*", Decision Marketing, 4 Feb. 2015.

[45] Sky Annual Report 2014, page 9. BT estimates that Virgin Media has 3.3 million triple play customers, whereas Sky has 4.04 million, based on quarterly results as at February 2015.

The overall result of the stringent wholesale regulation of telecoms services, in contrast with the lack of effective intervention in Pay TV to date, is that competition for stand-alone Pay TV services as well as bundles that include content with telecoms services is heavily tilted in favour of Sky. This asymmetry has not been solved by the piecemeal and ineffective regulation that has been imposed on Sky and has inevitably led to distortions in competition for bundled services. The inter-related and mutually reinforcing competition problems in this market need be addressed effectively.[46]

Does Ofcom have the necessary tools?

Ofcom has many powers at its disposal to deal with this issue, which it should use effectively. Ofcom has the powers to apply competition law, and impose regulation under the Communications Act, including Fair and Effective Competition conditions in channel licences, rules around access to the satellite platform and Technical Platform Services and rules governing marketing and migration in retail markets, which in BT's view it is open for Ofcom to use to regulate Sky's Pay TV offering, founded as it is on a network services (satellite), properly and consistently with all other bundle providers. It should use all these tools proactively and urgently.

Although Ofcom has powers to regulate broadcasters' conduct via the licensing regime, these powers are unsuited to addressing holistically the competition issues stemming from Sky's insurmountable retail scale advantages as a Pay TV retailer, since Sky's retailing activities are not licensed. In the end, the features in the Pay TV market that give rise to the adverse effects on competition are so strong and pervasive that only a holistic solution, going beyond Ofcom's powers, is likely to be effective. BT believes that a broader set of remedies is necessary to address the competition issues in Pay TV that go beyond Ofcom's powers alone.

Looking ahead, the regulatory regime for Pay TV should be updated to align it with the market review process and appropriate regulation of SMP that applies to telecommunications services, and we urge Ofcom to press Government and the European Commission, as appropriate, for such legislative changes. This would allow the same regulatory approach to be taken in all converging sectors, ensuring that consumer outcomes are not distorted by regulatory imbalances.

The bundling of Pay TV and broadband is the priority issue for Ofcom to address. As Ofcom's own market research shows, bundling of fixed and mobile services is very small in the market, only circa 2%. While BT believes that it will have opportunities for cross-selling after its acquisition of EE, bundling of fixed and mobile services under the same contract simultaneously will, we believe, be a relatively small phenomenon in the market, such that it will not be a priority for Ofcom to consider in the medium term.

[46] It is evident that Ofcom's questions in paragraph 9.126 DCR, which are aimed at "*identifying enduring economic bottlenecks*", do not go to the heart of the competition problems in Pay TV, and that answering these questions alone will not explain what makes content effectively non-replicable, why Sky's insuperable advantages in the acquisition of content rights are likely to persist, how vertical integration reinforces the competition problems and the impact of these problems on competition for bundled consumers.

4.6 Regulation to promote efficient investment

This section of our response addresses Questions 11 and 12 in section 10 of the discussion document.

Ofcom's overarching issue

"Where regulation is required to promote competition, how can it best secure both efficient investment and effective competition during periods of significant investment in risky new assets?"

Summary of BT's response

- To incentivise private investment, regulation must provide the opportunity for investors to earn a fair return on investments over a reasonable time period reflecting the risks faced at the point of the investment decision.
- That requires a clear long-term commitment from Ofcom to the principle that the fair bet investors take when committing to a risky project with payback dependent on long-term forecasts of future cashflows will not be undermined by inappropriate regulatory intervention in the future. At a minimum, that means that any direct regulation of the level of pricing of new services based on new investments should not be imposed before payback of investments has been achieved, especially where future cashflows will be dependent on uncertain customer willingness to pay to migrate away from existing services based on current technology. But it also means that any eventual pricing intervention must be justified by a clearly identified competition problem and must seek to capture the risks and uncertainties investors faced ahead of the investment.
- In 2009, after full consideration of potential approaches, Ofcom chose not to directly constrain the prices of VULA services given the uncertainties faced over customer demand for higher speed broadband services and, ultimately, their willingness to pay to upgrade from copper-based services. The overall scheme of regulation in operation in relation to the provision of fixed network access services supported competitive provision of broadband services to customers given that Openreach supplied:
    - Cost-based copper access products – i.e. LLU and WLR;
    - Cost-based duct and SLU;
    - VULA on competition-ready, equivalence of inputs terms; and
    - VULA on fair and reasonable terms that allowed downstream competitors to construct profitable fibre-based broadband bundles in competition with BT's retail offerings.
- Ofcom acknowledged that it was not in a position to determine what investments should be made at what point in time, let alone what specific customer propositions should be developed. But its approach was aimed at allowing the market to decide the nature and pace of innovation and investment. This approach has been a clear success:
    - It allowed BT scope to commit to make early and significant upfront investment in access network upgrades on the basis of a long term payback based on driving customer take-up in the absence of clear consensus around the timing and nature of future speed requirements and technology choices;
    - It established the longer term regulatory clarity and certainty necessary for BT to develop the initial commercial business case and make investments in BDUK areas; and has also facilitated parallel investments by Virgin Media and a number of other local access suppliers in higher speed services such that over 80% of UK premises have access to superfast services today;

- It allowed Openreach freedom to structure and to evolve the VULA portfolio to meet customer needs and drive take-up while facilitating competitive supply of broadband services to UK consumers based on the full suite of Openreach input products, enabling CPs to adopt different market strategies;
- It has established a framework upon which BT can plan for further waves of private capital risk-investment to extend availability and to provide ultra-fast services to meet the needs of the future.

- There are significant risks to departing from that approach to move to an approach that attempts to make VULA prices cost-based by setting traditional charge controls based on forecast unit costs at the end of a three year period:
  - Regulation has long recognised that charges must be set so that all sunk investments can be recovered over time and that to do otherwise would undermine the basis on which any further investments would be made. But the traditional approach to setting charge controls for three year periods tends to be highly prescriptive and restrictive in establishing how much of previously sunk investments can actually be recovered during that three year period. In other charge controls this is generally driven by regulatory judgements on current asset values, expected asset lives and depreciation approaches. Crucially, there is no clear mechanism for accounting for losses made in initial years post the investment and before any regulatory intervention. It should be clear that imposing traditional charge controls before payback of initial investments has been achieved would therefore threaten cost recovery.
  - Furthermore, the fair bet as allowed for within traditional charge controls – i.e. the opportunity to recover a defined set of costs, including contributions to any sunk investments, in the three year control period with potential risk of under-recovery offset by scope to over-recover – would not capture any risks faced at the point the investments in assets with long and risky payback periods were actually made. This would manifest itself in the regulatory judgments made at the point of regulatory intervention around, among other things, the level of demand in the forecast period, the economic lives of assets already invested in and scope for cost efficiencies – i.e. the regulator would make judgments with the benefit of today's knowledge, not with the uncertainties originally faced by investors.
  - Any regulatory intervention to constrain prices ***during*** the payback period envisaged at the point of investment clearly risks undermining the basis on which the original private investment decision was made. This would not only be unreasonable in itself by compromising the true fair bet faced ahead of the investment decision, but would have clear dynamic impacts on all subsequent waves of risky investment to upgrade access network capabilities. Such a regulatory approach would signal that if any upside rewards against business plans are achieved, they may be regulated away. As any downside risks at the point of investment would be unaffected – i.e. if an investment failed and investors did not recover their costs, then no regulatory intervention would be triggered – the expected net present value of any investment would, all else equal, fall, reducing commercially efficient investment incentives.

- More fundamentally, we see no competition trigger now or in the foreseeable future for further intervention in relation to Openreach's pricing of VULA. The overall scheme of regulation applying to fixed access services continues to strike an appropriate balance in incentivising risky investments and facilitating competitive market outcomes to the benefit of consumers.
  - Openreach's supply of VULA services continues to be constrained by the availability of regulated copper access services as well as services from Virgin Media.
  - Competition in broadband is strong with BT's competitors having clear advantages in constructing triple-play bundles. While BT has significant concerns with the VULA margin remedy imposed by Ofcom in March 2015 (and is challenging these on appeal), we would

also note that, despite vocal claims to the contrary over the last three years, there is absolutely no evidence to suggest that CPs cannot construct profitable and competitive consumer propositions utilising VULA and other Openreach EOI products.

- The price of VULA is therefore commercial constrained and set at levels which enable fair and effective competition on the merits across all broadband products.
- Ofcom should also be mindful of the fact that, however demand may have evolved or may evolve moving forwards, at the point of BT's original investment, the price of VULA was constrained and demand was uncertain.

In conclusion:

- Given that payback on original investments has not been achieved and given current competitive conditions, and notwithstanding our legal challenge to the necessity of the additional VULA margin remedy introduced in March 2015, Ofcom should maintain its current approach to VULA price regulation within the overall scheme of fixed access regulation. This approach both supports efficient investment in risky new assets and supports effective competition in downstream services.
- In so doing, Ofcom should provide a clear long-term commitment to the principle that it would not seek to regulate prices of services based on any new waves of investment – such as that required to support delivery of ultrafast services – until at least payback was achieved and only where clear competition concerns with the terms of supply of those services had been identified taking full account of the commercial constraints arising from the provision of existing services based on previous investments.
- Any future intervention to constrain VULA prices would need to capture the risk/reward basis on which investment decisions were made to ensure that a traditional charge control approach is not adopted which is so static in its outlook that incentives to make further risky investments are undermined. Regulation should not be imposed in a way which effectively claws-back any upside outcomes that may be realised and ignores the downside risks taken on by investors at the outset of a project.
- Overall, in the face of ongoing uncertainties about the nature of demand and customer willingness to pay for further waves of network upgrades, Ofcom should only look to intervene where truly necessary and set a correspondingly high threshold for intervention. In the face of uncertainties on the demand and supply side in a rapidly evolving technological landscape, Ofcom should not assume that today's bottlenecks will endure. Ofcom should continue seeking to let the market decide and avoid prescribing market outcomes and/or second guessing investment decisions of private investors.

Question 11: *What might be the most appropriate regulatory approaches to the pricing of wholesale access to new and risky investments in enduring bottlenecks in future?*

As a start-point for considering possible approaches, BT fully agrees with Ofcom's upfront statement in this section that: *"…regulation needs to ensure consumers and the wider economy benefit from waves of private sector investment in successive generations of technology that is as widely available as possible*."

Generally, and in very simple terms, private investors will only support investment projects where they can expect to generate positive future cashflows – appropriately discounted to reflect the cost of money invested – over a reasonable time period.

At present, Ofcom considers that fixed access is an enduring bottleneck and imposes regulations accordingly. However, as set out above, Ofcom's approach to defining and regulating what it thinks of as an enduring bottleneck is a self-fulfilling prophecy. By regulating BT's returns on alleged enduring

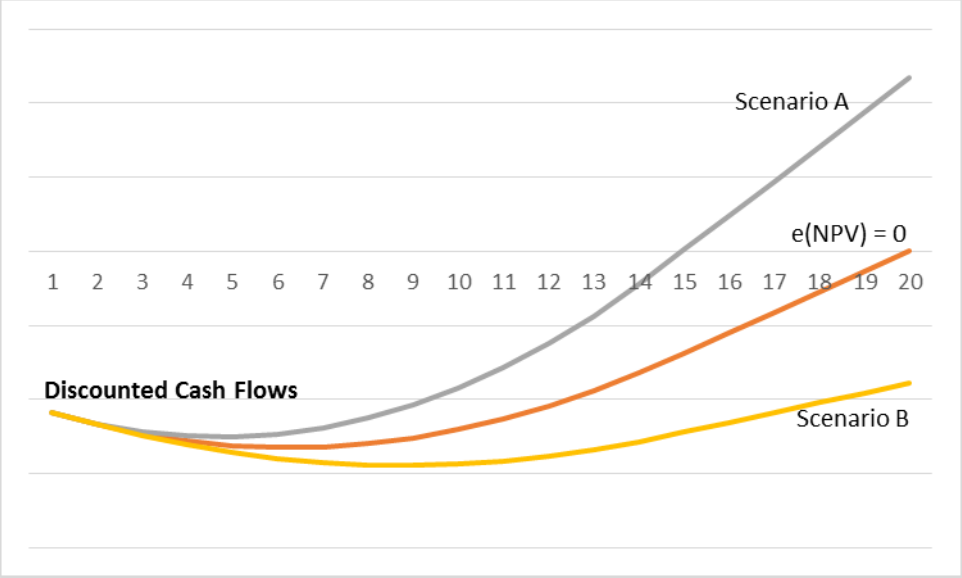
bottlenecks to BT's cost of capital, Ofcom causes there to be no competing investment. This is what it did in its copper access policy in 2005: result, no competing investment. This is what it did not do in fibre access regulation: result, lots of competing investment.

So in considering the best approach to pricing of wholesale access services relating to new and risky investments in access network upgrades, we would urge Ofcom to note a number of important limitations. We believe,

- First, that Ofcom should not presume that assets are bottlenecks without very good evidence of the situation as it is contemporaneously;
- Second, given the time periods over which such investments are expected to payback (i.e. around 20 years), Ofcom should not assume that today's bottlenecks would endure into the future;
- Third, given that the investments in question are indeed risky, both from a demand perspective and a supply perspective, it is not obvious that the investments qualify as bottleneck investments; and
- Fourth, that Ofcom should be mindful of the geographic dimension of its considerations; the evidence does not support the belief that Openreach's network is a bottleneck asset when it in fact faces strong network competition in at least 50% of the country, whereas in more remote areas where competition is highly unlikely the case is much stronger.

Notwithstanding these points, in those circumstances where Ofcom has good evidence that an asset is a bottleneck asset, it remains clear, we believe, that the most appropriate regulatory approach to pricing has to be one that allows investors to take a fair bet at the point of investment and have an expectation – balancing risks and rewards – of earning positive cashflows.

The chart below shows a simple stylised example of a one-off upfront investment expected to generate future cashflows. Two possible scenarios are modelled which produce a probability weighted expected net present value of zero (i.e. breakeven) in year 20. The investment proceeds on the basis that the risk of failure to breakeven by year 20 identified under Scenario B is offset by the potential to hit breakeven earlier under Scenario A.



The expectations of investors in any project will reflect judgments on a number of risks and uncertainties faced around, among other things:

- the eventual cost of the project;
- timescales for delivery;
- demand uncertainties around customer willingness to pay for the services enabled by the new investment, both the number of customers willing to pay and the price they are willing to pay;

- investments by other parties to enable them to supply competing services.

The nature and extent of risk clearly differs from project to project and different investors may take different views on the level of risk they foresee in a given project and the level of risk they are willing to tolerate in proceeding with an investment. Investors will assess the scope for downside outcomes – i.e. that they will not make their money back – and balance this against the scope for any potential upside. They will consider options for changing the nature of the investment to mitigate risks, including options to change the timing and focus of any investment.

In considering investments in digital communications markets, and in particular investments in areas that may be considered enduring bottlenecks (at least at the time of investment), investors will also need to take account of the regulation that will or might be faced by the investing firm and/or other firms and the extent to which this may directly or indirectly impact future cashflows during the relevant period – i.e. the period over which they would *expect* payback, having assessed the other risks faced.

This raises two key issues:

- In general terms, uncertainty over the form of regulation that could be faced in the markets into which the investing firm will be supplying services utilising the new investment will increase the range of scenarios that investors would need to assess through a combination of
    - direct impacts as potential regulatory interventions may add to the investing firm's costs or constrain the investing firm's revenues at a future point in time; and
    - indirect impacts as regulation could distort the nature of demand and/or competition faced in seeking to generate cashflows.

  Overall, the less clarity and certainty there is over future regulatory approaches that may be adopted, the less likely investments will be made with longer term paybacks. Ofcom should therefore make and stick to long term commitments to regulatory policy.
- More specifically, the scope for any future direct price regulation to limit cashflows will have a direct impact on the expected cashflows faced at the point the investment is being considered. Everything else held equal, the higher the scope for regulation to cap future revenues, the lower expected cashflows will be compared to a situation where there was no such scope for future direct price regulation. The threat of future price regulation therefore reduces the likelihood of investment. This is simply because any identified worst case risk associated with the ability to generate cashflows from the investment would remain, but may not be mitigated to the same extent by the scope for upside outcomes from higher than expected outcomes.

These issues have long been fully recognised by Ofcom. In a series of consultation documents in 2007 and 2008 following the last strategic review – specifically considering the regulators role in supporting NGA investments, but arguably of more general relevance – Ofcom considered and established a set of key guiding principles around its regulatory role in promoting investment.

The background here was a recognition that the investment decision (here, in relation to NGA) was highly complex in terms of, among other things, timing, technology choice and geographic focus in a context where the nature of demand for superfast speeds and the customer willingness to pay for these had not been established. Ofcom recognised, for instance, that firms in different countries had very different plans to invest in NGAs in terms of the technology choice, level of overall spend and timing. Ofcom also noted that while IPTV was a key driver for NGA investments in certain countries, the UK had a relatively high level of Pay TV take-up on satellite and cable networks, which militate against fibre take-up.

In recognising these uncertainties, Ofcom – rightly – did not see its role as prescribing what was needed by when in terms of investment, but rather in facilitating efficient investment choices for private investors – i.e. in creating the best environment in which they could make efficient decisions based on their own judgements.

Reflecting this, Ofcom summarised its guiding principles, at the highest level, as follows:

- contestability – allow competition to drive investment by ensuring that the opportunity to invest is contestable by as many parties as possible, once they see a viable business case;
- reflecting risk in returns – recognise that next generation access investments are inherently risky, and structure future access regulation to ensure that expected financial returns reflect the level of risk at the time of investment; and
- regulatory certainty – providing this certainty is fundamental to Ofcom's treatment of next generation access investments for potential investors to make informed decisions, and to provide them with confidence that this regulatory regime will be in place for some time to come, to reflect the long term nature of these investments.

In parallel, Ofcom reiterated the importance of maintaining a central tenet of its regulatory philosophy: i.e. to keep regulation to the minimum necessary, and avoid intervention where it is not required.

In other words, Ofcom's approach was geared around signalling that it would allow investors to make a fair return reflecting the commercial risks faced ahead of making the investment and that it would let the market decide precisely what was needed in terms of investment and when. BT supports this approach: this philosophy remains appropriate today in considering how to regulate across digital communications markets – whether fixed or mobile or residential or business.

Ofcom's approach in 2009 was very much set in the context of the overall scheme of regulation applying across fixed access markets – i.e. EOI provision of a number of key regulated copper access, availability of cost-based passive inputs and requirements to provide VULA on EOI and fair and reasonable terms – and reflected the fact that BT's investments were about upgrading access network capabilities at a time when the nature of demand for such upgraded services was uncertain. Openreach faced regulatory freedoms in setting price levels, but commercial constraints driven, ultimately, by customer willingness to pay for faster speeds. Downstream competition across all broadband services was also supported.

It was against this background that BT took a sequence of decisions to commit first £1.5 billion, then £2.5 billion and then over £3 billion investment in rolling out NGA services commercially and in support of the BDUK scheme, on an expected payback at the Group level of about 12 years and at the Openreach level of just under 20 years.

This has delivered clearly positive outcomes in terms of roll-out, take-up and ongoing competition as set out elsewhere in this response. This approach – allowing Openreach regulatory freedom in generating revenues from the new investments in the context of the overall scheme of regulation and commercial constraints – remains the best approach to incentivising further waves of investment providing further upgrades in access network capabilities. These further investment programmes are already in an advanced stage of preparation. BT's announced plans for the roll-out of ultrafast broadband amount to another incremental risk investment in the network at the Openreach level of circa [✂], which will not be possible if price controls are put in place.

We set out below, however, why this approach could be undermined if Ofcom now evolved its approach to price regulation ahead of BT achieving payback on initial investments and without any clear evidence of a competition problem.

Question 12: *How might such pricing approaches need to evolve over the longer term? For example, when and how should regulated pricing move from pricing freedom towards more traditional charge controls without undermining incentives for further future investment?*

The short answer is that price controls on risky access network investment are justifiable only when all of the following conditions are met:

- The original investment expectations of payback have been met;
- Ongoing investments, in train or planned, would not be undermined;
- The evidence is clear that there is customer and competitive harm from pricing freedoms;
- The evidence is clear that there is no possibility of competing network investment in the same part of the value chain in the same geographic area; and
- Any intervention is consistent with all of Ofcom's statutory duties, including particularly its commitments to consistency and proportionality of its activities, in support of investment.

Even if some intervention was considered appropriate against these conditions, any constraints on pricing should give full weight to risks faced by investors ahead of the investment being made.

To an extent, we are reassured by Ofcom's restatement within Section 10 of the more detailed set of regulatory pricing principles adopted in its final 2008 Statement on NGA, i.e.

- Pricing and rates of return should reflect the level of risk faced when investments are made;
- Pricing approaches should take into account the level of demand uncertainty;
- Flexibility in pricing is desirable, allowing experimentation, increased investment and greater take-up;
- Pricing approaches need to reflect the underlying characteristics of products;
- Regulation should consider the impact on investment incentives from the relative pricing of different products;
- The costs of new investments should be recovered from the services they support;
- Investment risks might be addressable by more than just pricing approaches including approaches to risk sharing and shared investment.

Ofcom also acknowledges that "*investors value predictability and stable policy interventions: significant and poorly signalled changes in policy can damage investor confidence and may increase the risk associated with new investment*."

However, Ofcom makes a number of comments that raise concerns that it is moving in the direction of direct VULA price regulation, even if the precise form and timing of such regulation is uncertain. Indeed, the specific question asked references the imposition of traditional charge controls.

We also note that while Ofcom frequently references risks and uncertainties faced when investments were made, its approach to the fair bet principle in traditional charge controls is very different in nature.

Traditional charge controls establish three year CPI-X constraints on average revenues in the relevant regulated basket of services. They are usually based on forecasts of Fully Allocated Costs (FAC) for the relevant services based on base year costs in the latest Regulatory Financial Statements (RFS).

The fair bet in these circumstances is simply that the forecasting exercise undertaken to establish final year unit costs of supply – based on forecasts of asset inflation, volume changes, efficiency savings and the cost of capital – will provide BT with a reasonable chance to recover its costs in those three years. Importantly in considering investment incentives, those costs will include a defined allowance for capital costs in those three years. That is, a depreciation charge and an in-year return

on the estimated capital base supporting provision of service. In turn, those capital charges will themselves reflect today's asset valuations, allocation methodologies between services sharing use of assets, the asset lives in the RFS and, usually, straight line depreciation over those asset lives.

The fair bet means that BT may under or over recover those forecast costs, including capital charges, within the three year charge control period – by for instance being less or more efficient that forecast at the time of setting the control. If over-recovery is achieved, the next control would only seek to reduce prices towards costs (again, forecast costs) over that next three year period. There is no claw-back of over-recovery or – if costs are not recovered – compensation or correction to cover this. This glide path approach therefore allows BT to gain from over performance versus expectations by setting prices above the actual level of costs incurred, including the defined allowance to cover capital charges.

But this is not the same as capturing the risks faced when investments were made – e.g. in the case of NGA, the risks assessed ahead of the 2008 investment decision. The risk allowance in a traditional charge control would be limited to reflecting within the forecasting exercise at the point it was carried out the forward looking upside and downside risks around parameters such as volume growth, efficiency gains and further capex investment during the forward-looking three-year period.

Furthermore, in the context of NGA, establishing a traditional three year control would introduce clear risks that a fair bet of cost recovery would be limited to allowing BT to recover three year capital charges based on asset lives and depreciation approaches that have no relation to the basis on which the relevant incremental investments were undertaken. In the stylised example above, for instance, the path of the discounted cumulative cashflows reflect operating losses in initial years with higher operating profits over time ensuring the project was expected to be break-even. Focussing on returns in selected later years would not give insight into returns over the life of the investment project.

The over-riding concern is that the form of any price intervention that may be introduced would do the very thing Ofcom signalled it would not do in relation to NGA investments back in 2009: i.e. threaten the overall cost-recovery expectations on which the investment decision was based and/or claw-back any upside performance which – at the point of investment decision – had mitigated the impact of potential under-performance. Such an approach would undermine the true fair bet principle that should be applied and have obvious knock on implications for further waves of investment which would now need to reflect the specific change in policy and the broader, general impact on regulatory certainty.

More fundamentally, there is no trigger for Ofcom to change its approach before BT has achieved payback of its original investment:

- BT is still a long way short of seeing positive net cashflows on the supply of fibre services – i.e. ongoing margin has been insufficient to cover the original incremental investments that have been made.
- To achieve such a position, BT still has incentives to drive volumes onto NGA services to grow revenues in the face of an expanding Virgin network offering fast headline speeds as standard and LLU based competitors with sizeable base of customers being supplied with services on the back of standard speed broadband
- There is no evidence of any distortion to competition in the provision of NGA services. BT has from day one of NGA rollout offered cost-based passive services and active services on EOI terms. While BT has faced loud claims of margin squeeze over the last few years, Ofcom's highly conservative assessments have found more than sufficient margin for other CPs to offer competing NGA services utilising VULA inputs.
- BT is continuing to make risky investments in NGA networks in the future, which will be undermined by price controls.

There is a clear risk of regulatory failure here, regardless of the specific regulatory approach Ofcom may take in establishing any new price regulation around VULA. Generally expressed concerns with excessive pricing or allocative efficiency concerns relating to prices being above short term costs are made without reference to the central issue of ensuring that investors get a fair return on their significant and risky investments in a reasonable time period, let alone any evidence of excessive returns on investments that have yet to achieve cumulative profitability. The concern is that Ofcom would, at best, attempt to second guess the risks those investors faced and the efficient decisions they should have taken at that time and, at worst, simply ignore those ex ante risks and base all decisions on information available today.

Overall, this confirms why the threshold for any intervention to constrain prices of services based on new investments should be high: the focus of decision making at this stage should be on competitive conditions, the constraints faced by market players and overall consumer outcomes, not on perceived profitability of BT's NGA case at a particular point in time.

Ofcom's policy towards the price regulation of BT's NGA network will determine the future of NGA investment. BT has committed to delivering ultrafast broadband speeds to the majority of the UK by 2025, and to 10 million premises by 2020. Furthermore, BT is continuing to develop its business case for extending its ultrafast plans beyond this first phase of 10 million premises, requiring further large risk investment and a very challenging commercial case. These investment decisions are explicitly predicated on the assumption that the current pricing regime for NGA investments in Openreach will continue, and that BT will be left free to find the best revenue model and most cost efficient means of deployment to achieve a reasonable commercial business case. Price regulation of GEA under the VULA regulations in 2017 will undermine the investment case, a) because it will in fact reduce the returns on this large scale risky investment such that it will no longer pay back and b) because it will demonstrate to investors that Ofcom is not in fact committed to letting them achieve a payback on their investments before price controls kick in, which will fundamentally undermine investor confidence.

4.7 Regulating vertically integrated firms

This section of our response addresses Questions 13 to 16 in Section 11 of the discussion document.

While much of Ofcom's discussion document is a balanced account of the good market outcomes for customers and competition, Chapter 11 regarding the regulation of vertically integrated enterprises raises a large number of concerns about BT and Openreach, which are not balanced or substantiated and do not amount to a dispassionate evidence-based analysis of the situation. We regret to see this, and regret having to rebut these concerns in forceful terms in what follows.

Ofcom's overarching issue

"Are there changes in competitive outcomes or the overall market context that might suggest the need to update or evolve the current model of fixed access network functional separation?"

Summary of BT's response

- The allegations against BT and Openreach in section 11 are without foundation in analysis or evidence. They amount to an entirely one-sided account without reference to facts readily available to Ofcom to the contrary.
- There is no competition failing arising from the Undertakings and no evidence or analysis to suggest otherwise.
- Further there is no evidence that structural separation would deliver better market outcomes than the current model; in fact it is much more likely that they would be worse.
- Imposing structural separation of Openreach from BT on any grounds would be totally unwarranted, incompatible with Ofcom's duties, beyond its powers, adverse for customers, including wholesale CPs, and damaging for the country.
- BT calls on Ofcom to close down this line of debate as soon as possible, before it undermines investment in fixed line networks in the UK.

Introduction

In this Section, Ofcom suggests that although outcomes to date in the UK have been generally good[47] there are reasons why future outcomes might be better if there was evolution of the current model of functional separation or if there was structural separation of BT (which Ofcom suggests would be a "*one-off intervention which would significantly alter the market structure*"[48]). Ofcom highlights considerations such as the continued ability and incentive for Openreach to discriminate in favour of downstream BT; what Ofcom describes as wider concerns about Openreach's general performance; and new developments such as convergence which Ofcom suggests might increase incentives to discriminate.

BT's view is that structural separation (which, regardless of the form of structural separation used, would require BT to relinquish control of at least part of its network access business) is completely unwarranted, disproportionate, incompatible with Ofcom's duties and beyond Ofcom's powers. It would impose huge costs on customers and on the wider UK economy and would cause massive disruption and cost for other CPs as well as BT.

Outcomes in fixed communications have been far better than generally good, although by contrast problems persist in Pay TV. We know of no large telecommunications supplier since AT&T, in a very different world over 30 years ago, that has been separated except in order to pursue very ambitious

[47] Discussion Document paragraph 11.5

[48] Discussion Document page 127

government-funded fibre upgrade programmes. Separation has not been deemed proportionate on competition grounds in this industry. Nowhere does Ofcom discuss why this might be the case, or why the UK uniquely might possibly warrant such an intrusive and hugely costly remedy when this is not required in any other large country and at a time when we are already seeing growing network access competition in the UK.

Ofcom's section 3 duties require it to adopt best regulatory practice and in particular to intervene only where necessary in a proportionate and targeted fashion. Structural separation of BT satisfies none of these requirements.

Further, Ofcom's powers to regulate communications markets stem from the Common Regulatory Framework as enacted by the Communications Act 2003. Ofcom's powers are bounded by the limits of that statute. Structural separation is not a remedy that it has the power to impose under the CRF and the Communications Act 2003. Ofcom has a comprehensive set of tools available to deal with competition problems under the framework, which are less intrusive but which are entirely sufficient to remedy any existing market failures. Even functional separation is offered only as a remedy of the last resort under the CRF, and subject to pre-approval by the EC. See Annex 3 on Legal Powers.

Further, even if (which BT does not accept) features of the market could currently reasonably be suspected to prevent, restrict or distort competition, all actions open to Ofcom to remedy the source of the harm identified that are less intrusive than structural separation must first be considered and rejected[49] before Ofcom could contemplate a reference with a view to structural separation.

If there are concerns about service issues, these are insufficient to warrant structural separation. Service is clearly an issue which can occur in either an integrated or separated company and there is no strong *a priori* ground to link inadequacies of service quality with vertical integration – indeed quite the contrary. In any event, service issues are susceptible to regulation under SMP conditions. Ofcom should look to its own responsibilities for the regulatory failures that have inhibited service improvement. Indeed, where Ofcom has used its powers to prioritise service improvement (such as the 2012 Fixed Access Market Review), they have proved successful. Accordingly there is no case for seeking further remedies or for believing that it would be proportionate or appropriate to impose structural separation to address service issues.

In short, there is no case for considering that structural separation could be justified or proportionate and we are confident that a dispassionate assessment of the evidence will lead Ofcom to the same conclusion.

Given this, the content of Section 11 appears to BT to reflect the thinking by certain CPs, who are motivated by self-interested corporate rivalry and, as we show, contains a large number of false and unsubstantiated concerns. Ofcom's summary of these concerns in section 11 is an entirely one-sided account of the issues without any evidence offered, which is not appropriate for an evidence-based and unbiased regulatory authority with duties of consistency and impartiality. In contrast, although barely mentioned in the discussion document, integration (common ownership) plays a vital role in encouraging commercial investment in new technologies and this will be severely jeopardised if structural separation continues to be left open for debate.

The rest of this Section is organised as follows.

- We consider the concerns which Ofcom suggests might justify new forms of separation (A);
- We outline why there are efficiency benefits for new investment that derive from integration (B);
- We outline the extent of the economic risks to investment resulting from separation (C);

[49] Discussion Document paragraph 11.72 where Ofcom notes other potential remedies would have to fail to resolve concerns.

- We illustrate the transition costs and challenges that would arise in the event of either structural separation of BT's network access business or indeed a requirement for BT's network access business to be put into a separate, BT owned, legal entity (a subsidiary company) (D) and;
- We conclude with our responses to Ofcom's questions, drawing on these sections.

A. Ofcom's concerns with the current model of functional separation

Ofcom registers various concerns about the effectiveness of the functional separation model in Section 11 but fails to provide any substantiation of the potential points raised. Whilst we appreciate that Ofcom is at this stage seeking evidence from stakeholders, the extent of omissions of already known evidence and the failure in a single instance to offer the counter view are, in our view, inappropriate. This has contributed to a Section in the Discussion Document which conjectures that numerous issues remain with the regime when this is not, on any reading of the evidence, justified. As a result, the Section provides a one-sided description of the set of considerations raised by vertical integration.

We therefore list 19 of these issues in this Section to demonstrate this information deficit in the Discussion Document, and explain why we think on the basis of the evidence the inferences do not stand scrutiny, and that they paint a very distorted picture of the effectiveness of functional separation introduced ten years ago.

[1] The concern that BT 'still has an incentive to discriminate'

11.5 'Our current approach limits the ability to discriminate but does not address the underlying incentive, so risks to competition may remain' / 11.25 'BT's vertically integrated structure means that it still has the incentive to discriminate'

This sweeping generalisation is a) false, b) inconsistent with Ofcom's own market analysis and c) one-sided opinion without supporting analysis.

To give a simple example, in Ofcom's analysis of Ethernet markets for mobile backhaul, BT is found not to have market power and not to have the incentive to discriminate.[50] From this one can conclude that BT does not always have an incentive to discriminate, and that this is Ofcom's own view on the matter. We do not believe it is appropriate for Ofcom to make sweeping allegations of this nature; the issues need to be supported by analysis and evidence. This is what another UK competition authority is doing currently in considering the same issue of mobile backhaul, where it is interrogating the vertical arithmetic analysis to demonstrate the point.

At best it can be said that in certain circumstances, a) where BT has market power, b) where it can exercise this market power and c) where doing so would be to its own downstream advantage, it might have the incentive to discriminate. Even then, however, it is necessary to assess the facts of the case, because the vertical arithmetic might demonstrate that any possible benefits of discrimination would be outweighed by the negative impacts. Furthermore, it is necessary to take account of the fact that BT will not have the incentive to discriminate where it has no ability to discriminate. For example, it might (though we do not accept that it is) be in BT's interests to discriminate in the provision of copper exchange lines but, as it has no ability to do so, BT has strong incentive is to sell as many copper exchange lines as it can.

The interventions which prevent BT from acting on any of its potential incentives to discriminate were, of course, embedded in the Undertakings (which introduced EOI and functional separation). These had the express design of removing the ability and incentive for Openreach to discriminate in favour of downstream BT. This incentive was removed through a raft of measures in the (legally binding)

[50] Anticipated acquisition by BT plc of EE Limited, Ofcom's Phase 2 submission to the CMA, 31 July 2015

Undertakings. In particular, Openreach must make commercial decisions without considering the impacts on downstream BT; and the performance-based remuneration of Openreach senior management is independent of results at the Group level. When the Undertakings were proposed, Ofcom stated:

The Undertakings are apt to address the competition concerns identified, because whilst they allow BT to retain its vertically integrated structure, they set out a detailed basis on which BT can operate within the context of its market power and vertical integration; and ***they constrain its ability and remove the incentives of its component divisions to engage in the types of conduct identified*** *which have the effect of restricting competition.*[51] [Bold emphasis added]

Thus, even if there is upstream market power (and thus ignoring Openreach's incentives to sell new services to CPs to compete against Virgin Media), the Undertakings remove the incentive on Openreach to discriminate. That remains as true today as it was in 2005.

Ofcom should not simply have stated that BT still has an incentive to discriminate, but should have asked the question whether the operational separation arrangements had been successful in eliminating Openreach's *ability* to discriminate given the constraints in place. If it identified that there were such problems, it should have highlighted some specific evidenced examples of discrimination in favour of downstream BT which might actually remain. Those which are discussed in the Discussion Document are not supported by any evidence at all, as we discuss further below. This creates a false impression that functional separation is not working for competition and for consumers, and ignores the obvious contradiction that there is a huge amount of evidence that the UK market is delivering well for consumers.

Put simply, the issue is not just about very simple theory of incentives for a vertically integrated firm in how it treats downstream rivals, but about actual behaviour given the constraints in place (the functional separation model) and here the evidence of BT's behaviour over the last ten years ought to be taken into account. On this, see issue [18] below and Annex 1. Indeed, a Nomura note of 2 October 2015 stated that:

"Sky did acknowledge that there was no day-to-day discrimination by Openreach between service providers."[52]

BT is therefore especially interested to understand what actual sources of discrimination CPs point to in their responses, given in particular that where BT has SMP it is subject to SMP EOI conditions (as well as the Undertakings EOI obligations) and the SoR process (in relation to which see [11] below) and Ofcom can therefore police BT's behaviour accordingly, so that Ofcom can move on from generalities to actual evidence.

Even if BT still has an ability to discriminate to the detriment of competition, any concerns could be addressed by reinforcing BT's SMP obligations of non-discrimination. A more onerous requirement could only be imposed if proportionate and necessary, and would require showing that the ability to impose SMP conditions aimed at discriminatory behaviour is insufficient to address Ofcom's concerns about discrimination.

[2] The suggestion that service issues arise from the current regulatory model

11.26 'The current regulatory model … may lead to poor outcomes … although all products are provided on an equivalent basis, the absolute level of quality of service provided on some products has been poor.'

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[51] Ofcom's "Notice under section 155(1) of the Enterprise Act 2002", 30 June 2005, paragraph 5.17 http://stakeholders.ofcom.org.uk/binaries/consultations/sec155/summary/sec155.pdf

[52] Nomura, Quick Note - UK Telecom Regulation - The case for Openreach separation, October 02, 2015

11.45 'We had hoped that equivalence would lead to Openreach delivering equally good service to all downstream providers, since BT would itself suffer if this did not happen. However, too often we observe equally poor service being delivered to all downstream providers.'

There is a debate to be had about whether service levels have improved fast enough, and on which products. Customer expectations are rising rapidly. BT aspires to meet and exceed customer expectations. BT does acknowledge that this has not always been achieved in practice. As discussed below, for example, BT has had problems in meeting demand for new Ethernet provisions. But service levels have been improving, especially on copper products in which fault rates, provision times and repair times have been improving for some years; and where Openreach is hitting all Ofcom's regulated standards, a fact not mentioned by Ofcom.

However, no evidence is offered in this section as to the facts or reasons why service performance levels are as they are. In ten years of regulating Openreach, Ofcom prioritised cost reduction in every charge control, and every product, taking over £1bn of revenue out of Openreach in the period, and to date only in one control (the 2014 FAMR) has its drive for lower cost been balanced by a goal of service quality.[53] The imperatives of making cost efficiencies as required under the price controls clearly can conflict with extra expenditure on service, and Ofcom's regulatory policy has therefore had a substantial bearing on service performance.

It is also relevant that Ofcom mandated BT to physically separate a large number of key systems, which has involved a huge programme of work over many years costing in the region of £1 billion. This £1 billion spent on physical systems separation is £1 billion not available to be spent on service quality. The regulatory regime has therefore put huge challenges on BT in expecting ever lower prices alongside a massive set of costly system changes required to implement the Undertakings.

The Undertakings impose a three-layer model in the industry, by which BT has to operate three separate layers – retail (BT Consumer, BT Business and BT Global Services) who operate via BT Wholesale which in turn buys from Openreach. This three layer model causes service failures by requiring multiple systems and process hand-offs, as a result of Ofcom's regulations and Undertakings. BT's proposals to streamline this approach and reduce the industry model to two layers were rejected by Ofcom.

In short, Ofcom should look to its own responsibilities for the regulatory failures that have inhibited service improvements, as well as judging the performance of individual operators.

Achieving good service outcomes for end-customers is a team game: every operator in the value chain has to perform. It is not the case that all service failure is down to Openreach. In fact different CP customers of Openreach have very different service outcomes based on the same Openreach inputs, because they too have a very important role in the overall service experience.

It is not clear how Ofcom leaps from service performance to issues of vertical integration. Service can be an issue in both integrated companies and separated ones, and nowhere does Ofcom set out any economic explanation as to why service would be better addressed if there was structural separation. Indeed, the analytical case, which was one of the foundations of the Undertakings, is that an owner with its own downstream retail operations would have more incentive to drive upstream performance, not less, and no analysis or evidence is provided to suggest that this is no longer true.

We do therefore agree that a refocus on to service by BT, Ofcom and industry is appropriate; it is clear that these issues are fit to be taken into account in SMP conditions; but we consider it to be absolutely mistaken that the massive upheaval of structural separation could be the way to address service issues.

[53] In setting price controls requiring year-by-year real terms reductions in prices, Ofcom made no allowance for service until 2014.

[3] The alleged under-investment in BT's copper access network

11.26 'Some stakeholders have also argued that, given its increased focus on deploying superfast broadband, Openreach faces limited incentives to invest sufficiently in maintaining its existing copper access network.'

This allegation is a) irrational, b) false and c) known to Ofcom as such. Ofcom know that BT continues to use the copper network on all its connections, including on all its SFBB lines (as SFBB is an overlay network), so it is not the case that BT has limited incentives to invest sufficiently. The suggestion that BT might choose strategically to undermine its own service set on which its commercial future depends is ridiculous and unfounded.

Investment levels are, anyway, something which can be considered by Ofcom in its three yearly market reviews, when it sets price controls. If this is a genuine issue, we do not understand why Ofcom has not addressed this, given the regular opportunities it has had to do so. BT has no objection to investment levels being considered in future.

Further, the share of Openreach capital expenditure as a percentage of total BT Group capex has increased since functional separation was introduced, increasing from 35% in Financial Year Ending 2006 to 47% in Financial Year Ending 2015 (and to 65% if BDUK investment is included). Rather than support the contention that Openreach has been losing out against other parts of the group in terms of investment, the data shows precisely the opposite.

[4] The alleged strategic benefit to poor quality

11.27 'Some stakeholders have argued that there is a discriminatory element to poor performance on quality of service, as lower service quality can lead consumers to favour well established brands.'

No evidence is provided by Ofcom to substantiate this allegation, and Ofcom does not mention that the vast majority of service issues experienced by end consumers actually arise beyond the Openreach access network. LLU operators do not have poor reputations for service – in fact, some have better reputations than BT – and, further, there are steps they can take to address the majority of service issues experienced by end customers. Further, two CPs taken together now have more customers than BT at the retail level, and must be considered to be well established brands.

Furthermore, it is simply not the case that competing brands are less well established, or well thought of than BT in respect of service. As service experienced by end customers depends on both Openreach and all its customers, Openreach is committed to understand how it can best work with CPs, for example by aligning systems and processes as well as possible so that faults are minimised and then rectified as soon as possible. Any implication that such initiatives are somehow in bad faith – that BT wants poor service – is untrue and unsubstantiated.

[5] The suggestion that the service may be discriminatory due to differences in product mix

11.30 'BT does not always use the same products as competitors … BT Consumer has largely based its voice and broadband services on WLR and SMPF, while large scale competitors including Sky and TalkTalk tend to use MPF.' / 11.31 'BT's rivals may suffer poor performance on the products they take whereas BT provides better performance on the products that it takes'

Openreach's portfolio has evolved over the last 10 years and it now offers a wide range of services to over 500 CPs. CPs (including downstream BT) are able to choose which services they purchase from Openreach and these may come with differing terms and conditions (albeit provided equivalently to all CPs that take the same product or service).

In revenue terms, the largest products are WLR and MPF. Downstream BT purchases WLR combined with SMPF from Openreach to onward sell voice and broadband services to its end customers. WLR attracts an in-tariff repair service of clear by end of next working day plus one. In comparison, the

main external product, MPF, has an in-tariff repair timescale of end of next working day. Thus the actual position is exactly opposite to the concern voiced by Ofcom – on the most important services, CPs have a product with better service than BT's retail arm.

It does not speak well as a dispassionate assessment of the facts that Ofcom uses as an example of discrimination a case of different product standards when Ofcom knows and itself imposed a lower product standard to the detriment of BT downstream.

[6] That convergence increases BT's incentive to discriminate

11.32 'Given the network and service convergence described in section 8 … this might mean BT's incentive to discriminate between downstream providers increases'

See our response to [1] above. Incentives to discriminate are of limited importance as the ability to discriminate has been addressed: this was the central purpose of the Undertakings. In effect, this observation can at most mean that the effectiveness of SMP EOI regulation and the Undertakings EOI commitment remains important, and we discuss our strong record of compliance with the Undertakings in [18] below.

By far the most important convergence in communications in recent years has been between Pay TV and broadband. Here BT has been the victim of obvious, persistent discrimination by Sky which supplies all its sports channels to both Virgin Media and TalkTalk but not to BT. Rather than circle around an issue that it has addressed, namely BT's theoretical incentive still to discriminate, Ofcom needs to address this major omission of Sky's actual obvious and harmful discrimination in its set of regulatory remedies. We have discussed this issue further in our response to Question 10 above.

[7] Convergence increases BT's incentive to discriminate especially in mobile

11.32 'Given the network and service convergence described in section 8 … this might mean BT's incentive to discriminate between downstream providers increases' / 11.33 'BT's incentives to discriminate between different downstream mobile providers in the provision of fibre mobile backhaul may increase. This is one of the potential concerns arising from the proposed BT / EE merger.'

BT does not have SMP in the provision of managed mobile backhaul because other operators can replicate the services by using Openreach EOI inputs (known as EAD) or inputs from other network operators including Virgin Media and C&W/Vodafone and self-sourcing of microwave links. Given these alternative options available to MNOs, who in any case tend to multi-source mobile backhaul inputs, and the fact that such costs represent a small proportion of an MNOs' total cost base, BT has no ability or incentive to discriminate in the way suggested.

Further, Ofcom stated to the CMA recently that:[54]

1.28 The provision of managed backhaul services has not been reviewed in detail to date under the BCMR, but we expect it to be constrained by regulated access to upstream inputs and therefore have not imposed regulation at this level. However, we would keep this under review in accordance with our duties under the European regulatory framework…

1.30 Under the BCMR we have expressed a view that access to the regulated upstream inputs should constrain the managed level. Therefore the level of pricing and quality should be constrained by other suppliers using the regulated Openreach inputs e.g. Virgin Media or self-supply, subject to limitations arising from MNOs' current long-term contracts with BTW.

In addition, the CMA's summary of its hearing with Ofcom on the BT/EE transaction specifically noted, in relation to the scope for discrimination in relation to mobile backhaul:

[54] Anticipated acquisition by BT plc of EE Limited, Ofcom's Phase 2 submission to the CMA, 31 July 2015

26. Ofcom said, in respect of its submission, that the quality of service could be degraded when an MNO sourced from a different supplier using Openreach inputs, it meant degradation in how the additional links were provided. A degraded quality could be how long it took to fit a new link to an aerial site. Alternatively, degradation might mean it took longer to fix faults where they arose.

34. Ofcom said that it had not seen evidence of discrimination in quality of service, rather the issue was the overall level of service. BT was already supplying downstream to itself and to competing providers in business markets and in fixed broadband. If discrimination was already there, Ofcom said it had seen no evidence of it.[55]

This potential concern ought not therefore be used as a plausible basis for structural separation or other fundamental change.

[8] Internal transfers in contrast to 'real cash outflows'

11.35 'BT can make decisions based on overall BT Group returns rather than individual business units. BT Group could effectively consider payments between its downstream and upstream divisions (such as wholesale product costs) as internal transfers. Downstream competitors on the other hand view such payments as real cash outflows from their business.'

It is simply not the case that *where competition could be impacted and hence this distinction is relevant* that BT can run itself on the basis of internal transfers as opposed to real cash outflows. Internal transfers would be used in any competition law assessment of alleged discrimination, as was the case in Ofcom's investigation into an alleged margin squeeze on superfast broadband (an allegation that Ofcom found to be unfounded). Similarly, the regulatory financial statements show business performance on the basis of transfer charges, and these would be used in any analysis of competition impact, or breach of an SMP Condition.

BT cannot therefore ignore internal transfers where competition matters are at stake, there is no meaningful distinction between transfer charges and real cash outflows. Ofcom needs to forcibly rebut allegations by CPs that there is a problem due to 'wooden dollars'.

[9] The concern that integration allows BT to take profits upstream

11.36 'Pricing flexibility on the upstream wholesale product may give BT the ability to earn more profit in the uncompetitive regulated business (Openreach) and less profit downstream in the competitive unregulated business (BT Consumer). Therefore BT might have an incentive to rebalance its source of profits towards its upstream business to reduce the degree of competition it faces downstream.'

This allegation is basically a re-formatting of the margin squeeze issue – the theory that, with upstream dominance, the imposition of a margin squeeze allows end-to-end profits to be maintained whilst downstream competition is distorted.

Where a cost-based direct price control is in place at the Openreach level, no such ability can exist. The only possible material application of this concern relates to Openreach's wholesale fibre product, GEA, which fulfils the VULA regulation.

First, we note that with the margin squeeze test (either under competition law or regulation) BT cannot price in the retail market at levels which distort or foreclose competition in retail markets. Any such ability BT may have in theory is therefore constrained so that it does not have adverse effects at the downstream level (assuming it is demonstrated that BT actually has the ability to impose a margin squeeze). Ofcom has found BT not to be margin squeezing, both under the Competition Act and

[55] ANTICIPATED ACQUISITION BY BT GROUP PLC OF EE LIMITED, Summary of CMA hearing with Ofcom on 5 August 2015

under the ex-ante rule under the Communications Act. Much the same as with [8] above, *where competition could be impacted* this allegation has no force.

Second, Ofcom has not provided a single example of where BT is supposed to have used the ability to rebalance profits to reduce competition in a downstream market. The unstated example might be BT's investment in NGA networks, but here it is factually false that BT's NGA network is an example of moving profits upstream as the rate of return in Openreach on NGA has yet to exceed its cost of capital on the investments.

Nor is it clear why a margin squeeze test, appropriately formulated and applied where circumstances show that the conditions for an effective margin squeeze test are in place, would not address this concern.

[10] Integration causes a 'dilemma' for BT's competitors

11.37 'If superfast broadband customers were to provide lower margins than current generation broadband customers at the retail level, they could still be equally profitable when considering upstream and downstream profits in the round for BT Group. Therefore BT may be neutral between its mix of retail customers. However, BT's competitors may face the dilemma of receiving lower overall returns if they want to change their mix of customers towards superfast broadband in such a case.'

Ofcom is suggesting that <u>if</u> superfast broadband has a higher margin than standard broadband at the wholesale level, then BT has a greater incentive to succeed with fibre broadband at the retail level than its competitors (excluding Virgin Media, which is actually the leading provider in the fibre market).

To the extent that the principle of the conjecture is true, it rather supports the view that integration is *beneficial* for the promotion of new services, an objective we had understood Ofcom supported. But this may or may not be true in fact – whether superfast broadband will be equally profitable with standard broadband will depend on how well the products will sell in future; and competition from alternative providers, such as Virgin Media.

The real world position is that Sky and TalkTalk have both invested in local exchange equipment and associated LLU services and, as a result, they have generated very large customer bases and market shares. Superfast broadband technologies bypass the local exchange and cannot make use of LLU equipment. However, Ofcom owes no allegiance to the LLU technology solution. It was fit for purpose for the market of its time; the investments have now been depreciated; and market outcomes have been achieved. Sky and TalkTalkj now have to make a choice as to whether to respond to the forward-looking market demand and purchase the new broadband services from Openreach (GEA) or remain attached to using their LLU networks, which are effectively very low cost as these networks are largely sunk and depreciated, but limited in terms of market demand.

It is not clear to BT what the problem is: it is simply a matter for the LLU operators to decide how to take their services forward. All options are available on equal terms from Openreach. It might make commercial sense (we assume) for TalkTalk and Sky to avoid promoting the widespread adoption of superfast broadband to use their installed networks as long as possible – that is a matter for them, not a fault of BT's. Indeed, this point has been made by Prof Martin Cave:

"An unbundler which has sunk investment in building out to the exchange or cabinet will face a low marginal cost in supplying its customer with a UCLL-based, as compared with a fibre bitstream product. It will therefore have an incentive to keep the customer on the copper connection, rather than promote a switch to fibre. This aim can be achieved by cutting prices selectively to potential switchers, or simply by not promoting fibre."[56]

[56] Martin Cave. June 2012. "Regulating the price of copper in New Zealand."

This may explain why they have been late adopters of FTTC, are not supportive of G.Fast and have yet to adopt Openreach FTTP. GEA was available to all CPs on the same day. The fact that LLU operators chose not to buy it or market it for some years is not evidence of discrimination by BT: it is evidence of their free strategic choices. It is also the case that as Sky customers access television content via the Sky satellite platform, they do not get the same benefits from higher speeds as customers without Sky TV.

The fact is that BT invested in SFBB and then had every incentive to market SFBB to retail customers without delay. Investing without downstream retail's commitment could have been very damaging to the commercial case for SFBB, as it may have meant the network was underutilised for many years, i.e. until TalkTalk or Sky decided they were interested in selling fibre products.

[11] Alleged discrimination in product development [SoRs]

11.38 'Some providers have raised concerns about product development … that Openreach favours requests which align with BT's wider interests and rejects a high proportion of requests from competing providers on the grounds that their request is not commercially attractive to Openreach.'

No evidence is provided to substantiate this concern. In fact, a look at the evidence available to Ofcom would reject this as a potential issue, as we show in Part B of Annex 2.

To be clear, the Openreach SOR process is run on an EOI basis. CPs are able formally to request the introduction of a new product, or a change to an existing one within the Openreach product portfolio. Openreach evaluates each request and provides the same commercial information to all customers (whether within BT Group or third parties) with no priority given to any customer.

Acceptance of a SOR request is based on whether there is an objective business case, not on the identity of the requesting CP. Openreach ensures transparency of the SOR process through the Openreach SOR Management Tool, which is available to all customers. This enables customers to enter product requirements, view active and historic SORs, and vote to support or not support a request and to provide accompanying evidence.

Openreach's decisions on accepting SORs are subject to review by the EAB and subject to dispute resolution determined by Ofcom. In only one instance in ten years has a complaint been made to Ofcom, and here Ofcom found that Openreach had acted properly. Further, the EAB reports state that it is satisfied that BT is committed to running an equivalent SOR process.

Openreach cannot be expected to accept requests that are not commercially sound, which is the central reason to reject an SOR. If Openreach were to be a separate company, we would expect the same discipline to be necessary, and that the very same decisions would apply.

[12] Openreach culture is not fully focused on equal access

11.40 'Maintaining a culture focussed on equivalence could be difficult where Openreach both supplies downstream providers and competes with them.'

There is no evidence at all to suggest that this theoretical possibility is the reality or even a plausible possibility. In ten years of the Undertakings there are no significant instances of non-compliance with EOI, meaning there is no evidence that the culture is not fully focused on equivalence.

It has always been the case that a small minority of Openreach's revenues has come from non-EOI products. It is in CPs' interests that this continues. For example, Openreach's Service Based Solutions (SBS) portfolio offers CPs a range of bespoke engineering, desk based and advisory services which are tailored to meet the needs of a particular CP application.

Further, Openreach will always compete with CPs who are also customers. Openreach competes with CPs in WECLA, but supplies the same customers with services outside WECLA, but this has never caused an issue. So the real issue for Ofcom is limited to cases in which it could happen that

Openreach is competing with customers in the same part of the value chain; for example, Ofcom might consider it problematic if Openreach were providing two different EOI products in the same value chain which compete with each other. Yet, this is exactly the problem that Ofcom is itself on the point of creating in the obligations to supply both dark fibre and EAD on an EOI basis in the Ethernet value chain.

Ofcom should be positively encouraging the evolution of markets in which Openreach faces fully effective competition, and should therefore be positive about the potential that the non-EOI revenues of Openreach should grow in circumstances where they face competition.

[13] Concern over gaming of cost allocation

11.43 'BT has an incentive to allocate costs to those products that are not competitive.' / 11.44 'It can be difficult for us to distinguish between these legitimate reasons from illegitimate gaming.'

Ofcom has four levels of protection against the possibility that BT might inappropriately allocate costs.

First, Ofcom imposes the most comprehensive accounting separation regime in the world on BT, with the highest degree of detail and transparency for all CPs, without equal in the world. Further these regulatory accounts are audited by auditors with a dual reporting responsibility, to Ofcom as well as to BT.

Second, it has recently taken upon itself the powers to determine the cost allocation methodologies by which costs are allocated. So BT no longer has the power to allocate costs in the way that Ofcom fears, facing the certainty that Ofcom will over-rule any allocations that they deem inappropriate.

Third, in every charge control that Ofcom has imposed on Openreach, Ofcom has adjusted the costs from those published in the Regulatory Financial Statements to define the set of costs that they think is appropriate to include in the costs stacks for the charge control. So even before it took formal powers over allocation methodologies, Ofcom in any event only included costs allocated in the manner they thought fit.

Fourth, Ofcom has recently conducted a study of cost allocation using independent external consultants. We do not understand why Ofcom makes no mention of this cost allocation review here; or that the consultants considered that, while an alternative allocation might more appropriate, that BT had not acted improperly.[57]

Ofcom has also recently taken control of allocation methodologies.[58] Ofcom said then that the changes it was making would:

'(i) give Ofcom a greater role in the way that BT prepares its regulatory financial statements; (ii) improve the presentation of the published regulatory financial statements and supporting documentation; and (iii) ensure that Ofcom and other stakeholders have the information that they need.'[59]

Given that Ofcom has made the required changes it considered necessary to ensure the regulatory statements meet these requirements, and can now intervene directly if it believes this is not the case, it is not obvious to BT how Ofcom can apparently be of the view that BT can game cost allocations.

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[57] Cartesian BT Cost Attribution Review, Redacted Version for Publication, 8th June 2015. Cartesian concluded, "Overall, Cartesian is satisfied that BT's cost attribution system is free from bias. However there are areas of weakness that BT could improve on. This is perhaps unsurprising given the scale and complexity of BT's cost attribution system."

[58] Regulatory Financial Reporting, Final Statement, Ofcom 20 May 2014

[59] Op cit, page 1

Ofcom also confirmed the purpose of the financial statements, quoting the European Commission Recommendation.[60] In summary, these are that they should:

- ensure that fair, objective and transparent criteria are followed by notified operators in allocating their costs;
- reflect as closely as possible the performance of parts of the notified operator's business as if they had operated as separate businesses;
- prevent discrimination in favour of their own activities and to prevent unfair cross-subsidy;
- be capable of reporting regulatory financial information to demonstrate full compliance with regulatory obligations; and
- be of such detail that to ensure that there has been no undue discrimination between the provisions of services internally and those provided externally, and allow identification of the average cost of services and the method by which costs have been calculated.

Given these purposes, we again question why Ofcom entertains a concern over BT's alleged ability to game cost allocation. In short, are there outstanding issues of such materiality that Ofcom is actually of the view that they could justify structural separation? If this is the case, then clearly Ofcom needs to explain the issues which are, in their view, outstanding and explain why they are of such materiality that they could possibly justify such a huge disruption and risk for the economy.

[14] Alleged lack of managerial focus on Openreach

11.46 'The Openreach CEO is currently incentivised to focus on the performance of Openreach, but reports to the BT CEO and the BT Board, who have a wider range of responsibilities. It is possible that a separated Openreach, with a management structure and Board that was only concerned about the performance of Openreach, would have a greater focus on quality of service.'

BT absolutely rejects the allegation that its senior management lacks focus on Openreach's performance, and on quality of service in particular. As we have mentioned elsewhere, service is vital for BT as a Group as our retail divisions rely exclusively on Openreach to deliver. We believe that Ofcom's exclusive focus on cost reduction and the absence, until very recently, to promote service-based regulation, so far just for copper access services, have limited Openreach's ability to prioritise service improvement. We believe that Ofcom's decision to include a cost uplift for regulatory service standards is a positive step.

We further absolutely reject the assertion that a structurally separated Openreach would have more focus on service quality. In a comparison between a) an owner (in the BT scenario) that is wholly dependent on Openreach for service quality to its other UK downstream operations and b) an owner (in structurally separate scenario) with no downstream service operations dependent on, what basis is there for supposing that the structurally separate owner is more likely to care about service quality? A consideration of economic incentives would conclude that there is a greater risk that a structurally separate Openreach would be run for cash at the expense of service and investment by owners unconnected with downstream retail operations.

[15] Concerns about the level of investment by Openreach in new technologies

11.48 'In this context, some stakeholders have raised concerns on the incentives for Openreach to invest sufficiently in both new technologies and in maintaining existing access network connections.'

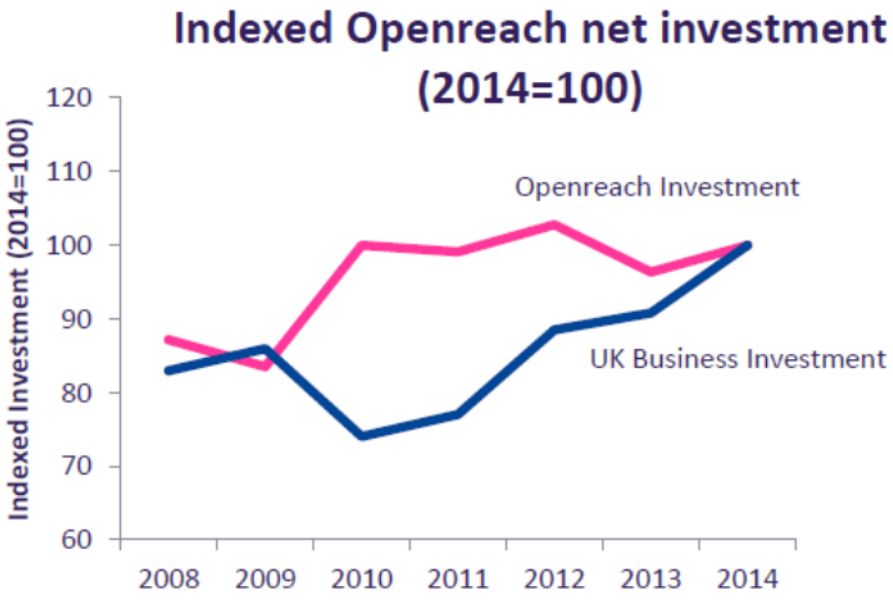
Ofcom offers no explanation as to how this concern is in any way consistent with the good outcomes reported elsewhere in the consultation: the allegation is obviously false. BT is a world leader in the

[60] Op cit, paragraph 2.16, quoting Commission Recommendation of 19 September 2005 on accounting separation and cost accounting systems under the regulatory framework for electronic communications', OJ L 266, 11.10.2005

speed and scale of its fibre broadband deployment, and has put the UK at the top of the league of peer nations in Europe. It is also a world leader in the application of new technologies to fibre broadband solutions. The current example of this is the application of G.Fast from the cabinet to deploy ultrafast broadband, where BT is leading the global ecosystem in the agreement of standards.

This is not a new phenomenon. BT has been leading the world in the deployment of single-mode optical fibre systems for over 30 years, was the first network operator to deploy the technology that is now the foundation of all global communications networks, and has the global transmission speed record of over 3Tb/s down a single fibre on a fibre network deployed in the field. Indeed the benefits that Openreach derives from the technological research and development of BT Group is a strong benefit of the continued integration of Openreach in BT Group, a benefit from which all CPs share on EOI terms as these IP advances are deployed in the network. It is difficult to conclude anything other than that Ofcom's account of the issues of new technology in the Discussion Document is entirely one-side.

In total, BT has invested over £10 billion in Openreach over the last ten years. The Chart below shows, further, that total investment in Openreach was sustained and increased when that in the rest of the economy declined.



Source: BT data and ONS

Further, Ofcom makes no reference to the fact that (unlike BT's Consumer division) neither Sky nor TalkTalk chose to promote SFBB when it first became available, on an EOI basis, from Openreach. For example, Jeremy Darroch, BSkyB CEO, said in November 2010 that:

"If there is demand for fibre from our customers, we will look to provide that but we are not going to rush into that until we see real levels of customer demand that are attractive."[61]

As recently as May 2014, Dido Harding, TalkTalk CEO, commented that:

[61] Financial Times, November 17, 2010

"…fibre is a premium product that really is only appealing to customers who've got poor broadband speeds.." [62]

It is rich for CPs to complain about BT's investment in new technologies when they were themselves declaring that this new technology was not needed and when they showed no interest in the timely marketing of the major new service set Openreach has launched.

[16] Alleged adverse impact of capital rationing

11.49 'A specific concern that might arise from this is that capital rationing within BT results in underinvestment in certain services, and therefore in poor quality of service … expenditure controls may have affected service performance, such as the provision of broadband services to new housing developments'

As Ofcom note, Openreach's capital expenditure has not declined, it has increased and it has increased in terms of its share of the BT Group total capital expenditure and revenue.[63] That integration has unduly restricted Openreach of capital is absolutely untrue, and any characterisation that any strategic issue exists along these lines is false.

We do accept that service provision to new sites has been an issue for customers, developers, and for all CPs, as it has been for our downstream business. This is an operational issue we are remedying as a priority. Indeed, since the beginning of this fiscal year, BT has reduced the tail of sites waiting for connectivity for more than 30 days by 60%. We are on track to reduce the tail by 95% by the end of this fiscal year.

For new homes specifically, we are aware that where we do not have infrastructure near to the location of a development, or if the developer does not give us sufficient notice of their plans so that we can build infrastructure before the homes are occupied, residents can unfortunately face delays in getting connected to our network (especially if this requires wayleaves). We are therefore working with developers, and the government, to ensure that newly developed sites are connected to our fibre network, and that people no longer need to go without broadband when they move into a new home.

We would also observe that site owners do not have to organise communications connections in the same way they do for utilities. BT would very much support action by Ofcom and the Government to improve this issue.

In relation to the more general point that BT has rationed the capital available to Openreach, the allegation is false, demonstrably so, and Ofcom was provided with the evidence of this prior to publishing its Discussion Document. External benchmarking data provided to Ofcom from Nomura (not done for BT, but for Nomura clients) shows that invested capital per premises in BT is greater than all comparators in their survey. BT has provided Ofcom with various points of evidence: Openreach capital expenditure has amounted to over £10.5 billion over ten years. This investment was sustained through the economic recession when other industry investment fell. Openreach invests more than all other fixed network operators combined, and Openreach accounts for an increasing share of Group capital investment. It is most definitely not a Cinderella service within the BT Group.

In any event, no evidence is put forward that the new sites issue results from capital rationing – it was not. There have been no instances in which BT Group has denied, limited or in any other way restricted Openreach directly or indirectly from allocating the necessary capital to new site build.

It is inappropriate, and indeed unjustifiable, for Ofcom to promulgate adverse theories of harm ignoring evidence – not just evidence theoretically available to them, but evidence actually presented

[62] TalkTalk Telecom Group PLC Earnings Conference Call, May 15 2014

[63] Discussion Document, Figure 7: BT Group capital expenditure by division (nominal terms) (£bn): 2006-2014

and discussed face-to-face well in advance of the Discussion document. It might be that Ofcom is not yet persuaded of the evidence, in which case it would be appropriate to note the facts and keep opinion open.

[17] EAB is not sufficiently independent

11.54 'Some stakeholders have questioned whether it [the EAB] is sufficiently independent.'

The EAB has five members, of which three are independent of BT and appointed following consultation with Ofcom. The EAB therefore has a majority of non-BT members. If Ofcom considers that its approved EAB members are insufficiently independent, then it has the power to object to their appointment.

The EAB publishes a detailed report each year. The EAB is transparent, frequently inviting non-BT CPs to present at its generally quarterly meetings. The approach taken demonstrates that the EAB takes a firm and proactive line with BT on compliance issues, and it is not credible to suggest that the EAB is not sufficiently independent of BT.

[18] The Undertakings are inadequate to ensure BT's compliance

11.56 'Currently the Undertakings are enforced through a detailed set of rules and there could be a concern that this is not an appropriate instrument for ensuring compliance.' / 11.58 'We may want to consider whether the ability to levy fines would provide a stronger incentive effect on BT's behaviour.'

We set out in Annex 1 a summary of BT's strong compliance record over the last ten years. To take just one fact from this Annex, since 2006 there has been an average of around 13 breaches of the Undertakings each year, typically half of these are trivial, and none of them have had a material impact on competition. This number should also be viewed in the context of c.90,000 employees involved in millions of internal interactions and external customer contacts each year. For such a very heavy burden of regulation to have resulted in a record of largely trivial breaches is a very strong record of compliance.

The second paragraph quoted above then provides a proposal for further enforcement before any evidence of lack of compliance is put forward. That is not a balanced presentation of the issues, which should also have noted that although the ability to fine BT for breaches is not built into the Undertakings, Ofcom can fine BT for breaches of our EOI obligations that apply under SMP conditions.

Furthermore there are in fact enforcement mechanisms available to Ofcom under the Undertakings. These include the ability to issue a Direction to BT to take steps to ensure compliance with the Undertakings which BT can only reject in the event of its Board expressly approving this. In ten years, Ofcom has only had to issue one direction, which related to a delay of a few months in delivering one aspect of systems separation. Ofcom has never had to use its other power, under which it can take BT to the High Court to secure compliance. Such limited use of the current enforcement powers is hardly compelling evidence of the need for more.

This is not a compelling case for the need for more powers to incentivise or to enforce compliance.

[19] Alleged discrimination in Northern Ireland

11.59 'Some providers operating in Northern Ireland have expressed concerns that the absence of Openreach from Northern Ireland could give BT Retail an advantage over other CPs.'

When the Undertakings were finalised, it was agreed that Openreach should not be established in Northern Ireland but that instead, the BT Northern Ireland engineering force should act as the delivery agent of Openreach there. The principal reasons for this decision were that:

- the BT Northern Ireland engineering force is small and physically separate from the engineering workforce in the rest of the UK. In these circumstances, the organisational changes implemented in the rest of the UK would be inefficient, costly and disproportionate;
- BT Northern Ireland had a narrower range of functions than BT as a whole, with no remit to develop or manage wholesale products.

Although none of the people or assets of BT Northern Ireland moved to Openreach, other requirements of the Undertakings apply in Northern Ireland as in the same way that they apply in the rest of the UK. For example:

- BT must make the same mandatory products available in Northern Ireland as in the rest of the UK;
- the same EOI requirements apply in Northern Ireland;
- the Section 7 provisions relating to location of equipment in exchanges apply equally to exchanges in Northern Ireland;
- the EAB's monitoring and reporting role covers all of the UK, including Northern Ireland; and
- BT Northern Ireland people are trained in the Code of Practice required by the Undertakings, in a variant specifically designed to reflect the special arrangements in place there.

As part of its compliance culture and as good practice, BT in Northern Ireland has voluntarily gone beyond the requirements of the Undertakings in certain respects. For example, whilst the Undertakings themselves do not explicitly limit the extent to which BT Northern Ireland people can have access to Openreach Commercial Information and Customer Confidential Information, the local version of the Code of Practice states that BT Northern Ireland people can only have access to such information where it is operationally necessary to enable them to deliver products and services on behalf of Openreach. BT also established the Northern Ireland Regulatory Compliance Committee, which meets in Belfast, as part of BT's Regulatory Compliance governance structure to ensure local actions maintain compliance against the Undertakings and that any internal or external concerns are formally reviewed and acted upon.

Ofcom has never raised any concerns with BT about any aspect of the way the Undertakings operate in Northern Ireland, and Ofcom in Northern Ireland has stated it is "agnostic" regarding the special status of Northern Ireland and the Undertakings. There has only ever been a single breach of the Undertakings and this was simply an error on an Openreach web page which stated that a new Openreach product was not available in Northern Ireland when this was the case.

To our knowledge, only one stakeholder, a CP based in Northern Ireland, has expressed a concern that Openreach does not operate there, and this has never supported by specific evidence or allegations.

There is simply no evidence that the current arrangements result in an advantage for BT Consumer or BT Business or discrimination against other CPs. In view of this, we believe any change to the regulatory status in Northern Ireland would be unnecessary and disproportionate.

[B] Economic benefits of integration / Integration and incentives for efficient and timely investment

In contrast to the various potential concerns Ofcom posits with integration, Ofcom makes a single mention of the role of integration in promoting investment:

'It can be argued that vertical integration allows closer co-ordination of retail demand with upstream network investment. Such co-ordination may not be as straightforward under structural separation. An argument that is often put forward in this area is that by separating the businesses, Openreach may

effectively lose an 'anchor tenant' in BT Consumer that is prepared to provide guaranteed demand for new network investments."[64]

BT does not consider this single mention provides anything like an adequate description of the investment incentive benefits that are preserved by vertical integration. We agree with Ofcom's view in 2005 that[65]:

"A more restrictive set of obligations on BT [than the Undertakings] would come at a cost in terms of flexibility, practicality and efficiency. In particular, we perceive that there are some benefits to consumers from BT's integration which we are seeking to preserve whilst addressing the adverse effects on competition".

Our view is that the UK's leadership in fibre coverage and speed is largely attributable to the benefits of integration, and that the UK would be towards the bottom of any international comparison for speeds, take-up and fibre coverage had separation been imposed in the past.

On economic incentives, we asked RBB Economics (RBB) to summarise the economic effects of vertical integration and, in particular, to consider whether these theoretical effects would to apply to telecommunications network investments by considering the example of BT's SFBB programme. Their Report is attached to this Response.

Before summarising this Report, we stress that, whilst being integrated with BT, Openreach must also supply all CPs on an equivalent basis to BT's downstream businesses. This means that if BT makes an access investment decision on an integrated basis, Openreach must still share the resultant capabilities with all BT's retail competitors, who are then in exactly the same position as downstream BT. BT still has integration incentives under functional separation, but not the ability to exclude others from also benefiting from these incentives in terms of offering enhanced downstream products. Hence the traditional objection to vertical integration (that it can restrict or distort downstream competition) is removed from a properly formulated functional model.[66]

The great advantage of functional separation (appropriately designed) is therefore that the economic benefits of integration can be largely preserved, whilst the competition concerns about impacts on downstream competition are removed. It is a very pragmatic balance between these two concerns, and one which BT has supported in overseas markets where BT is itself an entrant.

Economic impact of integration

As RBB explain, vertical integration-related benefits arise when actions taken at one stage in the supply chain have consequences at another stage. Such consequences may be described as 'positive externalities', for which RBB use the term 'spillovers'. As they explain further:

'Unless an alternative mechanism [to ownership integration] *can be put in place to ''internalise' the benefits (and costs) associated with these spill-overs, they are likely to be disregarded when vertically-related but separate firms act in their own, individual interests.'*[67]

As a result of these consequences, and absent alternative mechanisms, separation leads to sub-optimal levels of investment and outputs. This implies higher prices for consumers and lower consumption of services (and hence a loss of consumer surplus). There is therefore a benefit in

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[64] Discussion Document, Figure 32, page 130

[65] Ofcom, Notice under Section 155(1) of the Enterprise Act 2002, Consultation on undertakings offered by British Telecommunications plc in lieu of a reference under Part 4 of the Enterprise Act 2002, paragraph 5.61.

[66] Clearly, this depends on BT's compliance with its non-discrimination obligations, as discussed elsewhere in this Response and, in particular, in Annex 1.

[67] Vertical integration of Openreach – the impact on competition and investment, RBB Economics, 8 October 2015, paragraph 23

looking *through* the value chain and making integrated, as opposed to separate, investment decisions.

A very simple example of this general concept is the 'double marginalisation' problem, in which integrated firms choose lower prices than do separated firms when both are making commercially rational decisions.[68] Looking through the value chain better serves consumers than does separated decision making. This fact has been appreciated for many years.

RBB further discuss the argument that the price mechanism can replicate the benefits of integration.[69] RBB explain why the complexities and uncertainties associated with new service development makes it very difficult, in practice, to replicate the benefits of vertical integration through contracts.

The contract argument runs that if separate firms can contract between themselves, they can then replicate the economic benefits of integration. An example might be of a skyscraper developer seeking an anchor tenant which will guarantee to pay for some of the office space for a committed period, and whose presence will help to attract other tenants. In effect, such a tenant de-risks the investment for the developer (by ensuring the floor space will not stand idle) and hence, as risk represents economic cost, promotes investment where it would not otherwise occur - in Ofcom's terminology promotes 'efficient and timely investment'. The key question then becomes whether contracts can provide an alternative mechanism for telecommunications investment to replicate the benefits of integration, as in our skyscraper analogy.

As an illustration, RBB discuss contracting in the context of the double marginalisation example, which appears to be a relatively simple issue to solve via contracts (involving the payment of a fixed sum by the downstream purchaser to access upstream inputs at marginal cost). As they describe,[70] even this straightforward contracting issue, which centres on a lump sum payment, can soon become difficult (and this is before one tries to solve the problem for many, as opposed to a single, downstream business).

However, writing effective contracts becomes far more difficult when outcomes are uncertain (for example, when future demand is unclear) and where there is complexity in the product (or product set) which is traded between the contracting parties. Uncertainty and complexity require, in response, very detailed contracts which may need to be contingent on many possible factors, such as potential future changes to quality in the future, and future levels of demand. But such contracts, needing to be agreed ahead of knowledge of many factors, become prohibitively expensive to write and enforce, leading to what economists call 'contractual incompleteness'. Put simply, in the absence of integration, the incentives for efficient investment depend on the agreement of the parties into a full set of long term, details contracts ahead of the investments being made. RBB explain that in a world in which arm's length contracts are very likely to be incomplete and imperfect, the required commitment cannot be easily replicated by contractual means. To the extent this replication cannot be achieved by contracts being struck ahead of investments being made, separation risks reducing levels of investment.

Superfast broadband investment and integration benefits

RBB's Report identifies four aspects of the theory behind the investment incentive benefits of integration which align the provision of incentives for fibre investments:

- that integration facilitated the timing co-ordination so that the SFBB network was marketed and sold without the risk of it standing idle or largely under-utilised for very long;

[68] RBB paragraphs 39-40

[69] Much in the same way that the problem of externalities are often described as being the consequence of 'missing markets' (pollution ceases to be an externality if the polluter pays a charges equal to the social cost of its actions).

[70] RBB 32 and 33

- that integration meant downstream BT provided an implicit commitment to use the SFBB network without the need for any such contract;
- that integration removed the risk of opportunistic re-negotiation of terms for using the SFBB network after the investment had been made; and
- that integration allows for the internalised spillovers from mutually beneficial activities (for example, better line speeds help to add value to content; and content helps to add value to higher line speeds).

Given that contracts are unlikely to be able to fully capture these spillovers, the clear inference can be drawn that SFBB investments were promoted by integration.

In addition, and beyond the RBB analysis, Ofcom will be aware that BT also needed to respond to a vertically integrated competitor, and one which is planning now to offer its integrated services to nearly two thirds of UK households. Ofcom would be imposing a very large market distortion if it were to permit Virgin Media to benefit from integration benefits, but to deny these to BT.

The 'captive customer' argument is revealing

Some CPs are pejoratively re-phrasing the effect of integration as BT downstream providing a captive customer for Openreach. We understand this to mean not so much that Openreach benefits from integration with BT Consumer (which as we have explained is a good incentive for investment) but that CPs in upstream markets may wish to contract and commit to supply services to BT Consumer, but are excluded from doing so. In effect, this argues that the benefits of BT Consumer's commitment could be shared with other access providers.

We question whether this is realistic. First, we have yet to see any actual proposals (or serious offers) from CPs to BT Consumer, so there is simply no basis evidence that enforceable contracts can be written and successfully negotiated.

Second, throughout the world, telecommunications suppliers who are reliant on commercial incentives are overwhelmingly organised on an integrated basis, which provides very basic evidence that the contracting task is a very challenging one. For example, no mobile company is, to our knowledge, organisationally separate between network and retailing, or has a business model which chooses to rely on contracting for new investments as opposed to integration.[71] Were this structure to be efficient, and RBB do recognise theoretical arguments in favour of separation,[72] one would expect to see such business models proliferate.

Another claim is made that downstream competitors would like to enter into long terms contracts with Openreach for new services. We note here that in the half of the UK broadband market which is not supplied either by the two integrated companies (BT and Virgin Media), there is no history of widespread contracting for network upgrades by retail businesses in this share of the market. This again suggests contracting challenges are very real. In short, were contractual incompleteness not a material issue, one would expect to see long term contracts widely used for innovative new services in telecommunications, with network-based companies routinely contracting with retail-based businesses. However, this is not the case.

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[71] In effect, such a company would be one which only supplied MVNOs, rather than supplying MVNOs as an adjunct to its core business model.

[72] Economists usually incline towards the use of markets for efficiency, and so the use of internal transactions are seen as being likely to be inefficient – especially as their extent increases, and hence the management challenge of overseeing the extent of internal transactions also increases. However, taken to the extreme this would deny the very existence of any larger firm, and such firms exists because they can organise internal transactions better than via extensive contracting and outsourcing. As Ronald Coase noted in the 1930s,the boundaries of firms will be shaped by the trade-off between the costs of external contracting, and the costs of organising transactions within a firm.

Further, even if the contracting challenges could be overcome, there is a further issue as to whether such contracts would need to respect Openreach's EoI obligations. If they do need to, then CPs will have little incentive to commit funds as the benefits of any pre-commitment that they might be willing to make would be shared with their rivals. However, if EoI is not to apply, then there would be adverse implications for competition at the retail level.

Separation in other circumstances

We have stressed in this Response that new investments in innovative telecoms service face high levels of demand uncertainty and a constantly evolving technology, and so it would be very difficult to supply new services via contracts which need to be agreed ahead of any investment being made. Thus, we see integration between upstream and downstream activities in innovative network operators the world over – contracting is not used for new services because it is impractical and excessively costly. For example, consider the difficulty of contracting for the delivery of G.Fast at this time.

In contrast, separation can be efficient for new investment where demand and technology is stable (or where in effect there is no need for commercial contracting because Government takes on the role of guaranteeing demand).

> We understand that Arqiva does use long term contracts for Digital Terrestrial Television, but here we note that the technology is stable, that the competing technology was switched off, and that demand is guaranteed by all the large broadcasters. Arqiva does not face the same level of commercial uncertainty and technological evolution as, for example, G.Fast, and therefore long term contracting is a more feasible option.

[C] Economic impact of risks to investment

BT commissioned KPMG to consider the likely effect of separation on investment and to calculate the impact of any reduction in investment on the wider economy. Their Report is attached to this response.[73]

A reference to the CMA would clearly cause a huge level of uncertainty until the reference was completed, and KPMG's view is that the first impact of such a move to separation would be a likely delay to new investment by BT due to the uncertainty this would cause.

Beyond this time horizon, i.e. following completion of any reference, KPMG then speculate that investment levels may turn on the type of regulatory regime which is introduced. In effect, they see a trade-off for Ofcom. Under what they describe as Counterfactual 1, Openreach is assumed to be structurally separate from the rest of BT and Ofcom is assumed to maintain the current imposed regulatory obligations of EOI and price controls. This would ensure all downstream suppliers can access the Openreach network on exactly the same terms, which supports efficient competition downstream. However, the risk to Openreach associated with a large investment could be raised compared to today, as it would no longer be possible to co-ordinate critical, large scale investments across the BT Group and to de-risk investments as we have discussed in the previous Section.

KPMG recognise that this may mean Ofcom will relax its requirement on Openreach to treat all downstream suppliers on exactly the same terms in order to encourage long term contracts. Thus, under KPMG's Counterfactual 2, demand would be guaranteed for Openreach (or risk otherwise

[73] "Delivering Britain's Digital Future: An Economic Impact Study, A report for BT", KPMG, 22 September 2015

shared) under a contracted anchor tenant but a separate downstream supplier would only take on such a role in return from preferential prices or other terms. Investment incentives would be better than under Counterfactual 1, but only by losing the strict non-discrimination which guarantees competition at the retail level. Thus, even if contracting was possible, there would be a price to pay from separation.

In response to these challenges to the effectiveness of structural separation this, KPMG speculate that Ofcom may feel required to become involved in commercial negotiations, potentially reviewing and approving different contracts to ensure retail competition is not distorted. For example, Openreach could be required to operate under a Fair Reasonable and Non-Discriminatory (FRND) obligation which would allow for some flexibility in striking contracts, but under regulatory oversight. However, KPMG point out that there is no example of a working model of this form of alternative regulatory regime and issues might arise about compatibility with the relevant EU directives with the need to provide regulatory certainty for longer periods than the current three years. Thus, after a period of delay for any reference and investigation by the CMA, there is a risk that this model will deliver less well and effectively than the current approach (if indeed it is possible to develop such a model).

The further question we asked KPMG is how important the planned investment would be for the wider economy. In particular, what would be the cost of sustained sub-optimal levels of investment in terms of detriment to the UK's economic growth and competitiveness? We therefore suggested they model a scenario where the planned investment results in the average broadband speed in 2025 reaching 100Mbps more than would otherwise be the case. BT believes such a differential is plausible and conservative, as BT expects to have rolled out G.Fast to the majority of UK premises and offering they speeds of 500Mbs with this technology.

KPMG's approach to estimating the economic impact of these effects is set out in the appendix to their report. In summary, they show there that:

- the combination of productivity and other spill-over effects could add £3.6-6.2 billion per annum to UK gross domestic product (GDP) by 2025, resulting in the UK economy becoming 0.22-0.38% larger than without such additional investment;
- over the whole period to 2025, a total of £20-30 billion in additional GDP is expected to be generated; and
- there are additional benefits not captured in the estimated GDP impact, including consumer surplus of £5-15 billion over the period to 2025.

[D] The challenges of full separation and creating new legal entities

Summary

The challenges of moving from the current model of vertical integration with functional separation should not be underestimated. Even putting to one side the years that would pass before a decision to impose structural separation as a remedy could be finalised, if the past experience of the implementation of functional separation in the years following 2005 is any guide to the future, it would still then take several more years to deliver full structural separation. The full costs are unknown at this time, but are likely to be [✂]. These are costs that would ultimately fall on the heads of either consumers, competitors, or those who have invested in BT and which could otherwise be used to invest in new services, or improve products, service and quality.

During those years, BT would have to focus on delivering the separation of systems and processes, and the partition of network assets, so it would be inevitable that there could not be the same focus on continuing to roll-out the new and innovative services or indeed enhancing quality of service that are needed to keep the UK in a world class position. Indeed, the systems and process changes required to meet the 2005 Undertakings' functional and equivalence obligations have taken nearly ten years to complete.

In this section, to draw out just how much of a task this would be, we highlight some key issues that BT's leadership team, and many others within the company would need to grapple with. It should also be noted that resolution of a number of these would be outside BT's hands; and would arise through the creation of a separate legal entity, even if still owned by BT.

People. There were 32,400 employees on average in Openreach during the last financial year. The requirements of the Transfer of Undertakings (Protection of Employment) Regulations would need to be addressed in relation to the transfer of BT employees to any new legal entity, as would other potential issues from an Employee Relations perspective. There would be a need for close engagement with the relevant trade unions which represent the interests of BT employees.

The BT Pension Scheme. The BT Pension Scheme is the UK's largest private pension scheme by assets and was the 44th largest in the world at the 2014 year end and had over 300,000 members as at 31 March 2015. Should this review result in proposals that could impact the financial scale and strength of BT plc materially and/or alter the business structure of BT plc (whether entirely within the BT Group (functional separation into a separate legal entity) or involving a transfer of a business such as Openreach from BT ownership – structural separation), this would present material challenges for the BT Pension Scheme, potentially impacting its ability to fund the pensions of Openreach employees. We understand that the BT Pension Scheme Trustee is responding separately to Ofcom in this regard.

The BT Pension Scheme has the benefit of a Crown guarantee whereby the Government has provided a guarantee in relation to BT plc's obligations to the BT Pension Scheme on BT plc's insolvency. This guarantee only relates to the obligations of BT plc in relation to the BT Pension Scheme and would not apply in respect of benefits accrued in the BT Pension Scheme which were then transferred into another pension scheme run by a new legal entity (including within the BT Group) subject to further discussions with the Government.

The BT Pension Scheme's historic liabilities include those attributable to benefits accrued by BT plc employees whilst working within Openreach. If a new 'mirror image' pension scheme was set up by a new legal entity, the value of the historic Openreach liabilities for which the new legal entity would become liable would need to be calculated as well as the proportion of assets within the BT Pension Scheme which should be transferred to the new legal entity's pension scheme. Therefore the set-up of a 'mirror image' scheme would be an extremely complex and extensive exercise, which could involve court proceedings, and is likely to take some years to resolve. It would also require the involvement of the BT Pension Scheme Trustee and likely also the Pensions Regulator.

Wayleaves and other legal agreements. BT currently has in excess of 2 million wayleave agreements across the UK. These agreements are in the name of BT plc, and they are believed to be personal to BT plc. They would therefore all need to be addressed individually so that the new legal entity had the necessary permissions to place infrastructure on, under, or over land, and any transfers or assignments where possible or permitted would be subject to the laws of the different UK jurisdictions. This represents a significant issue as the power to obtain wayleaves under the Electronic Communications Code attaches to BT plc. By way of example, wayleaves include both general agreements that BT has with individual occupiers of private land and comprehensive or national agreements that BT has with large landowners such as the Crown Estates, as provided for under the Electronic Communications Code. Code powers and wayleaves would be required by both entities in relation to their respective roles in core network and access and backhaul networks and for particular locations. This is clearly an issue that would require significant attention, and in many cases renegotiation. Resolving the wayleaves issues would be an exercise that would take several years to complete with considerable costs and complexity, particularly if both entities need Code powers and wayleaves agreements.

Premises (including exchanges). BT's estate includes well over 5000 exchange buildings and hundreds of other buildings (including office premises). Ownership of many of these has been transferred to Telereal under a sale and leaseback arrangement. A viable independent Openreach

would need to take over many buildings within the estate. [✂

] Any assignment of the BT occupational leases will have implications for associated sub-tenancy agreements entered into with CPs which use exchanges for equipment or accommodation. In some cases agreements might need to be renegotiated.

The ownership of each premises would need to be dealt with individually. Short cuts would not be possible here: for example, exchange buildings may house access network and core network assets (and they can include CP co-location space). Each building would need to be properly surveyed and plans prepared to determine which parts would remain owned by BT and which would be transferred to the new legal entity. Only then can consideration be given to new ownership arrangements and it would be necessary to deal, on a building by building basis, [✂

] There would undoubtedly be significant expenses, in particular legal and surveyors' costs and the landlord's professional fees. In addition this would be a resource intensive programme which would require some years to complete.

It may be possible for BT to sub-let the buildings to Openreach, [✂

] In addition to the lengthy process of preparing plans of the sub-let areas for shared properties, the issue of physical separation and working out the allocation of the various costs applicable to the properties would lead to practical complications and further work which should not be underestimated. Granting sub leases would still involve substantial fees and a significant amount of time and resources.

Once it is known who owns what, it would be necessary to address rating issues – i.e. what is the rateable value of the land owned by the different legal entities in each building, and what would that all mean for the existing cumulo rating regime.

Bonds. Certain of BT's bonds contain a disposal event of default which is triggered if BT "ceases to carry on its business or a substantial part thereof". A transfer of assets to a new legal entity would trigger these provisions if the assets transferred were within a level considered to be "substantial" [✂

]

Network separation – division of ownership of assets. Implementation of a structural separation remedy in BT's case would be very different from, for example, the BAA Airports market investigation where Gatwick, Stansted and the other airports involved were clearly distinct trading units, or the private healthcare case where the CMA required divestiture of two smaller hospitals or one larger one. In contrast, BT was created and has evolved on an integrated basis. There would need to be a very large exercise to understand the extent to which such systems and processes can be pulled apart and substituted by independent systems; and where this is not possible for technical reasons, to determine what should then happen. There would be an impact on other CPs, as their systems and processes would have to change to incorporate extra EMP system releases that Openreach need to make. But the need for such change would also apply to the many systems which are not needed to offer equivalent access to all CPs. Introducing new systems takes a long time to implement and would inevitably lead to additional costs, rather than increased efficiency.

Furthermore, the exact boundaries between the two businesses might not be clear. For example, is duct (or the fibre within it) which runs between two local exchanges part of the bottleneck access

network or is it the core network? This would then bring challenges of determining asset values for the purposes of ensuring appropriate arm's length transfers.

If the intention is to foster greater network access competition, and having regard to the fact that a high proportion of the UK already benefits from two competing access networks, there must be a high probability that if other CPs also invest and roll-out their own access networks, those geographic markets will become competitively supplied. But it is by no means clear how, with the passage of time, network assets that had belonged to the structurally separated bottleneck access company could be transferred out of that entity and back into BT plc as those markets become competitive.

Customer and supply contracts. Hundreds of contracts would need to be reviewed to understand the extent to which such contracts could be novated/assigned and obtaining consents would be time-consuming and potentially costly.

Intellectual Property Rights owned by BT would need to be licensed/transferred to the legally separate entity. Consent to transfer/sub-licence any third party intellectual property may be needed.

Shareholder consent. BT's shareholders will need to consent to any transfer of assets to a non-BT owned legal entity if the transfer is classified as a class 1 transaction under the UKLA Listing Rules. It is by no means certain that shareholders would consent if they felt that separation caused 'value leakage'.

Sustainability. Very careful thought would need to be given to what might happen in the years following the imposition of structural separation.

Firstly, following structural separation, what should happen over the next few years as access markets become increasingly competitive; should BT be able to buy back and reintegrate assets, services and activities in upstream markets as and when they become competitively supplied?

Should there be any prohibition on who could acquire the separated business (whether that is a downstream competitor to BT, or a third party market entrant such as Huawei)?

Should the separated business be prohibited itself from moving into downstream markets – in effect, re-integrating itself on a top-down basis?

We think even this short description of potential issues demonstrates that it is a total fallacy to think that requiring BT to enhance functional separation by putting Openreach into a separate legal entity would be quick and easy – rather it is fraught with difficulty, complexity, time and expense.

Question 13: *Are there any actual or potential sources of discrimination that may undermine effective competition under the current model of functional separation? What is the evidence for such concerns?*

Question 14: *Are there wider concerns relating to good consumer outcomes that may suggest the need for a new regulatory approach to Openreach?*

In these two questions, Ofcom effectively asks if it has missed out any concerns under the current model of functional separation, dividing these into discrimination issues and wider issues. We have discussed all those suggested by Ofcom in Section A above. We do not believe there is evidence that any of these have actually held back competition, or reduced timely and efficient investment. Service improvement is a priority, for which all participants in the industry, including Ofcom, have a part to play. Absent some real evidence to the contrary, the issues covered by Ofcom in Section 11 cannot possibly justify structural separation as a proportionate remedy to any collection of the discrimination and wider concerns discussed to date.

BT believes there is need for a new regulatory approach to Openreach, one founded on less regulation, less duplication of regulation, and more focus on service outcomes. Ofcom should be

more mindful of its responsibility to have a bias against intervention in the fulfilment of its CRF and section 3 Communications Act 2003 duties of consistency, proportionality and targeted regulation. We would also highlight the need to recognise that a constant ratcheting down of prices will not be in consumers' interests where service quality is of importance. We also consider that the Undertakings should be reviewed and brought up to date, as discussed below.

Question 15: *Are there specific areas of the current Undertakings and functional separation that require amending in light of market developments since 2005?*

The BT Undertakings

BT believes that the existing Undertakings need to be reviewed. Having been agreed in 2005, they pre-date the 2009 provisions of the CRF and include a large number of milestones and obligations which have been achieved or are now redundant, as well as including obligations which repeat those now apply under SMP regulation, such as the requirement for Openreach to provide products on an EOI basis. At the minimum, BT needs to be released from many of the Undertakings commitments. Ofcom must recognise that it should not use both the CRF and the Undertakings to impose EOI and it cannot impose EOI on Openreach in markets where Openreach is not subject to SMP findings.

We envisage that in a framework that amends or replaces today's Undertakings, Openreach should remain at the heart of the fixed line industry, with a robust governance and appropriate transparency as this will be the best model for positive market outcomes for the next ten years.

Section 4.10 of this response 'Targeted regulation and opportunities for deregulation' provides an additional answer to Question 15 setting out changes to the Undertakings that BT considers necessary. This answer is supported by Annex 4 'BT Undertakings: List of provisions for deletion '.

Other potential models of functional separation

Ofcom briefly discusses other models of functional separation, these being in Singapore telecoms and in the water industry in Scotland.

Ofcom notes that in Singapore the new fibre network is fully owned by the incumbent, SingTel, and that this business is managed at arm's length by a Trust, with the implication that such a model might be appropriate with the UK. There are however significant factors which Ofcom does not mention. These are discussed below; see also the answer to Question 16 which provides more details of the Singapore experience.

First, the fibre business in Singapore has been heavily subsidised by the government, which chose to roll-out FTTP as a public policy decision. The new fibre access business has not been reliant on commercial funding, but is primarily an instrument for Government investment. One implication of this is that the Trust does not need to consider strategic investment decisions, as this has already been established. The access business is also a monopoly, so there are no competition issues to be considered. In contrast, any wholly independent Trust for Openreach would have to decide on commercial strategy - on where and how Openreach invests private shareholders' funds, absent Government involvement/subsidy - and how to compete. Thus, if any Trust were to have responsibilities beyond governance around non-discrimination, and to set commercial direction, we do not consider that SingTel's governance arrangements can be used as a model for BT.

Second, SingTel's ownership of the access business is only temporary, as SingTel is required to divest itself of this business by 2018. In Singapore, the Trust model is not therefore positioned as a permanent arrangement for the industry.

Ofcom also mentions[74] that the Water Industry Commission for Scotland (WICS) has required separation between Scottish Water and Business Stream. The latter is now a subsidiary of state-owned Scottish Water (which is a full monopoly) and maintains customer records and a billing system. The equivalent in BT terms would be for BT Business to become a subsidiary of BT Group. It is therefore simply not comparable at all to making Openreach a subsidiary of BT Group, which would involve (i) the separation of key infrastructure (ii) in a market where there is competition from Virgin Media and others and (iii) in the presence of high risk around new investments which are dependent on commercial funding.

As such, we cannot comprehend that Ofcom sees the WICS model as providing a template for telecommunications.

Question 16: *Could structural separation address any concerns identified more effectively than functional separation? What are the advantages and challenges associated with such an approach?*

Before the Discussion document was published, BT commissioned Plum Consulting to consider the case for structural separation in the UK. Their Report, "This connect'd Isle: building on success in digital communications", is attached to this Response.

Plum's essential response was that, given how well the UK market had been performing on the basis of international metrics, such a move could only be contemplated in the event that a radically different set of outcomes was envisaged. In particular, if there was an objective of promoting a particular technology, then one might look at international models which have embarked on such a journey. However, Plum note the difficulties encountered in such a path as experienced in both Australia and New Zealand, with a "glacial" pace of roll-out in Australia and low adoption in New Zealand. (Indeed, Australia is undergoing a large change in direction as the cost and speed of the FTTP roll-out programme became apparent and an increasing cause of concern.)

In terms of performance against comparable countries, Plum describe that, amongst other favourable comparisons:

- The UK scores higher than France, Germany, Italy and Spain on the European Commission's Digital Economy and Society index and on similar overall indices[75];
- Broadband adoption in the UK is comparable with that in Germany and exceeds that in France, Italy and Spain[76];
- NGA availability in the UK is higher than in France, Germany, Italy and Spain (Plum 3.6);
- Average actual connection speeds in the UK are markedly higher than in France, Germany, Italy and Spain, as are the proportion of connections above 15 Mbps[77];
- Based on market shares, BT faces more competition than do former incumbents in France, Germany, Italy and Spain[78]; and
- International comparisons show that the UK has a highly developed internet economy (Plum 3.12)[79]

[74] Discussion Document paragraph 11.55.2

[75] "This connect'd Isle: building on success in digital communications, A report for BT, Plum Consulting, September 2015, Section 3.4

[76] Plum op cit, Section 3.5

[77] Plum op cit, Section 3.9

[78] Plum op cit, Section 3.10.2

[79] Plum op cit Section 3.12

Such evidence supports the conclusion that for services and investment, functional separation has performed very well in the UK, and not that competition (or competitors) have been undermined by any alleged sources of discrimination.

We would not expect to observe structural separation in the EU where the EC's European Regulatory Framework sets out a maximum set of obligations that do not include structural separation.

As Ofcom notes, structural separation has been implemented in other countries and in other markets.[80] In telecommunications this has been a requirement made by Governments for public funding for superfast broadband deployment and not to address competition concerns. In Australia, ambitious FTTP plans have been reversed to be more in line with the UK deployment model; and experience in New Zealand provides a cautionary example of Government imposing a technology choice (as well as involving a high level of public subsidy).

Ofcom suggests that experience from Singapore provides a more positive example[81] and it is therefore worth reviewing the position and experience there to date.

Key to the Singapore model is a conceptual split between the passive infrastructure layer (effectively dark fibre) and the active infrastructure layer (effectively the electronics). The passive layer is operated by NetCo which is a monopoly and owned and operated by the Netlink Trust, a corporate entity separated from Singtel and subsidised by Government grants. SingTel is currently the sole shareholder, but must divest by 2018. A third tier is that of service providers who have the end relationship with customers. Fibre has been pre-deployed to distribution points and then deployed directly into premises in response to demand.

Fibre broadband coverage is universal in Singapore. BT understands that the early years of implementation were beset by problems in co-ordination and systems compatibility between the layers of corporate entities which resulted from the separation framework. We also understand nine companies have now emerged at the active layer and this level of entry has resulted in end to end complexities with the Netlink Trust in the passive layer, and that both provision and repair services have suffered due to the multiple corporate boundaries. Redundancy in the fibre access network is also a growing problem, with communication providers requesting dedicated fibre lines into the same residential premises.

Singapore is also very different from the UK – implementation has benefitted from the country's small size (being 0.3% the size of the UK), flat and urbanized geography (93% of the population living in MDUs) and a population density 30 times higher than the UK. In addition, there is legislation easing the installation of fibre in new-site developments, and Government grants totalling SGD 1 billion (£500 million) which is a considerable level of public subsidy given the size of the domestic market.

Thus whilst for fibre deployment Singapore enjoys distinct advantages over the UK in terms of geography, and there has been a relatively high level of public subsidy in its fibre broadband programme, the model has not been without its challenges and faces an uncertain future in the ownership (and thereby direction) of its network infrastructure. Singapore has also experienced an uneven service record and grappling with a growing cost of redundancy in its network. Singapore does not offer an insightful template for the UK.

Ofcom does not comment on the failures of structural separation in other industries, bar a fleeting comment[82], but we feel the main question which the Discussion Document omits to address is why integration is overwhelming chosen as the model in telecoms markets. A basic economic observation

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[80] Discussion Document paragraph 11.66

[81] Discussion Document, paragraph 11.68

[82] Discussion Document paragraph 11.69, where Ofcom comments that coordination between retail demand and gas supply was efficiently achieved via contractual means, but that a misalignment of incentives between the network and train operating companies contributed coordination problems.

would be that integration is chosen as to preferred 'boundary of the firm' - by large and smaller access providers, and by fixed and mobile operators - because it is the most efficient type of structure.

A summary of the international experience of structural separation in telecommunications is shown below.

Structural separation: the international experience

Structural separation has only been implemented in a handful of countries (c. <3% of the global total), including Australia, New Zealand and Singapore. But a comparison of these countries with the UK, reveals stark differences:

- **Structural separation was executed prior to the deployment of NGA** while UK deployment has hit 80% without such action and is set to go higher.
- **Structural separation was a by-product of the decision to provide significant public funding towards rolling out NGA:** in effect, structural separation was made a pre-condition to the supply of public funding in all three countries.
- **Overall, structural separation has delivered poor outcomes relative to the UK.** The level of public funding per home based in all three countries is significantly higher than that in the UK (figure 1) and delivered much lower volumes of superfast lines (see Figure 2). While percentage availability and take-up in Singapore, a densely populated city-state with just over a million households, is high, both New Zealand and Australia significantly lag the UK on these measures (see Figure 3).

Figure 1: Expected public cost of superfast initiatives per total premises passed in select countries

(Source: Analysys Mason)

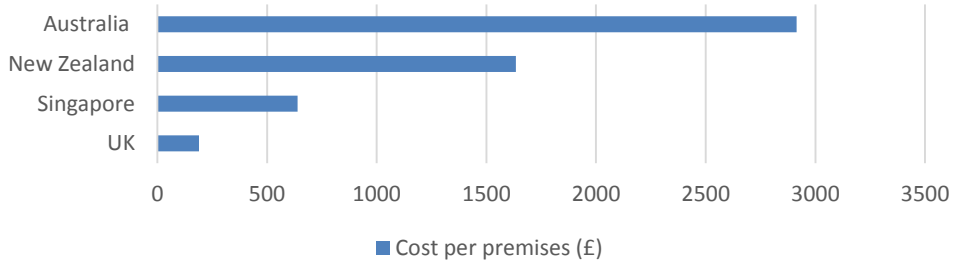


Figure 2: Connected superfast broadband lines

(millions, end 2014)

(Source: Analysys Mason, Commerce Commission New Zealand, Chous, NBN Co, Point Topic, iDA Singapore, Enders Analysis)

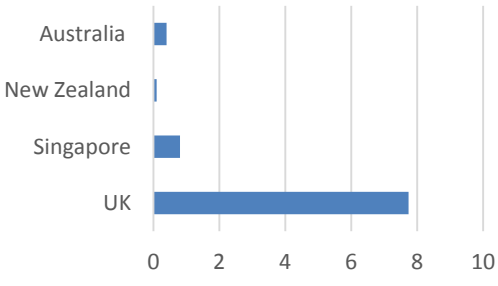
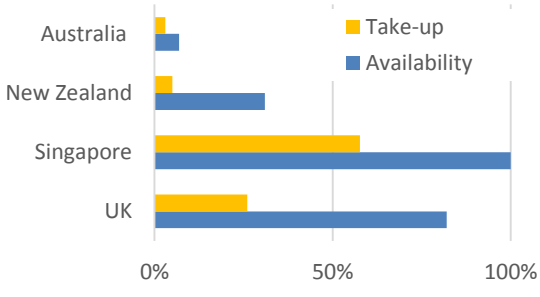


Figure 3: Take-up and availability of superfast broadband

(% premises, end 2014)

(Source: Analysys Mason, Commerce Commission New Zealand, Chorus, NBN Co, iDA Singapore, Point Topic)



4.8 Empowered consumers

This section of our response addresses Questions 17 to 19 in section 12 of the discussion document.

Ofcom's overarching issue

"Should Ofcom do more to further support empowerment at each stage of the consumer's decision-making process?"

Summary of BT's response

- In principle BT is in favour of efforts to support consumer empowerment, as an underpinning of full and fair competition.
- BT believes Ofcom's approach should be to facilitate good and consistent market outcomes and not to control specific conduct in such a dynamic set of markets as digital communications.
- However, in considering how to support consumer empowerment, Ofcom should be mindful of its statutory duties that all its regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed.
- In this light, Ofcom should focus its interventions: a) on the highest priority examples of consumer detriment; and b) on obvious inconsistencies in its regulatory approach, in the application of the many tools and techniques it has already developed, rather than seek ever more interventionist solutions, in areas that are already highly regulated.
- The evidence suggests that consumers are benefiting from the intense competition, from the multitude of fixed line operators for their business. Customers (both residential and business consumers) are well engaged, and able to access and assess information and to act on it by switching.
- The evidence in relation to Pay TV is that, although consumers are engaged – indeed Pay TV is the most important component of the residential consumers triple bundle – they are denied the same easy opportunity to switch providers. Further, they are ineffective in restraining price and Sky's conduct, with its enduring position of strong market power.
- The market place in which most effort from Ofcom is needed is the one with the lowest switching, at a rate of 2%, namely Pay TV, which is only a third of the switching rate typical in communications markets, at 6% to 7%.
- BT believes that the full set of General Conditions are capable of application to Pay TV platforms, both in relation to triple play bundles containing other communications services, but also to Pay TV platforms per se, such platforms being an electronic communications network liable to be regulated under the European Common Regulatory Framework.
- BT believes that Ofcom has, at times, disproportionately focused on BT's network, where it has mandated rigorous switching processes and marketing rules, relative to cable and Pay TV, where these rules do not apply, with no objective reason to justify this inconsistent approach.

BT's answers to Ofcom's questions

Introduction

Empowered consumers, that is consumers who have appropriate access to relevant information, who are able to assess that information and make informed purchasing decisions, and who are able then act on those decisions, underpin fair and effective competition. In retail communications markets, consumers are generally empowered, and as a result the market is highly competitive and customer outcomes are good. In part, this is due to Ofcom's application of advanced and established tools and

techniques that it has available. Generally, there is no need for Ofcom to develop further tools or techniques to support consumer empowerment.

Whilst retail communications markets are highly competitive and customer outcomes are good,[83] the retail Pay TV market remains uncompetitive and consumers, whilst engaged, are far from empowered. The prices of the dominant Pay TV provider's[84] services are high, yet there are persistently very low switching levels. These factors are clear and obvious indicators of customer harm, harm which Ofcom should address as a priority.

When assessing its strategic priorities, and in particular whether it is necessary for Ofcom to do more to further support consumer empowerment, Ofcom should be mindful of its statutory duties. In addition to the factors that Ofcom has highlighted[85], additionally Ofcom should prioritise its efforts and resource on those areas of greatest consumer detriment or where regulatory inconsistency is harming effective competition.

In responding to Section 12 of Ofcom's discussion document, BT has adopted the structure of Access, Assess and Act, under which to group BT's comments, BT then discusses how to measure outcome, the need for future intervention and specific issues that impact on business customers, before moving on to set out BT's conclusions and answer the three specific questions Ofcom posed, questions 17, 18 and 19.

Access

Consumer access to clear and useful information

BT supports the efforts Ofcom has made[86] in relation to improving the provision and quality of information available to consumers, through encouragement, persuasion, and where necessary more formal intervention. Ofcom should apply these techniques consistently in line with its duties. It is notable that some of these policies have been taken forward proactively and voluntarily by the industry. For example, traffic management Key Facts Indicators, were the result of proactive leadership by BT.

Regulation of information provision

There are effective rules governing all significant aspects of the retailing of communications products and services, governing advertising and point of sale marketing, through the capability and functionality of the services offered, and the contractual terms and conditions. However, these rules are not applied consistently to all services that may form part of a consumer bundle or that are cross-sold, for example different rules apply to Pay TV services.

In particular, there is extensive legislation and regulation which mandates the required information which needs to be given to consumers (such as price, description of the key features of the product, cancellation rights, and minimum terms), including in non-sector specific regulation such as the Consumer Contracts (information, Cancellation and Additional Charges) Regulations 2013, and the Consumer Protection against Unfair Trading Regulations 2008, as well as sector specific regulation (for example, the General Conditions) and Codes of Practice, such as the Code on Broadband Speeds, and the Committee of Advertising Practice Codes. In addition, there has been a wholesale review of consumer legislation over the past two years which has resulted in the introduction of the

[83] For example paras 4.5 thru 4.11

[84] Sky, the dominant retail Pay TV service provider, has maintained a share of over 74% of Pay TV market revenues for over 10 years.

[85] Paragraph 12.8

[86] Paras 12.15 and 12.16

Consumer Rights Act 2015, and further requirements for providers to provide mandated information in a clear and transparent way to consumers.

Ofcom should carefully consider the benefit of mandating further information for consumers, at least not in relation to marketing and the sales process, where significant amounts of information is already provided and where consumers are currently subjected to lengthy sales calls for it to be read out, or provided with detailed documents on-line or in stores, and may feel 'overburdened' at the 'point of sale'. In other respects, vital information is provided, for example, the personal speed quotation that BT provides.

Incentives to misrepresent Information

Ofcom suggests that a market leader may have an incentive to produce biased customer information.[87] BT rejects this assertion, both as to the incentives of the market leader and also as to the incentives of other operators. In fully competitive markets, such as retail fixed communications, there is no analytical or evidential basis for Ofcom's suggestion.

Furthermore, there is various legislation and regulation which makes it an offence for providers to give consumers misleading information whether in marketing communications or during the sales process. For example, the Consumer Protection against Unfair Commercial Practices Regulations 2008, regulations which Ofcom already has the right to enforce, make it an offence for suppliers to provide false information, or factually accurate information in a way which deceives or is likely to deceive a consumer and to lead them to take a transactional decision they otherwise would not have taken. Equally, the Business Protection against Misleading Marketing Regulations 2008 clearly set out the requirements for comparative advertising, which are reinforced by the Committee of Advertising Practices Codes, and which in relation to broadcast advertising, Ofcom is a co-regulator.

BT would therefore suggest that to the extent Ofcom believes there to be misleading information or marketing being published, it should seek to take action under the existing regulation and legislation under which it has existing powers rather than seeking to provide consumers with additional information, or information to correct any misleading impressions which may result from the information in the market.

Advertising Control

One area in particular where Ofcom's engagement / view would particularly be welcome by BT, is in relation to the comparative advertising which has been particularly prevalent in the industry over the past 12 months. BT is concerned that recently there has been a number of technical comparative claims made in advertising which in more than one case have been published without adequate, or easily accessible substantiation. Whilst complaints have been made about these claims to the advertising industry regulator, the Advertising Standards Authority (ASA), BT's concern is that despite complaints being up-held, these claims remain in the market for a considerable period of time whilst being adjudicated upon and as a result, cause further confusion, and a resulting lack of consumer trust, in the industry. BT would value Ofcom's support to work together with the ASA and CAP and BCAP in this area to ensure that misleading claims are removed from the marketplace as quickly as possible.

Assess

Generally BT believes that there is a significant level of assistance available to consumers to help them assess the information that is available to them and to make informed decisions to act. As the market changes and develops, BT would expect that retailers will respond with tools and other forms

[87] Para 12.13

of guidance, in response to, for example, increased complexity. Until such time as Ofcom identifies a problem that is or is likely to result in consumer harm, it would be premature for Ofcom to intervene.

Advisory Bodies

We do not support Ofcom's idea of a "Money Advice Service" for communications. There are many difficult issues in ensuring that customers are included in the benefits of digital communications, which are worth prioritising and should be subject to a specific focused consultation, but advice on which of a range of commercial propositions would be better for an individual consumer, is not an appropriate focus of public effort.

Broadband Speeds Code of Practice

The current Broadband Code of Practice Version 3 was published in June this year and became effective 1 October 2015. It was four years in the making and brings SFBB into scope. It is voluntary and BT Consumer and Plusnet are signatories. However, it applies to fixed broadband only. In BT's view a similar code of practice should apply to mobile broadband speeds, covering 4G as well as 3G.

BT Business is working with Ofcom to develop a business version of the Broadband Speed Code of Practice and is committed to its introduction as soon as possible. Work is well underway with a target of publishing the first draft of the code in October 2015 (with full implementation in Summer 2016).

Accreditation of price comparison websites (PCWs)

BT is generally supportive of Ofcom's approach and policy on PCWs and accreditation. Consumers benefit from accurate, transparent and comprehensive advice that compares communications providers and their services. Ofcom's accreditation of certain providers adds further credibility and helps ensure that price (and other) information is accurate. However, as discussed above, consumers in communications markets have access to the information necessary to evaluate communications services and make informed purchase and switch decisions, as such BT does not believe any intervention is required to provide for additional information to price comparison websites / intermediaries.

From a business specific perspective, and as the business market continues to develop and mature, it may or may not become less price oriented, relative to today, with consumers focussing more on other product attributes, e.g., service and reliability, range of content, etc. BT Business are happy to support third parties to develop PCWs designed specifically for SME customers, but the wide scope of the business portfolio makes this a challenging exercise to provide comprehensive support for what are very varied customers.

Understanding how the market continues to develop would therefore help inform Ofcom's policy on PCWs and accreditation, and whether more product bundling implies a need for more detailed and Ofcom accredited comparisons, or conversely, rationalising the number of accredited price comparison schemes, or simply re-focussing accreditation to other product attributes.

User generated reviews

Increasingly, digital connectivity and social media provide points of reference for consumers (such as those referred to by Ofcom[88]). BT is not aware of any barrier to their development or continued operation, and in the event demand emerges we assume the market will develop apps and tools that

[88] Para 12.48

support user generated reviews and otherwise. We do not see this as being an area for Ofcom intervention or policy.

Ofcom customer complaints reporting

BT is open to considering what further information on service quality would help customers assess differences in services and operators, and what improvements can be made to the information that is available. For example, Ofcom's practice of collating and publishing customer complaints data is intended to help inform consumer choice, BT remains concerned to ensure that any such data more accurately represents market activity. Currently, the data may not adequately capture important market characteristics, in that, complaints will more likely track general levels of market activity. For example, those CPs experiencing higher levels of churn, switching and demand, relative to the more static CPs, would proportionately more customer activity (and potentially more complaints).

Common Comparators

BT would strongly oppose dirigiste type proposals to mandate the characteristics of retail propositions. BT cannot see how this could be an appropriate approach in such a rapidly changing market, or consistent with Ofcom's duties for targeted proportionate regulation. It would be challenging for Ofcom to keep up with the changes in customer preferences in the market, and the need to ensure that new, exciting propositions meet a defined set of common comparators or that have to be marketed in a standard way, may act as drag on innovation and cause more harm than good.

Act

Number Porting

Number porting remains a problematic source of poor customer experience. BT believes that Ofcom needs to prioritise work with the industry to resolve the issues, as number porting will be a rapidly increasing phenomenon in years to come, driven by the migration from traditional telephony to IP-based telephony.

While industry attention has turned to broadband and enhancing consumers' switching experience, including triple and quad play bundles, Ofcom and industry must not lose sight of a key enabler for effective consumer choice, number portability. The ability to port numbers seamlessly is likely to be critical to a consumer's and a business' ability and willingness to switch provider.

In BT's view, this issue is even more pressing given the strong emergence of IP and OTT services, and industry's move to IP based voice services (from TDM / PSTN). BT Business especially supports the importance of this being a critical industry wide issue given the majority of lines are now with other CPs. It vital that Ofcom supports coordinated action to drive improvements to the export and import of numbers across all CPs and all platforms.

Switching

Introduction

BT has no principled attachment to gaining provider led (GPL) processes; in practice BT supports GPL because Ofcom has mandated them on the Openreach network. BT does not believe that GPL processes are by definition smoother than losing-provider-led processes. In fact, GPL processes may run the risk of inaccurate identification of the asset to be transferred, unless this is properly engineered into the switching process. In general, making the processes a good customer experience is the top priority, but it is not automatic in either approach. We believe that the GPL processes we have designed on the BT network have the potential to provide a good customer experience, but this must be evaluated with the test of time.

Fixed switching

BT accepted and played a leading role in implementing gaining-provider-led (GPL) switching processes on the Openreach network. As a result, customers of CPs offering retail services based on this network benefit from highly regulated switching processes, processes which, combined with the competition ready nature of the Openreach network, facilitate good consumer choice and the ability to act on those choices. However, in relation to fixed line customers based on cable and other (non-Openreach) networks, those providers are able to exploit the current lack of application of Ofcom's regulated switching processes in such a manner as to undermine the purpose of Ofcom's switching policy.

Mobile switching

Whether it is necessary to alter mobile switching processes must be considered by Ofcom in the context of actual consumer behaviour (in how customers purchase mobile services - recognising the very low levels of purchasing of mobile services within a quad-play bundle) as well as any actual evidence of consumer harm, just as the application of GPL switching processes to cable and Pay TV, should now be prioritised in light of the evident consumer harm.

Triple-play and cable to fixed switching

Triple-play bundles of fixed communications and Pay TV services are the predominant form of convergence in the retail consumer market. Where broadband is cross-sold or bundled with Pay TV, the ability for the Pay TV provider to actively save customers is likely to result in reduced broadband switching overall. As such, the same rules must apply to all providers, of all the services, which are includes in bundles and that matter to consumers. By far the most pressing need is to ensure consistency of switching processes across cable and other networks and Pay TV, given the growth in the number of bundles.

As a consequence, BT generally believes that switching from and to other networks and platforms should follow similar or the same GPL principles as have been imposed on BT.

In this respect, whilst BT does not believe that reviewing mobile switching should have been prioritised over cable or Pay TV switching – especially given the level of mobile switching contrasted with fixed communications and Pay TV, the low levels of quad-play bundle take-up demonstrating different switching behaviour amongst mobile customers, resulting in an absence of consumer harm – BT is pleased that Ofcom is now considering Pay TV switching and cable switching. This work should be prioritised if further consumer detriment is to be avoided.

Further, we do not believe possible consolidation in the mobile market as a result of Hutchison's proposed acquisition of O2 is a good reason[89] to prioritise mobile switching, as it is not clear that, if the acquisition completes, switching behaviour will change, and in any event ensuring appropriate safeguards are put in place is a matter for the merger control authority.

BT suspects, although this appears not to be set out in the DCR document, that Ofcom has felt inhibited in applying regulation consistently across retail markets, including to Pay TV platforms, by doubts about the extent to which the General Conditions (GCs) apply to Pay TV platforms as well as to other communications services. BT believes that the GCs are capable of application to Pay TV platforms, both in relation to triple play bundles containing other communications services, and in relation to Pay TV platforms per se. Pay TV platforms are an electronic communications network liable to be regulated under the European Common Regulatory Framework. Where TV platform operators sell a broadband service along with access to a Pay TV platform, that operator's conduct should equally be constrained by the general conditions as they apply to their communications services. Ofcom should progress its work to ensure a level playing field by applying the same rules

[89] Para 12.23

to operators offering triple play bundles, including how they apply to marketing activities, as apply to fixed line operators using the Openreach network.

Aligned contract end-dates and minimum contract periods

In such a dynamic and rapidly changing environment as communications, it would be wrong to seek to control the market through regulation, rather good market outcomes should be facilitated by driving competitive conduct. Example of inappropriate control, as opposed facilitating a good market outcome, would be requiring all contract end dates, for services within a bundle, to be aligned to facilitate switching[90] and minimum contract periods. This would be neither practicable not would it produce good market outcomes, for example customers would be restricted in exiting one part of bundle which the customer felt was underperforming or that the customer could obtain a better deal else on that product elsewhere.

For example in many cases, consumers take communication services from one provider and TV services from another but decide at a later date to switch all their services to just one of their existing providers, or consumers may decide to add services to those they are already receiving from one provider. If contract end dates were required to be aligned, it could lead to providers automatically extending existing minimum term periods to align with the minimum term period of the new product, or otherwise imposing minimum term periods on services which may be on rolling month to month contracts.

BT suggests that a more practical, and arguably more effective approach to the harm Ofcom is seeking to address would be to focus on aligned switching processes across communication and Pay TV services, with a corresponding enforcement of the General Conditions, in particular GC9 which requires customers to be allowed to terminate their contract without penalty financial penalty. Ofcom should also be diligent in ensuring compliance. Investigating and taking action on aggressive retention techniques, as conducted by Sky consistently, is an example of that.

Harmonised switching

Instead Ofcom should be mindful of its statutory duties and apply targeted consistent interventions. Harmonising switching processes over time is an example of that, so long as Ofcom prioritises the examples of greatest customer detriment.

Porting of personal data and other content

Ofcom identifies as a result of consumer detriment a need for targeted intervention on, for example, the ability to port personal data and other content or services when switching service provider, Ofcom should not seek to intervene in this aspect of the market.

Collective Switching

BT does not perceive any apparent barrier that would prevent, should there be a viable commercial model for a collective switch initiative, for the operation of that model. Given, the fiercely competitive nature of the retail communications market, the number of providers in the market, both scale and niche operators, it is likely that there is no space for such a model. Absent Ofcom identifying specific consumer harm, in respect of which a collective switch initiative may provide a remedy, BT does not consider this an appropriate focus of public effort.

[90] BT notes that there may be some confusion in terminology, in particular the difference between cross-selling and bundling. If contracts have separate end-dates they are not part of a single contract bundle, but are examples of cross-selling of different products under different contracts by the same provider.

Measuring Outcomes & Future Intervention

Measuring consumer outcomes

It is important to ensure that information is available from providers that is meaningful to customers and that comparative information is made available from multiple independent sources, including Ofcom itself. Whilst more detailed switching information or customer engagement metrics may be interesting from a policy making point of view, the collection of this data will not change market outcomes.

BT disagrees with Ofcom's assertion that "[a] *group of* [voice] *customer may not be effectively engaged in the market*".[91] On the contrary, the huge attrition in the fixed voice market, its displacement by mobile and increasingly IP voice, and take up of new voice only offers strongly suggest engaged consumers. Further, its over-shadowing by broadband competition and the prevalence of triple-play bundling, ensures that customers get good value for money in bundles containing fixed voice. Ofcom's priority should be to focus on addressing the elements of the bundle that are the most important element in determining customer choice and the least competitive, i.e. Pay TV.

Future developments and consumer empowerment

The increasing complexity and dynamism in the market is not in principle sufficient reason for Ofcom to intervene further to support consumer empowerment. These trends are the result of the market adapting to changing consumer behaviour and seeking new ways to satisfy new consumer conduct and preferences. BT believes these trends are rich in consumer benefits and represent the vibrancy of competition in innovative markets. It is too early to predict whether, where or when consumer issues will arise in future. Instead Ofcom should be prioritising known consumer detriments obvious and present today, above all in Pay TV markets.

It would be premature to speculate as to problems that may emerge or may not emerge. It is not in the interests of any provider that their actual or potential customers feel overwhelmed or fail to make choices because they cannot be bothered. There is no reason to believe, ex-ante, that competitive markets will not find the right way to inform customers and help them make effective choices. This is particularly true where providers are seeking to grow the range of services they sell their customers and grow their share of new markets, as stimulating customer choice and empowerment will be vital.

Ofcom should prioritise action in the known uncompetitive markets, in Pay TV, where Sky uses numerous techniques to protect its strong market position to the detriment of end-users.

Business / SME Customers

Much of the above analysis and discussion relates to both residential and business consumers. There are, however, a number of issues likely to be specific to business and SME consumers, for example, where the market characteristics are fundamentally different to those in the consumer market. Therefore, we set out below a number of additional points on the SME market. Annex 5 to this response provides a more detailed overview of the business / SME market and the breadth of competition that exists.

In terms of effective engagement and empowerment, we believe that SME customers are well-informed, capable and sufficiently empowered to make the right decisions for their businesses. BT Business will, however, continue to improve customer information, not least, the relevant sections of 'bt.com' to ensure the customer journey is informative and straightforward, including a review of how pricing information is presented. BT Business provides a range of customer insights, white papers, case studies and other collateral to help customers make informed choices and continuously revises

[91] Para 12.38

and updates this material, seeking ways to increase awareness and make it more accessible to SME customers.

Taking work forward on these initiatives will further help and empower BT's SME customers, but may also provide competitive advantage and differentiation. This is key in the SME market since it is clearly very diverse, where the imposition of standard products and solutions would inhibit competitive differentiation (required to meet these diverse needs and demand).

The General Conditions give Ofcom the powers it needs to investigate and, where appropriate, intervene in the market. We do not believe that that there is a case, based on the evidence to date, for any extension to these existing powers. That said, and while the SME market is highly competitive, with market forces driving the right demand-side behaviours, Ofcom should use the powers they have under the GCs to ensure that all CPs are compliant with their obligations.

Were Ofcom to take work forward in this area, BT would support the development and publication of a balanced scorecard of measures relating to CP performance against the relevant obligations under the General Conditions. As noted above, research shows that a significant proportion of micro-SMEs are also choosing to use residential broadband services (further detail is provided in Annex 5). In the same way that CPs effectively have an obligation (and economic interest) to consumers in respect of information transparency, CPs have a role in ensuring businesses are clear on the range of choices available to them, and the potential implications – for their business – of different product choices.

To that end, and as discussed in this response, BT believes there is a continuing role for Ofcom in ensuring information is developed and presented in a transparent way, for example, through further development of the industry wide Code of Practice on Broadband (including Broadband speeds). Moreover, Ofcom should continue to provide information and guidance on its website on key product characteristics, like contention rates, such that businesses are aware of these issues and are prompted to carefully consider their product choices.

Conclusions

As empowered consumers, purchasers of retail communications services and products can both access and assess the information that they need to effectively evaluate those products and services, and do act on those assessments, readily switching between service providers based on the Openreach network.

Answers to specific questions

Question 17: *What do stakeholders think are the greatest risks to continuing consumer engagement and empowerment?*

As per the foregoing discussion, the greatest risk is the inconsistent application of regulation across converging market propositions. This inconsistency of regulation is already distorting market outcomes. Ofcom should focus on the priority examples of consumer detriment, especially in Pay TV.

Question 18: *What indicators should Ofcom monitor in order to get an early warning of demand-side issues?*

Ofcom has all the data-sets available to it necessary to identify the priority issues. It should look at pricing, market concentration, switching, non-compliance with regulation and complaints, and prioritise dealing with the obvious examples of consumer detriment, especially in Pay TV.

Question 19: *What options might be considered to address concerns about consumer empowerment at each stage of the decision-making process (access, assess, act)? What more might be required in terms of information provision, switching and measures to help consumers assess the information available to them? What role may Ofcom have to play compared to other stakeholders (including industry)?*

As per the foregoing discussion, Ofcom should use the tools and techniques it has already established, consistently across the range of converging market propositions, to ensure that the benefits of consumer engagement and empowerment, which are evident in fixed line communications, are available in all parts of the market equally, especially Pay TV.

Ofcom should facilitate good market outcomes and not seek to control conduct in such a dynamic market. It should work closely with the ASA to ensure that good market practice is consistently observed, and where there are complaints, that these are resolved expeditiously.

4.9 Delivering quality of service

This section of our response addresses Questions 20 and 21 in section 13 of the discussion document.

Ofcom's overarching issue

"What more should Ofcom do to support better quality of service for consumers, in either competitive or less competitive markets?"

Summary of BT's response

- Service is at the heart of BT's strategy – across all of BT – and has been explicitly a priority for at least seven years.
- Customers' expectations, needs and demands have transformed over the past decade. The importance of service and service levels has increased substantially over the last ten years – with the move from telephony to converged services.
- Service has not always met customer expectations but is improving and we have plans to improve further: being a key part of BT's commitments for the future.
- In a well-functioning competitive market, service should be a key differentiator with offerings across the market reflecting customers' different willingness to pay.
- Service is a shared responsibility between CPs and Openreach and Ofcom. Service performance throughout the value chain has an impact on the service end customers receive.
- Ofcom should recognise its own part in determining service outcomes in the industry and appropriately promote service quality, using the powers it already has under the Common Regulatory Framework.
- Combining BT Wholesale and Openreach in to a single organisation serving CPs would deliver better service more quickly with greater external focus whilst maintaining EOI/Customer Confidential Information (CCI)/Commercial Information (CI) safeguards

BT set out a number of pledges on 22 September including some relating to service. In particular Openreach will improve reliability, transparency and customer choice. For Business customers we will increase the volume of completions, increase our speed of delivery and introduce appropriate Ethernet minimum service levels. For Consumer and SME customers we will raise our service standards and reliability, provide greater choice and put customers in control.

BT's answers to Ofcom's questions

"What more should Ofcom do to support better quality of service for consumers, in either competitive or less competitive markets"

Evolution of the market and service quality

As Ofcom's discussion document notes, the market context in which the current review is being undertaken is fundamentally different to some 10 years ago. Connectivity and broadband are now at the heart of everyday life and the dependence on networks and broadband services has increased substantially. Relative to the small number of broadband connections a decade ago, there are now in excess of 22 million residential and SME business connections, all supporting a wide range of connectivity and service.

The overall growth in the market has also been supported by competition, with over 9.8 million external lines having been unbundled by Openreach since 2005 and more than 535 Communications

Providers now consuming Openreach services. The market has experienced similar levels of growth in the business market, as evidenced by the considerable increase in demand for Openreach's portfolio of Ethernet services.

As the market has evolved and grown, customers' expectations, needs and demands have also transformed. The importance of service and service levels has increased substantially over the last ten years, reflecting greater reliance upon connectivity and the shift from telephony to the demand for converged broadband services. BT acknowledges that service has not always met customer expectations. However, BT's service continues to improve and we have concrete plans and initiatives underway to build on these continuing improvements in service.

BT's strategy and customer service

Customer service is key to BT's overall strategy and central to our culture; reflected as one of the main pillars underpinning BT's vision and strategy. This is illustrated below:[92]

There is a clear and unambiguous commercial incentive to ensure service quality meets customer expectations and demand. We have made considerable progress on the Right First Time programme and are now looking to build on that by furthering BT's Customer First mindset, and gearing everything we do towards making things better for our customers. In terms of consumer outcomes, we will meet the following objectives:

- Service levels significantly better than today supported by efficient industry processes;
- Resilient network services;
- Transparency; and

[92] Source BT. Note: Service has been a key pillar in BT's strategy since 2008

- Effective consumer protection in place.

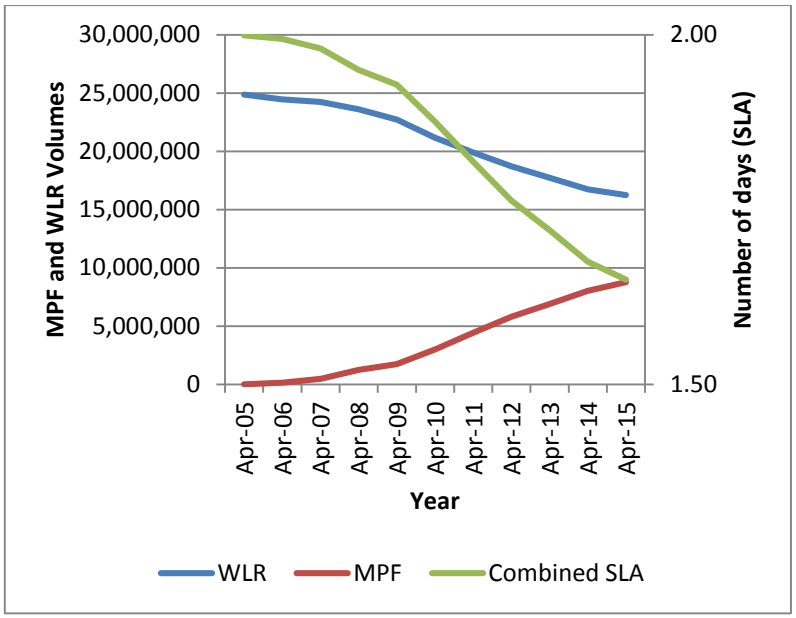
Openreach service performance

Against a backdrop of ever increasing customer expectations which have not always been met, it is not true that Openreach has failed to provide improving service.

First, faults in the access network have reduced by 16% over the life of Openreach (40% over the last 20 years).

Second, the average repair times in copper products has improved over time. The mass migration of the market from WLR products with working-day-plus-1 repair standards to MPF with next-working-day repair standards has meant that the average contracted time to repair has reduced from 2 days to 1.65 days, a reduction of 17.5%, as shown in the graph below:

Openreach Repair SLA performance:



Third, in recent times, it is clear that Openreach performance in meeting its service times in broadband products has been improving.

Fourth, since Ofcom imposed a balanced approach encompassing Minimum Service Levels, Openreach exceeded all 60 MSLs in 2014/15 - Openreach.co.uk:

Openreach performance in 2014-15 for the Provision on-time Minimum Standard. The 2014/15 Minimum Standard is 89%			Openreach performance in the 2014/15 for the FAD Minimum Standard. The 2014/15 Minimum Standard is 54%			Openreach performance in 2014/15 for the Repair on-time Minimum Standard. The Minimum Standard is 67%		
Region	Product	Year End Result	Region	Product	Year End Result	Region	Product	Year End Result
Scotland	WLR	92.2	Scotland	WLR	86.3	Scotland	WLR	72.9
	MPF	94.7		MPF	88.7		MPF	74.6
Northeast	WLR	93	Northeast	WLR	96.5	Northeast	WLR	75.9
	MPF	94.7		MPF	97.5		MPF	74.6
North West	WLR	92.3	North West	WLR	99.2	North West	WLR	76
	MPF	94.3		MPF	99.8		MPF	74.5
Nw & NM	WLR	91.5	Nw & NM	WLR	96.8	Nw & NM	WLR	72.4
	MPF	93.3		MPF	97.7		MPF	72.3
SW & SM	WLR	92	SW & SM	WLR	92.9	SW & SM	WLR	77
	MPF	94.3		MPF	93.5		MPF	76
Wessex	WLR	92.3	Wessex	WLR	94.9	Wessex	WLR	75
	MPF	94.6		MPF	95.7		MPF	75.7
South East	WLR	92.6	South East	WLR	97.2	South East	WLR	78.7
	MPF	94.8		MPF	97.3		MPF	75.4
London	WLR	92.8	London	WLR	97.5	London	WLR	79.7
	MPF	94.8		MPF	97.2		MPF	76.4
East Anglia	WLR	93.5	East Anglia	WLR	98.8	East Anglia	WLR	77.2
	MPF	95.2		MPF	99.3		MPF	75.7
N. Ireland	WLR	91.9	N. Ireland	WLR	99.4	N. Ireland	WLR	85.7
	MPF	93.6		MPF	100		MPF	85.1

Fifth, in relation to new sites, since the peak earlier in this fiscal year, Openreach has reduced the tail of sites waiting more than 30 days by more than 60% and is on track to deliver 95% reduction by the end of the fiscal year. Whilst Openreach was slow to recognise the increased trend in the new build housing market and to allocate the resources required to meet the demand, it is now making great progress in this area.

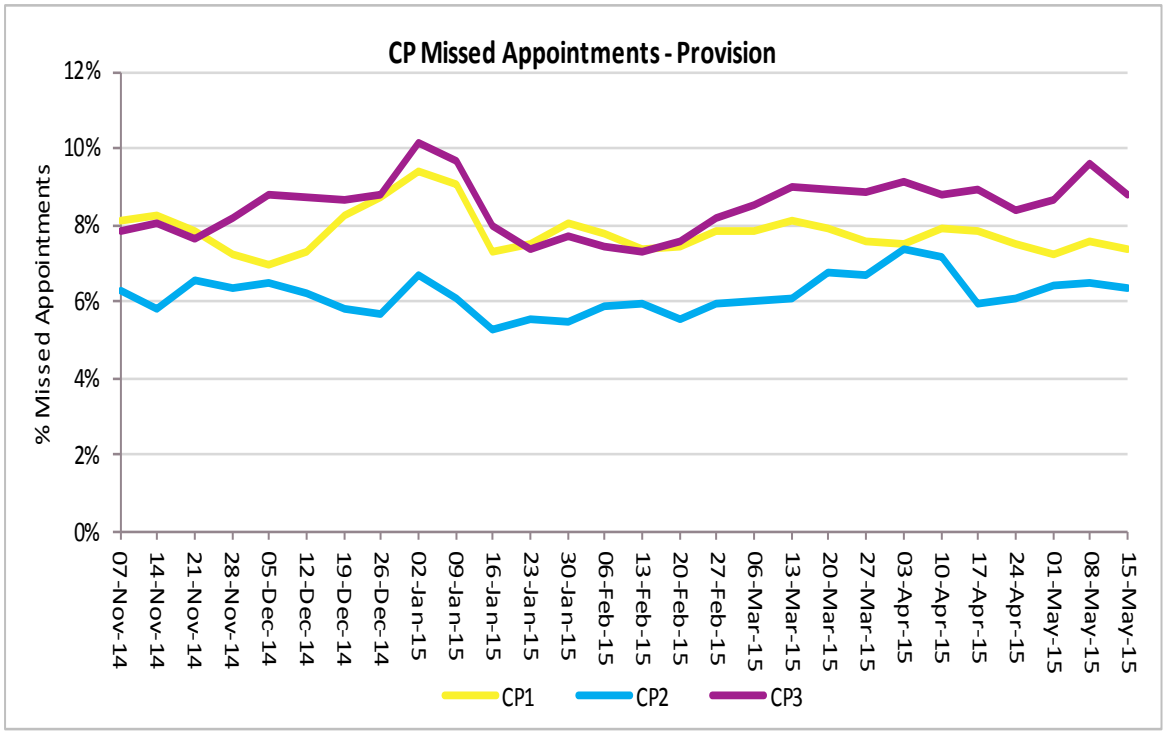
Sixth, in relation to Ethernet, Openreach recognises the continuing frustration of customers in slow delivery of new network for Ethernet connections. However, Openreach has increased its weekly output by 30% in the last year to meet rapidly growing demand.

Service is a shared responsibility

There have been fundamental changes in the industry since the last review and an increasing degree of competition based on Openreach's products and services. However, connectivity to the internet is now a complex situation with multiple parts to the overall customer experience – from the customer's environment, to the hub, access network, backhaul network and the internet itself.

Service is not just attributable to Openreach performance. For example, retail BT Consumer Broadband faults recorded as an average over the last five years shows that [✂] of Broadband faults are own customer's domain (customer's side of the network) whilst BT Wholesale and Openreach account for [✂] of reported BT Consumer Broadband faults. A similar ratio is recorded for BT Business reported broadband faults, with [✂] in the customer's domain and [✂] in the BT Wholesale, or Openreach domain (Openreach service performance is discussed in more detail below).

Moreover, careful analysis of service across industry reveals that even where exactly the same Openreach product input is used, CPs' service level performance can differ quite considerably. This is shown in the graph below.



CP1 is [✂]
CP2 is [✂]
CP3 is [✂]

The graph above shows CP behaviours cause differing performance as to whether customers are in and ready when the Openreach engineer arrives for the agreed appointment slot (using exactly the same product and information from Openreach). For example CP2 has consistently performed better than CP1 and CP3. This demonstrates how service is a shared responsibility between CPs and Openreach – all parties' service performance throughout the value chain have an impact on the service end customers receive.

Service levels for end customers are the result of processes that need to work end-to-end in the industry. It is not just Openreach's responsibility. For example, poor volume forecasting by one downstream CP can result in a capacity constraint in Openreach, which can have knock-on effects across all downstream CPs. It takes well-organised processes and full end-to-end compliance with those processes to achieve consistently good customer outcomes.

Service levels in a competitive market

The scope for service differentiation is considerable in communications markets. This is unlike many other markets such as the provision of utility type services. When considered from the perspective of a bundle of services, e.g. telephony, broadband and TV, consumers and businesses can, and do, have very different service requirements, and these service requirements might even vary across the suite of products within the bundle.

Competitive markets should (and the fixed communications market does) provide for differing service levels, reflecting different customer demands and requirements. Service should be a key competitive differentiator with offerings across the market reflecting customers' different willingness to pay. This is a key principle that should underpin Ofcom's policy, whether at the wholesale or, particularly, the retail level.

The application of the principle across the value chain gives rise to a number of considerations. In competitive retail markets, Ofcom can promote service simply by making the information about

differential service performance available. Ofcom should avoid unnecessarily simplifying approaches to service, or service levels in downstream markets, it should allow the market to develop to meet customer demand efficiently.

In competitive wholesale markets, CP customers are fully able to understand and negotiate around service standards in their contracts and supply arrangements. These service standards fundamentally rely on upstream performance at the Openreach level.

At the Openreach level, we support Ofcom's recent adoption of more balanced charge controls on Openreach which take account of the costs associated with service quality in the provision of Wholesale Local Access products (MPF and WLR). Going forward, Ofcom should not to impose more or higher regulated service levels on Openreach without recognising the costs involved with delivering those higher service standards.

In Ethernet markets, BT supports the principle of a more balanced service-orientated regulatory regime at the Openreach level, but we believe that Ofcom has not provided for the costs of service improvement adequately in its charge control proposals. Additionally its ill-considered dark fibre proposals will cause unnecessary upheaval to the service processes for provision and repair. This will be damaging to customer experience and is something which Ofcom has not fully considered.

Role of regulation

Ofcom will be aware that its regulations have a direct bearing on service outcomes in the industry. Ofcom should look to its own responsibilities for the regulatory failures that have inhibited service improvement. We provide three examples below.

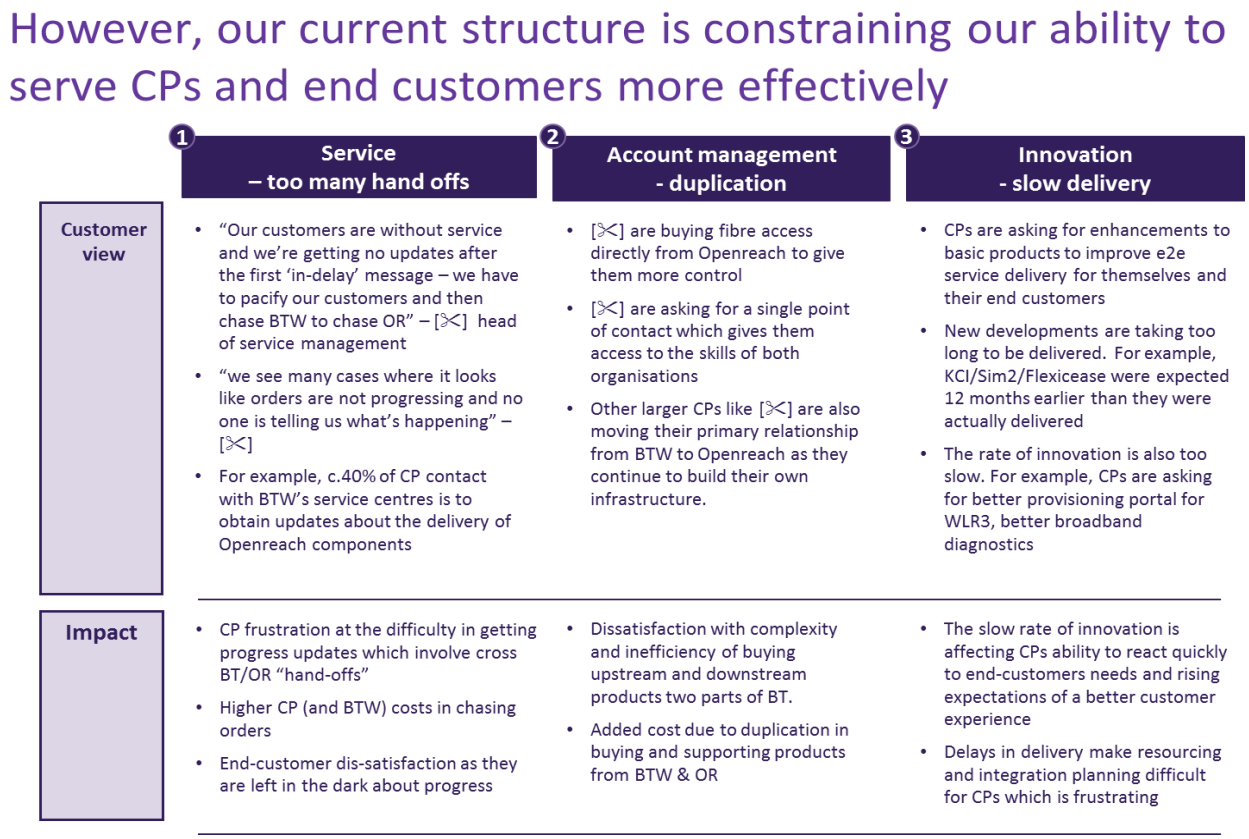
- In ten years of regulating Openreach, Ofcom prioritised cost reduction in every charge control, and every product, taking over £1 billion of revenue out of Openreach in the period, and to date only in one control (the 2014 FAMR) has its drive for lower cost been balanced by a goal of service quality. The imperatives of making cost efficiencies as required under the price controls clearly can conflict with extra expenditure on service, and Ofcom's regulatory policy has therefore had a substantial bearing on service performance.
- It is also relevant that Ofcom mandated BT to physically separate a large number of key systems, which has involved a huge programme of work over many years costing in the region of £1 billion. This £1 billion spent on physical systems separation is £1 billion not available to be spent on service quality. The regulatory regime has therefore put huge challenges on BT in expecting ever lower prices alongside a massive set of costly system changes required to implement the Undertakings.
- The Undertakings impose a three-layer model in the industry, by which BT has to operate three separate layers – retail (BT Consumer, BT Business and BT Global Services) who operate via BT Wholesale which in turn buys from Openreach. This three layer model causes service failures by requiring multiple systems and process hand-offs, as a result of Ofcom's regulations and Undertakings. BT's proposals to streamline this approach and reduce the industry model to two layers were rejected by Ofcom.

Ofcom should recognise the part that it has played in determining service outcomes, and should recognise that it has all the powers it needs, under the SMP framework, to take account of the need for improving service standards in future.

Organising to serve customers best

Strong attachment to the Undertakings which unnecessarily restrict BT's freedom to organise itself around serving wholesale customers has detrimentally impacted efforts to improve service.

The chart below provides examples based on customer feedback of how the current structure imposed by the Undertakings is constraining our ability to serve CPs and end customers more effectively.



As Ofcom considers moves to amend or replace the current Undertakings, it is important that they take into account the impact on BT's ability to deliver good customer service and reflect changes in wholesale markets and customer demand.

NOTE - In our responses to Ofcom's questions on service quality we have delineated the response by BT's downstream line of business and Openreach in order to aid understanding and to help facilitate the consultation process.

Question 20: *Are there examples in competitive or uncompetitive sections of the market where providers are not currently delivering adequate quality of services to consumers? What might be causing such outcomes?*

Openreach

As Ofcom acknowledge, the landscape has transformed over the last ten or more years. In an internet world, with increased customer demands, Openreach is improving service which is fundamental to Britain's digital economy.

There is no evidence to suggest any under-investment or any failing of the current functional separation model. Further, in the last 18 months Openreach has invested in improving service, hiring 3,000 engineers to deliver services. We can now offer new customers an appointment within 12 days in 98.5% of cases and we are fixing faults 7 hours faster than two years ago. This has been against a backdrop of reduced prices in real terms.

A commitment to high quality customer service is at the heart of Openreach's strategy and plans. Openreach has been proactive in its sharing its service plans as part of the new Openreach Charter which summarises our aspirations, the investment we're putting into our digital future and how we're raising standards to meet the demands of consumers and businesses both today, and in the future.

For Consumer and SME customers as part of the copper and GEA portfolios Openreach will:

Raise our service standards and reliability

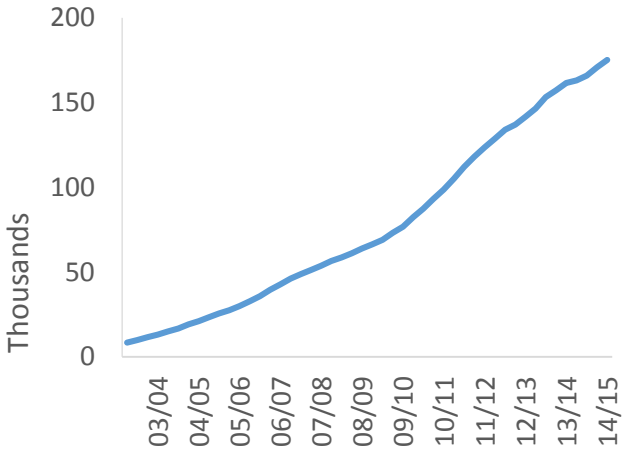
In terms of background, Openreach has achieved higher service levels despite the increase in the overall base and the proportionately higher increase in the number of MPF lines (from 3million to 6.5 million lines from April 2010 to January 2013) requiring next day repair. Openreach has met or exceeded all the minimum service levels mandated in the last Fixed Access Market Review. Further details are provided in Annex 2.

As part of Openreach commitments in the Charter:

- Openreach aim to do much better than the rising standards already set by Ofcom.
- Openreach aim to achieve on-time installations of 95% by 2017, working with our communications provider customers.
- Openreach will continue to invest in innovation and network maintenance to reduce our network fault rate.

Ethernet for Business customers:

Business demand for Ethernet grows and grows. The Openreach portfolio provides the staple product for corporates and an increasing number of SMEs. It has proved challenging to keep up with the demand. The growth in the volume for Ethernet circuits is shown in the figure below:



Ethernet services remain a key focus with plans to transform our delivery capabilities. In our Charter, for Business customers we have committed to:

- Openreach will increase the number of new Ethernet circuit connections by over 30% versus last year;
- Openreach will continue to significantly increase our speed of service delivery and improve our on-time installations; and
- Openreach are committed to introducing Ethernet minimum service levels and are actively working with Ofcom to agree future service levels that meet the needs of CPs and business customers.

Investment and focus on new sites

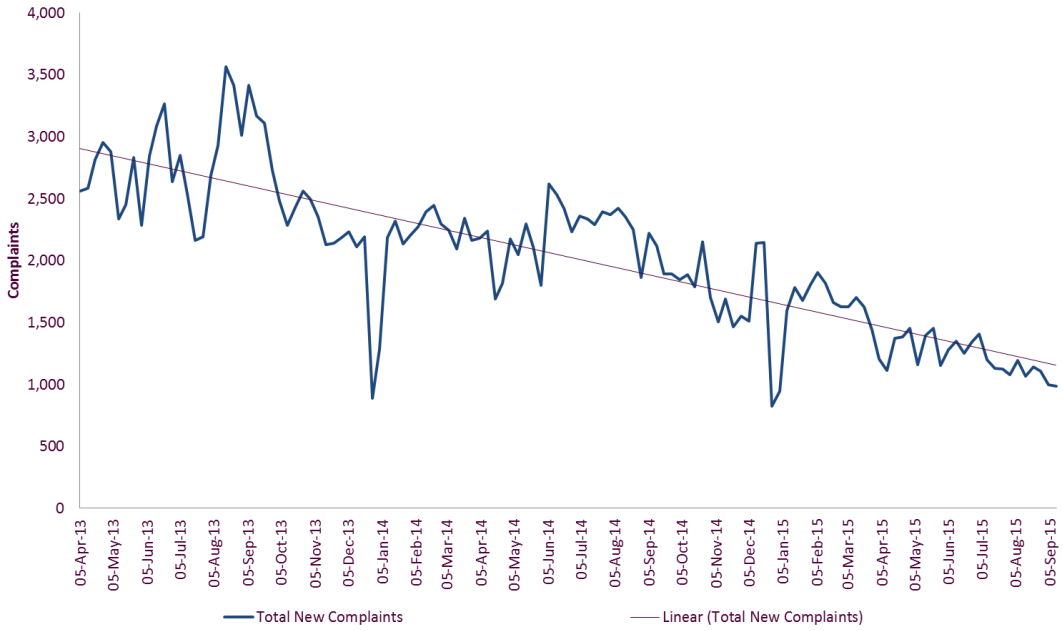
Whilst Openreach were slow to recognise the increased trend in the new build housing market, we have now committed an additional [✂] of capital investment and in 3,000 new engineers to support plans to meet the demand for enabling connectivity on Day 1 for home owners and developers.

Openreach are already making great progress towards our ambition to connect 100% UK homes on new housing developments before customers move in.

- Openreach have achieved a 60.9% net reduction of customer orders overdue by 30 days or more and we have also reduced our 10-day tail by 60.6%.
- Openreach have also increased our capacity in the field – we are now completing 3,500 customer orders every week on new sites, compared to 2,500 at the start of the year.
- Openreach are connecting the infrastructure to between 3,500 and 4,000 homes every week, which means we're increasingly able to provide more customer orders proactively, with the infrastructure in place before customers move in.

Complaints

Openreach complaints have reduced and service improvement plans are in place which should reduce them further. Complaints have reduced dramatically since 2013. The trend is shown in the Figure below:



Optimising opportunities for differentiation

Openreach provides the access and backhaul network on which CPs depend but at the same time CPs are able to differentiate on top of these regulated inputs. Key variables include the products CPs choose to purchase from Openreach, the service levels and other service offerings (standard or premium) they consume; other inputs (broadband performance will be impacted by backhaul dimensioning); and what they choose to offer in terms of customer support.

Openreach already offers a range of services enabling CPs to differentiate and offer great service to their customers, including:

- A choice of maintenance services 1-4, offering differing speed of repair;

- Co-ordinating activities around a 2 hour appointment slot which saves businesses time and money;
- A product enabling engineering access to secure sites, with Openreach providing engineers' details 48 hours in advance;
- Initiatives such as Differentiated Order Journey (DOJ) helping to ensure delivery date certainty for businesses;
- Working Line Takeover - faster, cheaper provision of service;
- A choice of different fibre speed products;
- A WLR Premium product which is tailored to meet the needs of SMEs (prioritised repair called Business 2 Plus, discounted 2 hour appointment slots, discounted named engineer, smart divert in-tariff and a dedicated call centre).

Not all CPs have chosen to take advantage of Openreach's wide portfolio – notably consumer CPs do not offer the higher value, faster repair options and thus end customers are denied access to such opportunities.

It is also important to note that Openreach has delivered the capability for third party engineers to replace and move Openreach's Network Terminating sockets (known as NTE5s). This move was triggered by an industry-led Statement of Requirements (SoR) which Openreach has enabled. This allows for differentiation such that third party engineers who, for example, are installing TV via satellite can complete in-home wiring and replace old sockets in order to maximise performance all within a single visit.

Furthermore, Openreach Charter has made commitments as follows:

- Openreach will continue to offer a menu of repair services to Communications Providers, so their customers can choose anything from a six-hour to two-day repair time;
- Openreach will introduce a combined voice and broadband repair service, managing the fault whether in our network or the customer's premises and reducing the need for duplicate visits.

Service can therefore be a key differentiator with offerings across the market reflecting customers' different willingness to pay for the services they require.

Putting customers in control through transparency of information

Openreach is keen to help consumers with clear and easy to access information and support. Activities in this area include:

- The View My Engineer solution is designed to reduce missed appointments and any need to check when engineer is due to arrive;
- The Fibre Broadband Availability Checker provides latest information on availability;
- A system upgrade to enable simple switching;
- Local Network Status Checker to enable customers to find out if there are any major cable breakdown that may affect their service;
- Transparency of performance measures via KPIs.

To improve communication of all the available services, Openreach is open to dealing directly with end customers. We appreciate this requires consultation with Ofcom and industry.

BT Consumer

BT agrees with Ofcom that overall consumers receive good value for money and that there has been strong competition on price in many retail communications services. However, and again BT agrees with Ofcom that customer expectations have not always been met. Against a backdrop where digital

communications are becoming ever more critical, the quality of service will need to continue to improve. BT discusses below the steps that we are taking, from a consumer perspective, to improve its quality of service in telecommunications markets.

Pay TV in bundles

Ofcom defines two broad categories of service: a) the performance of the network or product itself; and b) the associated customer service given by the provider to its wholesale or retail customers. As bundles that include Pay TV services become more and more prevalent, the quality of the overall product bundle in all respects will become even more important than it is today. This means that in addition to considering product performance, the content made available with a service provider's bundle will also become more important.

Through Sky's dominance of the Pay TV market, Sky restricts the access that other service providers have to content and limit the innovation and improved quality of service that can be offered to consumers (in terms of the Pay TV services offered within a bundle). The causes of this example of poor service outcomes are discussed in more detail in section 4.4 and 4.5.

Addressing quality of service in communications

Recognising the need for change, and BT's overall aspiration to be a company that puts all its customers first, BT Consumer has put in place work programmes aimed at improving quality of service. These programme will address BT Consumers Operating Model, improve the underlying support systems, and right / on-shoring customer contact agents and their skills.

The work programmes aim to improve the end-to-end customer journey, through working with suppliers, as well as looking inwards. This work has focused on improving underlying systems, including a new systems front-end called consumer.com, providing our customer service agents with the tools that they need to help customers, reducing complexity and improving the range of activities an agent can perform, empowering our agents to own the customer relationship, increasing job satisfaction, and "right / on-shoring" our customer support functions.

Already there has been real progress and significant customer service improvement in the call centres where the programme has been rolled out. For example, the number of calls resolved first time by BT's customer service agents increased to [✂] in March 2015.

Buying from BT

BT's digital transformation programme is introducing a step-change in customer service, enabling effective channel choice for every customer.

Customers are increasingly opting for online contact. Last year our customers made 1.6m fewer calls to us, so whilst some customers will always prefer to call and speak to a customer services agent, a growing proportion of our customers want to interact with us online. In addition to improving the quality of the contact centre customer engagement by phone, we are investing in improving the on-line experience. We have transformed our online sales, substantially reducing customer effort, including through the introduction of BT Consumer's 'MyBT' app and improved functionality on our on-line website.

- Investing in **proactive fault detection**, particularly in the home with smart diagnostics

Our hubs and TV STBs detect problems and try to self-heal or allow advisors to make remote repairs

Our diagnostics can better detect where faults are located and so help Openreach better target engineer visits

Fault calls have better outcomes by using advanced diagnostic tools

- Incentivising **customers with slow speed to take fibre**

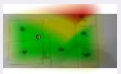
We identify customers with slow speed problems who could benefit from moving to Fibre rather than a Copper Broadband repair visit

- Testing **contingency solutions** e.g. mobile wifi

We are trialling Mobile wifi where provision and repair is delayed

- Proposing an **enhanced repair engineering portfolio**, to address customers' growing expectations around in home support, and working with Openreach to assess feasibility

We want to be able to offer early morning, evening, and weekend engineer visits with two hour appointment slots



We want engineers to be able to map wifi performance in the home and advise on how to improve (e.g. through extenders)

We want engineers to demonstrate that products and services are working and help customers to use them

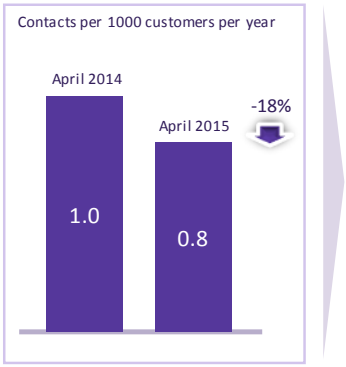
Faults

BT Consumer is investing in proactive fault detection, particularly in the home, with smart diagnostics. Our aim is to detect and fix potential and actual faults before our customers notice an impact on their service. For example, our broadband modems and routers and our TV set-top boxes detect problems and try to self-heal or allow our agents to make remote repairs. Our diagnostic tools can better detect where faults are located and so help Openreach better target engineer visits. Furthermore, a customer does need to contact us about a fault, our advanced diagnostic tools, are producing better quality of service outcomes.

Future improvements

To further differentiate BT Consumer's customer service, we are also exploring enhanced repair to address customers' growing expectations for in-home support. BT Consumer is keen to offer its customers early morning, evening and weekend engineering visits with two hour or less appointment start slots, for engineers to be able to map in-home Wi-Fi performance and advise our customers on how to improve coverage (e.g. through using extenders). Also, we want engineers to demonstrate BT Consumer's products and services, so that customers know how to get the best from their service, see summary chart below.

Customers are **increasingly opting for online contact** – last year they made 1.6m fewer service calls to us



In 2011/12 we transformed online sales, reducing customer effort substantially. Now we are driving the same **transformation in service** by delivering:

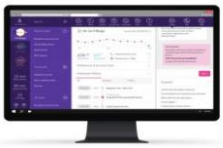
MyBT service app

Ability to:
- View products
- Track orders
- View bill
- Check service status
- Test speed
- Restart hub remotely
- Seek help

Online

Ability to:
- Place track and amend orders
- Manage billing and accounts
- Diagnose, report, track and fix faults
- Interact with the 'customer timeline'

Advisor desktop



Leaving aside quality of service associated with Pay TV services, there is a strong driver for service providers to differentiate on quality of service, both in terms of the quality of the products and services they provide to customers in terms of performance and content, and in the customer services provided to the customer.

BT Business

Communications technology is critical for businesses. They may be more cautious than consumers when introducing new technology, as the consequences are potentially greater for them. Businesses face numerous risks, with communications being one of them that can expose them to loss of revenue, data or reputation. In addition, they are likely to take a longer-term view of their investment, sometimes buying with growth in mind. It is important for Communications Providers to reassure SMEs of end-to-end installation and reliability of services.

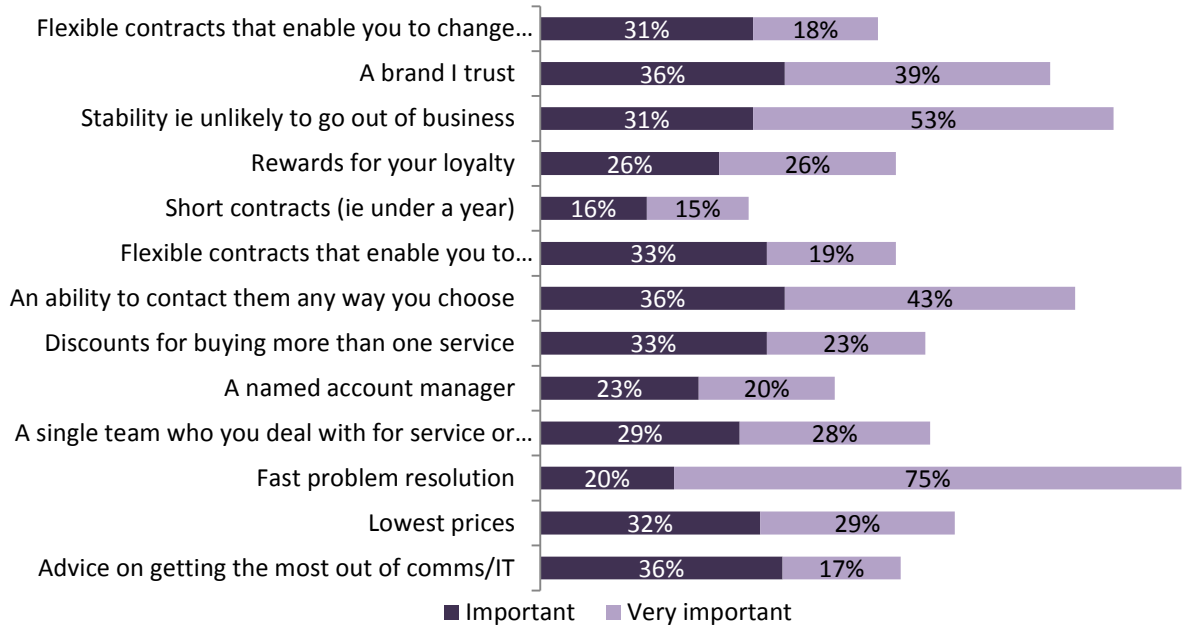
SME's needs differ from those of residential customers, although there is of course overlap, particularly at the micro-business end of the market. Businesses are more likely than consumers to use a combination of landlines, fixed Internet access and mobile broadband. This is illustrated in the table below.

	Residential Customers	Micro Businesses
How decisions are made	• Quicker to make decisions • Easier to change providers and experiment with new services (less risk)	• Decision making more protracted • More risk involved in changing providers and using new services (therefore need to consider consequences)
What is important when buying	• Easy-to-understand packages with clarity in pricing • Value of bundle - products included, benefit of cost savings	• Easy-to-understand packages, clarity in pricing • Value in bundle - products included, benefits of cost saving • Level of support from supplier - opening times of call centre (includes evening and weekends) • Reliability of services
Where purchases are made	• Shops, online and call centres • Recommendation important - direct or via social media	• Shops, online, call centres • Recommendation important, impartial advice valued
Important factors in selection suppliers	• Easy to contact and quick to respond to issues • Ability to interact through channels of choice, with options for online self-help	• Easy to contact and quick to respond to issues • Ability to interact through channels of choice, with options for online self-help

Our research has shown that SMEs prioritise fast problem resolution when selecting IT and communications suppliers, as well as looking at the stability of the supplier, the brand and the availability of multiple contact channels.[93] SMEs ranked these attributes higher than price. Factors specific to specific services are not covered here, but can be deciding factors in choosing suppliers, as shown later in this document in the discussion of broadband switching.

[93] Being in Business, 2013, BT Business Panel. Base is all businesses. N=302

How important is it that your communications suppliers provide...



For medium sized businesses, quality/service score equally, if not more importantly than price. Larger businesses expect bespoke account and often service management, with purchasing decisions often based on the quality of the service delivered over the course of existing contracts. Key needs for SMEs include reliable connections, access to new technology, excellent service and good value speed.

A key principle of the BT Business portfolio is being able to offer a variety of products at different price points without compromising on quality of service. The retail market is incredibly competitive for SMEs and market forces demand that retail providers such as BT Business deliver of quality, value and choice in order to compete.

Quality of service for SMEs

BT is investing in changing the culture of how we deal with customers with the aim of further improving customer service. This is one of the top strategic priorities of the BT Board. This increased focus on customer service is driven by the changing demands of the market and is continuously evolving.

Ofcom's own research has found that 85% of SMEs felt their business needs were well catered for by the communications market. BT Business's latest research across a representative sample of the UK business market (BT Usage and Attitude study, September 2015, N=1,490) shows that levels of satisfaction with broadband and fixed line providers are high across the market:

- 83% were satisfied with their landline provider (across all providers);
- 82% were satisfied with their broadband provider.

There is also no difference in satisfaction depending on whether businesses are using consumer or business services for their broadband. Among businesses with fewer than 50 employees:

- 84% of those using business broadband were satisfied with their broadband provider;
- 84% of those using consumer broadband were satisfied with their broadband provider.

This suggests that small businesses self-segment in terms of whether they use a business-grade service or a consumer service, and are broadly satisfied with their choice.

To improve on these levels of satisfaction, BT Business invests heavily in customer service to help differentiate itself from competition. It has over [✂] personnel dedicated to delivering customer service. We have invested considerable sums in developing a new customer service system to drive material improvements in customer management processes thus enhancing the customer's service experience. We invest more than [✂] each year on improving business service processes and systems. Underpinned by these investments and with the increasing take-up of fibre, which provides a more stable network with a lower propensity to faults, our average weekly customer fault report volumes have fallen in recent years.

Year	Broadband reports	PSTN reports
13/14	[✂]	[✂]
14/15	[✂]	[✂]
15/16	[✂]	[✂]

BT Business and other business focused CPs have a range of products with different quality of service options to meet the needs of SMEs that allow them to differentiate their offerings in the market driving a high level of competition. This benefits customers and drives service enhancements that are matched to customer needs whether market-wide or niche. There are many examples of providers focused on niche requirements supplying complete solutions.

BT Business currently offers a range of Care levels across Voice, Broadband and ISDN, and is planning to launch further enhanced service levels, particularly for business broadband with faster repair and greater resilience options, as well as pre-emptive health check options.

Business customers demand complete solutions from their suppliers and do not tolerate piecemeal approaches that mean service is not delivered to completion. BT Business believe there are opportunities for Ofcom to work with industry to ensure the supply chain is better integrated to ensure seamless provision or servicing of customer solution requirements. In particular in the transfer of customers or their numbers and in agreeing how Openreach can best interact with end customers on appointments.

In response to customer feedback, BT Business together with other business CPs championed the development by Openreach of 'Business 2 Plus', a new service level that aims to meet the needs of UK businesses for improved certainty of repair performance.

Openreach has made substantial resource and system investments to support Business 2 Plus. Business 2 Plus launched on 22 November 2014 and was immediately adopted by BT Business to improve certainty of repair performance and to help differentiate itself competitively in the market. BT will continue to explore investment in revised and new service options that will enhance its competitive differentiation and better meet customer needs. Other CPs may not decide to offer such higher care levels, but this should not be considered as a failure of the market, rather CP choice on its brand positioning.

BT Business continues to evolve its service strategy and aims to move towards an always connected approach where alternative transmission paths are instantly available should the primary connection fail. Our service aims are to deliver the best always connected network available on any device, with increasingly more reliable and self-restoring or fail-over technologies; broadening and deepening our customer relationships to help them better use technology and for our service people to be considered amongst the best – professional, skilled, empowered, empathetic.

BT Business believes the market is not failing to deliver adequate quality of service to consumers. Service is generally recognised as satisfactory with no systematic failures. BT Business continues to invest in systems and resources to ensure any individual issues are minimised. Any gaps in meeting

evolving customer service demands tend to be transient while competition also develops appropriate responses to fill them.

***Question 21:** What further options, if any, should Ofcom consider to secure better quality of service in the digital communications sectors?*

Openreach

A key regulatory focus over the last ten years has been on price: moving to focus on delivering customer priorities and avoiding a race to the bottom is a positive step. In this respect, we appreciate that service costs were addressed by Ofcom in the 2014 Fixed Access Market Review and Ofcom propose to build on this success by essentially replicating the approach in the Business Connectivity Market Review. We agree with this direction of travel, although important service target details remain to be agreed. It is important that Ofcom properly takes into account the costs of delivering higher service, otherwise it would simply be setting Openreach up to fail by imposing service standards that it cannot meet. Ofcom also needs to reflect the role that varying CP performance can have on Openreach's ability to deliver good service.

Ofcom has all the powers it needs to promote improving service standards in its SMP regulation. Ofcom needs to use these powers to good effect, in charge controls and in the ways it mandates industry processes (e.g. processes for Ethernet provision). One area Ofcom could usefully explore is a new incentive mechanism that rewards out-performance in service as well as penalties for under performance.

In addition, the new Openreach Charter, as discussed above, will make a material difference to the quality of service that customers will experience.

We are continuing to review other models around the world, with external support, both in telecoms and other utilities, but have concluded to date that there is no obvious alternative regulatory model to follow. For example, a traditional utility model does not work in a competitive multi-product environment and leads to micro-management. The extent of transparency, public KPIs and the breadth and depth of SLAs/ and SLGs in the UK telecoms market are already good by international standards.

In summary we consider that Ofcom should seek to secure better quality of service through its established regulatory tools, treating service as a third pillar alongside price and competition in market and charge control reviews. We therefore envisage going forward regulation which would provide:

- a reasonable charge control settlement with an uplift for improved basic service levels;
- opportunity for Openreach to offer differentiated premium service levels in response to customer demand;
- with appropriate regulated service targets as a backstop.

BT Wholesale

Ofcom should reconsider BT's proposals to eliminate the extra layer in the industry processes from the point of view of improving customer experience.

BT Consumer

Ofcom's discussion paper appears to focus on service quality in respect of BT (and Openreach). However, analysis suggests that service is both a complex issue and a shared responsibility (where there are multiple layers of supply).

To the extent that there is a shared responsibility on service BT considers there is potentially scope for improvements in end-to-end working between CPs. This may involve systems interaction and other measures that help facilitate more efficient levels of service, e.g. on missed appointments. In terms of the downstream market(s), while Ofcom should always rely on the competitive process to drive CP's service levels and behaviour, there may be some scope for greater information

transparency, e.g. in respect of broadband services, and possibly industry-led discussion and consultation on standards and best practice.

Ofcom gives as an example the water industry and OFWAT's Service Incentive Mechanism, As Ofcom points out, the communications and water sectors are very different. In the water sector, there is no real consumer product differentiation and competition is limited. In communications there is significant product and service provider choice, ample differentiation, and very real competition.

From a retail perspective, regulation should be limited to those areas of service quality where what is provided to the consumer falls below what should be expected, given the price paid by the consumer, and in this respect consumers' enjoy significant levels of consumer protection.

BT Business

In the SME market Ofcom should consider how best to encourage competitive differentiation to ensure the diverse needs of the market are best met. Ofcom can further encourage this competitive environment by publishing objective service performance data that creates a balanced scorecard of data that helps customers better understand the differences between CP products and prices. This would include product options, technical parameters and characteristics, service performance data, complaints, resolution timescales. Ofcom should consider how it can encourage downstream CPs to innovate and invest in service rather than impose standards that become the norm.

Ofcom should consider how best to work with industry to ensure key product and service information is factual and accurate. This should not be through precisely defining every parameter but through driving industry standards in the way the ASA does for advertising. A good example of this is where BT Business is supporting the development of Ofcom's proposed Broadband Speed Code of Practice. With the convergence of digital communications in the business market it would be overly restrictive and disproportionate for Ofcom to mandate how CPs must define key product parameters.

Ofcom should consider how it can help industry ensure it can transfer and migrate customers when they choose to move suppliers. This is not just a BT and Openreach issue but an industry-wide one that requires common system standards and processes to properly support competitive consumer choice.

SMEs communications needs differ from those of Consumer customers, although there is of course overlap, particularly at the micro-business end of the market.

4.10 Targeted regulation and opportunities for deregulation

This section of our response addresses Questions 15 in section 11 of the discussion document and Questions 22 to 25 in section14.

Ofcom's overarching issue

"Are there opportunities deregulation or simplification that will bring broader benefits whilst avoiding new risks to consumer harm?"

Summary of BT's response

- We agree with Ofcom that i) too much existing regulation has built up over time, ii) it is easier to add to it than to remove it, and iii) the DCR is an opportunity to challenge the need for existing regulation.
- Ofcom should adopt principles for deregulation. Regulation should be removed when it:
    - Duplicates other regulation (e.g. EOI in the Undertakings);
    - Deters investment (e.g. dark fibre remedy in business connectivity);
    - Has become unnecessary, as a result of technological, market change or for some other reason (e.g. fixed call origination);
    - No longer reflects the reality of competition (e.g. Ethernet in city business districts);
    - Risks prolonging the life of legacy services and hindering migration to more efficient modern alternatives (e.g. PPCs, ISDN);
    - Imposes burdens that outweigh the benefits it delivers – i.e. it is disproportionate (e.g. various universal service obligations, including public call boxes);
    - Is inconsistent with regulation of others, until such time as a consistent approach is implemented (e.g. the prohibition on save calls for BT but not for Sky;
    - Is otherwise incompatible with Ofcom's Section 3 duties for all its activities to be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed.
- In our answers to Ofcom's questions, we highlight regulation that should be removed in line with these principles.
- We also identify instances where other regulatory change is needed, for example to ensure all customers are properly protected, through updating of the General Conditions regime.
- Going forward, Ofcom needs to adopt an approach that ensures prompt removal of outdated regulation, not only through regular market reviews but also through reviews of other aspects of regulation such as the USO and General Conditions. In some cases, this will require change at EU level: the Commission's current review of the Common Regulatory Framework (CRF) presents the opportunity to secure such change, and Ofcom and the UK Government need to play an active role in this review;
- To support the better targeting of regulation and removal of outdated regulation, Ofcom should set out how and in what circumstances regulation should change to reflect forecast industry changes over the next decade, what the triggers for each change would be, and its current view of the indicative timescales for change;
- In addition to considering where regulation can be better targeted or removed, Ofcom should also use this review to consider whether existing regulation, such as the regulatory disputes process, can be applied in a better, more consistent way.

BT's answers to Ofcom's questions

"Are there opportunities for deregulation or simplification that will bring broader benefits whilst avoiding new risks to consumer harm?"

Question 15: *Are there specific areas of the current Undertakings and functional separation that require amending in light of market developments since 2005?*

Yes. The Undertakings need to be simplified and modernised to be a more proportionate and more targeted intervention. Ofcom cannot regulate BT other than by means of the CRF.

The model of functional separation and Equivalence of Inputs (EOI) embodied in the Undertakings has played a major role in driving the success of the UK communications industry over the last decade. The Undertakings have been adaptable to change on specific issues, with over sixty exemptions and variations having been agreed. However, broad issues arising from market, technology and regulatory change have not been addressed, and many aspects of the Undertakings are now out of date. The key changes that BT believes are required are set out below.

Removal of EOI requirements from the Undertakings

Since the Undertakings came into force, the Directives of the CRF have developed considerably. In particular, EOI has been identified as a possible SMP remedy and indeed Ofcom has imposed EOI obligations on BT under the CRF in many markets where it has found BT to have Significant Market Power (SMP), even though EOI already applies in these markets as an Undertakings obligation. These parallel obligations currently apply to key products including LLU, GEA, WLR, Ethernet leased lines and Optical leased lines outside London. This regulatory duplication serves no purpose and should be removed.

Requiring EOI under the Undertakings is no longer appropriate. If BT is not released from Undertakings EOI it will continue to leave open the potential for anomalous situations of the type that have arisen in the past where BT is found not to have SMP in a market review but continues to have an EOI commitment under the Undertakings, which then needs to be removed through an Undertakings exemption or variation. Examples of this scenario are:

- Wholesale Broadband Access Market Review 2008. Ofcom found that BT no longer had SMP in geographic markets covering 69% of the UK: EOI was removed via an Undertakings variation;
- Business Connectivity Market Review 2013. Ofcom found that BT did not have SMP in very high bandwidth Ethernet and Optical leased lines in the West, East and Central London Area: EOI was removed via an Undertakings exemption.

We believe the right way forward is to release BT from all its EOI obligations under the Undertakings and for Ofcom to apply EOI as an SMP obligation only. It should apply EOI only where analysis in a market review shows that Ofcom needs a remedy to address SMP, and that an EOI remedy, above and beyond the standard non-discrimination obligation, is required. Indeed, we consider that Ofcom is obliged to use the CRF to regulate CPs and not any other law or regulation, and is duty bound, by section 162 Enterprise Act 2002, to consider whether, by reason of the change of circumstances (i.e. the imposition of EOI as an SMP remedy), BT can be released from its Undertakings EOI commitments.

This would have the benefit of aligning the imposition of EOI with the latest market evidence and avoid anomalous situations in which BT has been found not to have market power in a market, but is nevertheless subject to a severe form of non-discrimination obligation: this is incompatible with the intention and requirements of the European CRF.

Removal of organisational requirements outside Openreach

The essence of the Undertakings is the functional separation of Openreach from the rest of BT. However, the Undertakings also impose some requirements for organisational separation outside Openreach:

- Section 6 requires BT to maintain an organisational separation between the "Upstream Division(s)", in effect BT Wholesale, and the "Downstream Divisions", i.e. BT Business, BT Consumer and BT Global Services;
- Section 8.1 requires separate product management organisations for BT Wholesale SMP products and other "products of Significance to other Communications Providers", in effect now just Wholesale Calls.

The first of these could potentially stop BT downstream of Openreach from reorganising itself to maximise service quality and efficiency, and the second is no longer proportionate. BT Wholesale is a now smaller part of BT than it was after it was constituted in its current form in 2006 (external revenue in 20014/15 was £2157m, down from £7584m in 2006/7), its SMP products are in steep decline, and the only part of its activities subject to EOI is Wholesale Broadband Access in just 10% of the UK. Indeed, BT's view is that the offering of commitments in relation to BT Wholesale was a pragmatic solution for the time, having regard to the importance of certain BT Wholesale products at that time. Ten years on, those products do not have the same importance and there is therefore no reason why BT could not be released from those BT Wholesale commitments.

In view of these facts, BT should be released from Sections 6 and 8.1 of the Undertakings.

Addition of enterprise virtualisation as an alternative to physical systems separation

Section 5.44.2(a) of the Undertakings requires Openreach Operational Support Systems (OSS) to be run physically separate from the rest of BT, when reasonably practicable and proportionate, unless otherwise agreed between BT and Ofcom. In the period since this wording was agreed information technology has progressed significantly, and there has been widespread deployment of enterprise virtualisation.

Enterprise Virtualisation is a type of private cloud computing typically used within organisations, using common hardware platforms but separated operating environments that are securely virtualised instead of being physically separated environments. This approach ensures that the computing requirements of individual divisions benefit from technical scalability and better operational economies, while at the same time retaining robust separation between these virtualised operating environments. Applications run in one virtualised environment are run independently of applications run in other virtualised environments running on the same hardware platform.

If enterprise virtualisation had been available on 2005, we are confident that this would have been the accepted approach to systems separation in the Undertakings. While physical separation may have a role, for example for legacy applications that cannot readily be run in virtualised environments, we believe that the use of enterprise virtualisation to separate Openreach systems from those used by the rest of BT would not be considered controversial.

In view of this, we believe the Undertakings should be amended to give BT the choice of using enterprise virtualisation or physical systems separation wherever physical separation is currently required.

Over the years, there has been much debate between Ofcom and BT about systems separation. In BT's view the obligation to have physically separate systems, particularly in the light of enterprise virtualisation developments, does not provide any downstream benefit for competition, and as such is not consistent with Ofcom's duties for targeted and proportionate regulation.

Deletion of redundant and obsolete provisions

Many parts of the Undertakings, including some whole sections, are redundant or obsolete as a result of changes in the industry or because they specify milestone dates which are now in the past or because the provisions have never been used. BT should be released from all these commitments and they should be deleted.

A list of other Undertakings commitments that BT believes should be deleted is set out in Annex 4 to this response.

Question 22: *Might there be future opportunities to narrow the focus of ex ante economic regulation whilst still protecting consumers against poorer outcomes?*

Ofcom refers to four potential drivers for deregulation:

- Where end-to-end competition can be maintained or promoted;
- Where convergence results in the ability to deliver the same service via different mechanisms;
- Where access-based competition can be accurately focused on a specific bottleneck so that regulation of downstream services can be removed;
- Where specific geographic markets can be identified where competition is effective.

These are all circumstances in which proper market analysis in a market review should lead to deregulation. However, Ofcom's record is mixed. In particular:

- End-to-end competition exists in business connectivity markets in most UK city districts. In the current and last Business Connectivity Market Reviews, we have provided extensive evidence to Ofcom on the extent of competing networks in these areas. However, Ofcom has only ever defined a separate geographic market in the London area for a subset of business connectivity product markets. Ofcom needs to ensure that BT's ability to compete in business connectivity in the UK's highly competitive city business districts is not unreasonably constrained;
- The ability to deliver the same service via different mechanisms exists in many areas. For example, fixed, mobile and OTT versions of voice origination all provide the same functionality to consumers, and Ofcom has indicated that in view of this it will consider deregulating fixed voice origination in the next Wholesale Narrowband Market Review. Elsewhere, however, Ofcom has been resistant to deregulation, especially where legacy services are now substitutable by modern alternatives: examples are traditional interface leased lines and ISDN. Ofcom should deregulate such legacy services to incentivise migration to the modern equivalents;
- We believe strongly that regulation in any market should be focused on specific market failures (typically enduring bottlenecks) that will not be overcome by normal competitive forces, with a single effective wholesale intervention to support downstream competition, with deregulation downstream. However, Ofcom is going in the opposite direction in the Business Connectivity Market Review, where it proposes to impose a dark fibre remedy whilst leaving the existing active leased lines remedies in place. We have described the harmful consequences of this proposal in our response to Ofcom's Business Connectivity Market Review consultation.
- The effective competition in wholesale local access that exists in the Virgin Media footprint has never been reflected in the Ofcom's decisions. Virgin Media are estimated to have a market share of c.44% in their footprint, and this is consistent with their aim of achieving 40% take-up after three years in the areas covered by their network expansion programme. BT should not be regulated as if its access is a monopoly, i.e. an enduring access bottleneck, in the Virgin Media footprint, where it is not. The Wholesale Local Access market review should take full account of the impact of Virgin Media's network and its ongoing expansion.

Question 23: *Where might future network evolutions, including network retirement, offer opportunities for deregulation whilst still supporting good consumer outcomes?*

Our answer to Question 22 has highlighted a number of opportunities to deregulate that have already arisen as a result of network evolution, i.e. traditional interface leased lines, fixed voice origination and ISDN. The main deregulatory opportunities presented by further network evolution will arise from PSTN switch-off and the closure of traditional voice services.

BT's vision is that all our UK customers' fixed voice calls will be made over IP by 2025, that is to say all customers will have a broadband line and all their fixed voice communications will be carried over that broadband line. We expect other CPs will also want to move their customers from narrowband voice to IP-based voice over broadband.

Voice over broadband will in a sense be just another application over broadband, and as such be an Over The Top (OTT) service. Customers may prefer a QoS-enabled service that routes across CPs' networks or perhaps a less quality-assured PATS service that routes calls at least partly over the Internet (though these would still have to interconnect at some point in order to terminate on telephone numbers).

We believe that voice over broadband will enable significant deregulation, since customers with broadband will be able to choose from a range of IP-based voice service providers:

- No provider will have SMP in call fixed origination – we believe this is already the case in view of mass use of mobile and growing use of OTT voice;
- We also believe that economic regulation of voice termination will be unnecessary give the low costs of both call origination and termination over IP, which will encourage Bill and Keep arrangement: it may be appropriate instead to impose a general condition relating to cover voice termination on all relevant providers;
- Ofcom will need to withdraw obligations to provide current regulated products which will become obsolete as a result of eventual migration to an 'everything over broadband' environment, namely WLR and SMPF.

Other actions that Ofcom will need to take in response to the rise of OTT services in general are set out in our answer to Question 24.

Ofcom and BT aspire to increase coverage of broadband networks. Deregulation of broadband in market A would help. In particular, BT is looking to Ofcom to make the case for universal provision of broadband a viable commercial business case. That will involve allowing BT to charge customers extra for connectivity to more expensive networks. Such a deregulation would support good customer outcomes.

Question 24: *What are the potential competition and consumer protection implications of the rise of OTT services? Might the adoption of such services enable future deregulation without raising the risk of consumer harm?*

Introduction

BT explained in its answer to Question 4 that the industry is going through a period of fundamental change as traditional networks with network embedded functionality are replaced by IP networks and applications. Thus by 2025 almost all applications will be OTT – whether they are provided by the network operator or a third party and whether or not they are able to use any QoS capabilities a network may offer. Recent EU open internet regulation enshrines in law the principle that the internet must be open, and in an open internet all internet traffic is delivered equally. QoS is allowed but it must not undermine the open internet.

BT's perspective can be summed up thus: **By 2025 almost all communications services will be delivered by applications running over IP networks and customers will chose freely between network-provided applications and third party applications.**

In this context the rise of OTT services simply means future IP communication applications and Ofcom is right to start thinking about the implications of the new model. BT believes regulation of OTT services should be based on the following principles:

- Customers should be able to purchase an open internet where they are free to choose applications from any provider;
- Regulation, national security and consumer protection measure should be based on the functionality of the application and the needs and interests of consumers and the nation, not on the underlying technology that delivers them, where the application is domiciled or who owns the provider;
- If regulation imposes additional costs on providers then these costs should be objectively supported by consumer benefits and should be fully recoverable by providers;
- Regulations that are based on the old 'embedded network functionality' model should be revised (see our answer to Question 4 which includes issues with the General Conditions);
- During the transition phase Ofcom should bring together the current disparate regulatory approaches used for network and OTT services into a single framework.

Bringing Together OTT and Traditional Service Regulation

There are a vast number of OTT services and most of them do not need to be regulated by Ofcom. However some OTT services probably will need to be regulated going forward:

- Voice will require some ongoing regulation to ensure number management, porting, baseline quality levels, access to emergency services and interconnect;
- Broadcast and content services – such as BBC iPlayer – will need to be regulated as part of Ofcom's wider remit for the broadcasting and content sector.

Competition

Generally, the move to an IP / applications market model means that there will be much greater competition in the applications market than has historically been the case. OTT players already compete vigorously in the consumer and business fixed voice market and act as an effective control on prices.

However, where new entrants are deploying OTT delivery of Pay TV services, it is important to understand that these new entrants face the same difficulties in accessing premium content that have been a feature of the problems in Pay TV over the last 20 years, and that OTT does not resolve the competition problems in the Pay TV market.

Consumer Protection

Various consumer protection mechanisms are enshrined in the regulation of traditional services, for example the requirement for fixed voice networks to deliver line power. These regulations pre-date near-universal mobile phone ownership and widespread use of wireless DECT telephones. They are excessively prescriptive in terms of specifying a solution and increase costs for those rolling out new networks, ultimately to the detriment of customers.

BT believes that Ofcom needs to revisit consumer protection regulation and re-evaluate its effectiveness in the IP / application world. It may be much more effective to provide good levels of network resilience for the relatively small number of customers who need it than to provide a poor solution to everyone.

Another area of consumer protection which requires a new solution is the provision of location information to the emergency services. The old model is based on the premise that 999 calls are

made from landlines and that the telephone number uniquely identifies the premises. In a world where numbers are associated with devices, rather than lines, and over 80% of 999 calls come from mobiles, most which include GPS devices, it may be that a different approach would be preferable.

UK Critical Infrastructure

Historically the PSTN has been regarded as part of the UK critical infrastructure and the General Conditions have placed obligations on BT and Kingston Communications in particular to provide a universal voice telephone service and to ensure the proper and effective functioning of the network.

In the new IP / application world it is less clear what exactly comprises the UK critical infrastructure – yet the infrastructure is more critical than ever. It is certainly the IP core and access networks and probably also includes CPs (at least those with their own broadband infrastructure), some application providers (for example those offering voice services), providers of domain name servers and possibly major data centre and payment system providers. Ofcom need to consider the obligations that accrue to alternative access providers who may have a local monopoly in some areas – for example where they have won a contract to serve a new housing estate.

Summary

Within the period being contemplated by the DCR, almost all communications services will be OTT – that is they will be network agnostic. This has already – and will continue – to drive competition and innovation into the market and should be considered by Ofcom during market reviews.

The rise of OTT services creates some new issues for Ofcom which need careful consideration:

- There must be a level playing field between services offering equivalent functionality;
- OTT services already provide significant competition (cost, functionality and service) to traditional communication services and this may well allow regulation to be reduced in some areas. This should be a normal element of any market review;
- Old regulations (including some of the General Conditions) that pre-supposed network-based applications need to be reviewed to ensure they remain practicable, relevant, useful and proportionate in an era where applications are delivered over IP and almost everyone is served by multiple IP networks (fixed and mobile);
- Ofcom and HMG should consider what the critical national communications infrastructure is in an IP / applications world and ensure appropriate responsibilities are places on all the organisations that comprise it;
- Consumer protection measures need to be effective and apply to functionally equivalent services, however delivered. It may be better in some cases to ensure high quality consumer protection for those that need it than to provide a low level of protection to all; and
- OTT services cannot easily be constrained to any jurisdiction. Ofcom needs to ensure that public safety and public protection mechanisms cannot be trivially avoided simply by basing an OTT service abroad. Similarly Ofcom must ensure that bona-fide UK providers are not put at a material disadvantage through legal compliance.

Question 25: *Are there any areas where you think that regulation could be better targeted or removed in future? What would be the benefit of deregulation as well as the main risks to consumers and how these could be mitigated? Please provide evidence to support your proposals.*

We agree that Ofcom should review the General Conditions to ensure they remain relevant and give customers the protection they need. We have already discussed the need to ensure that the General Conditions reflect the rise of OTT, which is already a reality, and the withdrawal of the PSTN and traditional voice services in the future. Other issues also need to be addressed in the General Conditions, for example:

- Pay TV services should be covered by the consumer protection provisions;

- Some consumer protection measures , such as GC 11 Metering and Billing, technically apply to large businesses as well as consumers and SMEs: large businesses do not need this level of protection;
- Some of the definitions overlap with each other, for example 'user', 'end-user', 'customer' and 'subscriber';
- Some of the terms used refer to concepts that will become obsolete over the coming years, such as narrowband services;
- It may be necessary to explicitly apply some General Conditions to broadband service providers given the increasing dependence on broadband as the basis for a wide range of services, including IP-based successors to PATS services.

The USO is another area where regulation should be better targeted or removed[94]:

- The obligation in Universal Service Condition 1 (USC1) to provide "Telephony Services, including the ability to make and receive calls employing voice, facsimile and data communications" will become out of date in the world. If a USO is still needed in the future, it should deal with connection to the network only;
- The USC1 requirement for the services to be sold at uniform tariffs across the UK is unnecessary given that this covers retail services supplied in a competitive market;
- The obligation in USC2 to provide schemes for consumers with special social needs should arguably become a general obligation on all providers over a certain size;
- The USC3 obligation to provide public call box services is an anachronism in a world where there are more mobile phones than people – Ofcom's report "The Communications Market 2015" report stated there were 89.9 million mobiles in the UK at the end of 2014 compared to 33.2 million fixed lines;
- The prohibition in obligation in USC5 against enforced bundling of USO services with other services is not relevant in a fiercely competitive retail market;
- The US6 obligation to provide a basic level of itemised billing at no extra charge is not needed, again because the retail market is competitive, but also because GC12 requires all CPs to provide "on request, and at no extra charge or for a reasonable fee, a basic level of itemised billing";
- USC7 on the maintenance and supply of a directory information database and directories is no longer enforceable following court cases on this issue, and it should therefore be removed.
- USC8 on publication of quality of service information should be removed: if quality of service reporting is needed at the retail level, it should be applied to all providers through the General Condition framework.

In addition to considering whether regulation can be better targeted or removed, Ofcom should also use this review to consider whether existing regulation, that cannot be removed, can be applied in a better, more consistent way, to ensure consumers are getting the maximum benefit from this regulation.

BT has conducted a review of disputes over the past few years where BT has been a party to the dispute. Following this review, BT believes there are various areas of the dispute resolution process which could be improved, either by a more consistent approach to dealing with disputes or by improved guidance around certain issues that come up repeatedly in disputes. In some cases, changes to the Communications Act 2003 itself or the CRF may be needed to instigate more

[94] We note that some of these changes would require action by the Government, including via amendment of the electronic Communications (Universal Service) Order, whilst some others would require changes to the Universal Service Directive as an outcome of the European Commission's recently-launched review of the CRF.

fundamental change. BT would welcome the opportunity to speak to Ofcom about the dispute resolution process to set out its suggestions for improving the process.

Examples of areas for discussion include:

- inconsistency in the process, for example when an EPM will be held and when it will not;
- the lack of any limitation period for accepting disputes or imposing remedies;
- the shortness of the time given to the parties to respond to often complex and detailed submissions and requests for information;
- lack of clear Ofcom policy on when remedies such as retrospective payments and interest will be awarded, having stated that these remedies may not always be appropriate, without further explanation;
- the suspension of disputes where appropriate in exceptional circumstances, for example where related litigation is ongoing; and
- the levels of evidence required to be provided by a disputing party before a dispute can be opened.

BT believes that many of these issues could usefully be incorporated or explained more fully in Ofcom's dispute resolution guidelines. In addition, given the current ongoing review of the CRF at a European level, this creates an ideal opportunity to lobby for changes to this framework, where appropriate.

Conclusion to Section 4.10

BT believes there is significant scope for deregulation and other regulatory change over the coming years. The key changes we believe will be required, and the likely timeframes, are set out in the table below. We propose that to give stakeholders a sense of direction and as much predictability as possible, Ofcom should set out how and in what circumstances regulation should change to reflect forecast industry changes over the next decade, what the triggers for each change would be, and the current indicative timescales for change.

BT's view of regulatory changes likely to be justified from 2016 to 2020

Undertakings	2016: Major reform, including removal of: EOI obligations now covered by market reviews; all organisational requirements apart from the requirement for a functionally separate Openreach; requirements for physical system separation; and obsolete provisions
USO	2016: Initiation of reform, including removal of obligations relating to payphones, national pricing and free itemised billing. Social telephony and QoS KPI reporting should be moved to General Conditions as obligations on all CPs or at least all large CPs Some changes will require changes to the CRF as an outcome of the Commission's review
General Conditions	2016: Initial changes to bring the obligations in the General Conditions up to date Further reviews as required
Business Connectivity	2016: No dark fibre obligation. Complete deregulation of all TI services (further than Ofcom proposals) nationally. Deregulation of Ethernet in all metro centres and not just London (as Ofcom proposes) 2019: Regulation at either passive (if confirmed in 2016 BCMR) or active level only
Fixed Access	2017: No GEA charge control. ISDN2/30 deregulated and SLU remedy removed. Full account taken of Virgin Media's expanded network 2020: Rolling deregulation of LLU and WLR started

Wholesale Narrowband	2016: Call origination deregulated 2019: Call termination deregulated or moved to General Conditions as obligation on all CPs
Wholesale Broadband Access	2017: WBA finally deregulated nationally.

Keeping regulation up-to-date and prompt removal of outdated regulation that had become would reduce the burden on industry, promote investment and allow markets to work without unnecessary constraints to the benefit of consumers and businesses.

Looking ahead to 2025, we believe technical and market change will present opportunities for a regulatory framework that is much simpler than todays. This framework could include the following components:

BT's view of possible regulatory framework in 2025

General Conditions	Technology-neutral, to give protection to all consumers
Connectivity Market Review	Covers wholesale connectivity to fixed and mobile networks Split into sub-markets, likely to be - mass market connectivity – includes SFBB and UFBB - high speed connectivity – for organisations needing dedicated very high speed links Much simpler remedy set due to obsolescence of MPF, SMPF, WLR, ISDN, SLU, PPCs, etc
Content Market Review	Ex ante framework for digital content

USO may not be needed if investment-friendly regulation has ensured there are competing networks everywhere in the UK

The BT Undertakings will not be needed, particularly as functional separation will be a remedy for market power in connectivity

ANNEX 1

BT's record of compliance with the Undertakings

1. Introduction and Summary

This Annex responds, in particular, to the suggestion in the Discussion Document that "a stronger incentive" [95]is needed to change BT's behaviour in terms of compliance with the rules embodied in the Undertakings. BT strongly rejects allegations that either its culture or record warrants allegations that compliance over the last ten years has been in any way inadequate, and we believe our efforts and record show a very strong performance and commitment to our obligations.

BT is fully committed to complying with all aspects of the Undertakings and has created a significant shift in organisational culture, within Openreach and the rest of BT since 2005 when the Undertakings were implemented. Compliance is overseen by BT's Board but it is the personal responsibility of all BT people, and they are supported in this by comprehensive mandatory training programmes and dedicated Openreach and BT Group compliance teams.

BT's strong compliance culture and this is reflected in the low number of breaches of the Undertakings. Since 2006, there has been an average of 13 breaches each year but this should be viewed against a backdrop of c. 100,000 BT people and millions of internal interactions and external customer contacts each year. The vast majority of breaches were one-off incidents and most were self-reported by BT people. For example, in 2014/15, there were 4 non-trivial breaches and 8 trivial breaches. Of these 12 breaches, 11 were reported by BT people.

All binding date-related milestones were delivered (note that a small number were cancelled in agreement with Ofcom and therefore not required to be delivered), with nearly 70% ahead of or by the required date. Those that were delivered late proved to be significantly more complex and challenging than envisaged at the time when the Undertakings were drafted.

2. How we comply - BT's approach to governance, training and compliance

Compliance with the Undertakings is the personal responsibility of everyone in BT. A strong compliance culture has been established and is reinforced by codes of practice, mandatory training, pro-active compliance audits and consistent senior management messages on the importance of compliance with both the spirit and letter of the Undertakings.

2.1 Governance

Compliance with the Undertakings is ultimately overseen by BT's Board. All breaches are reported to BT's Operating Committee (sub-committee of the main board) and to the Equality of Access Board (EAB).

The EAB was established as part of the Undertakings and its role is a one of monitoring, reporting and advising BT on BT's compliance with the Undertakings and the Code of Practice, with a specific focus on the provision of products on an Equivalence of Inputs (EOI) basis and the operation of Openreach.

The EAB is a committee of the BT Group plc Board, the majority of members being non-BT personnel. Recently, the membership of the EAB has been refreshed with many new members replacing existing members and a new Chair is due to start in [date].

The EAB is supported by its operational body, the Equality of Access Office (EAO). The EAO monitors BT's performance in delivering the Undertakings and investigates complaints regarding the

[95] Discussion Document paragraph 11.58

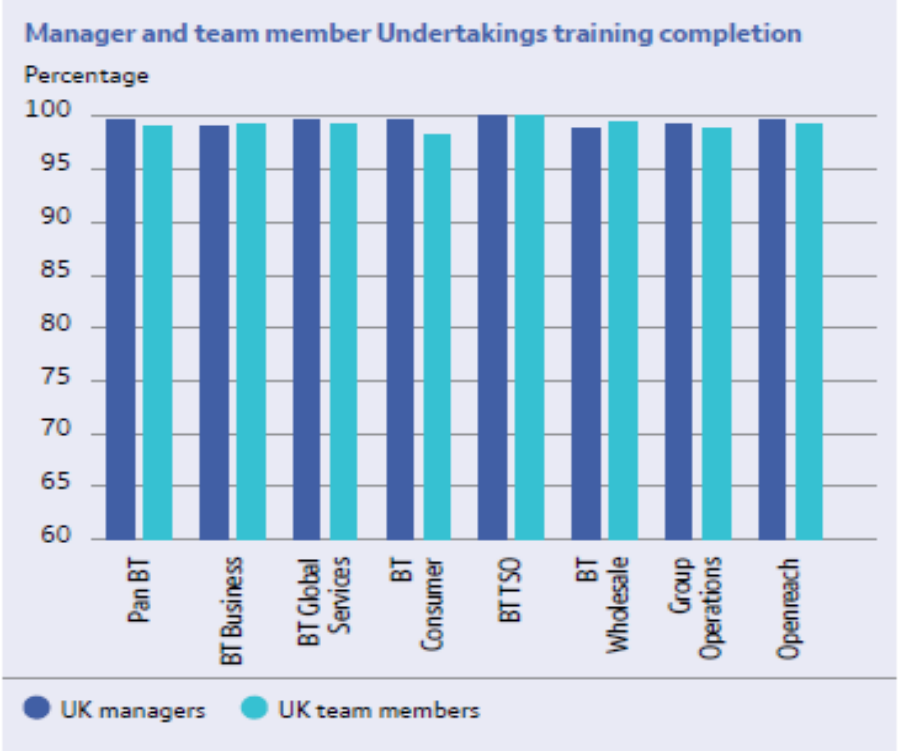
Undertakings from CPs, as well as conducting ad hoc investigations into any aspects of BT's compliance with the Undertakings it sees fit. In practice, the EAO will investigate and review BT's evidence for all potential breaches of the Undertakings and make recommendations to the EAB. The EAB will decide at its quarterly meetings whether a breach has occurred and if so, at what severity and will also report breaches to Ofcom. The EAB issues annual reports setting out its view of BT's compliance with the Undertakings. The reports provide an overview of BT's compliance along with details of breaches, issues and concerns.

Undertakings compliance is audited on a regular basis by BT's Internal Audit Division and for systems access, externally every 18 months by PWC. Since the implementation of the Undertakings, these audits have not uncovered any significant failings needing to be addressed.

2.2 Training

New BT people are required to complete the mandatory Undertakings training whilst existing employees must refresh the training on a regular basis. In addition, an ongoing education programme is used to raise and maintain awareness of compliance rules and expected behaviours. Bespoke training and communications are given to people who need to have a more detailed understanding of the Undertakings due to their roles in the organisation.

BT has a target of 100% completion of Undertakings training and completion rates are reviewed by BT's Operating Committee. The table below shows our training record as published in the 2015 EAB annual report (http://www.btplc.com/Thegroup/Ourcompany/Theboard/Boardcommittees/EqualityofAccessBoard/Publications/EAB_Annual_Report_2015.pdf). 99.4% of managers and 98.9% of team members had completed their training, with the remainder being followed up with the aim to achieve 100% completion.



2.3 Compliance, reporting and industry engagement

BT regards a strong compliance culture as essential. We regularly test our compliance culture and the understanding of the requirements of the Undertakings through surveys. In addition, ad hoc

compliance investigations are carried out to check that processes, systems and behaviours are working as expected. Should any weaknesses be found, remedial plans are put in place and people are given additional training if required.

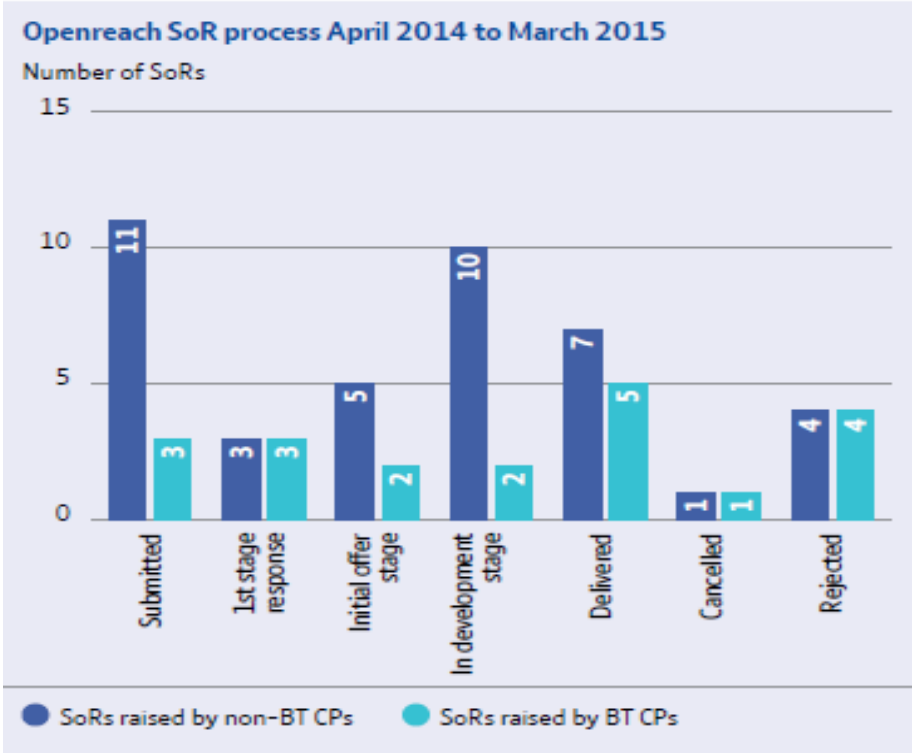
Openreach and the rest of BT have regular calls with the EAO to report a range of measures including key performance indicators (KPIs), training completions, complaints from CPs, statements of requirements (SoRs) and any potential breaches are investigated. This enables the EAO to monitor BT's compliance and behaviours and to inform on issues where it may wish to carry out its own checks and investigations.

Industry transparency is also important for the monitoring compliance behaviour and over the past 10 years, as the industry has developed, Openreach has increasingly shared information externally. Openreach publishes industry performance statistics and BT Group publish equivalence KPIs on a quarterly basis. Performance is also shared at an individual CP level and this can be used to compare against industry averages to identify improvement areas for CPs which are then fed into wider industry discussions.

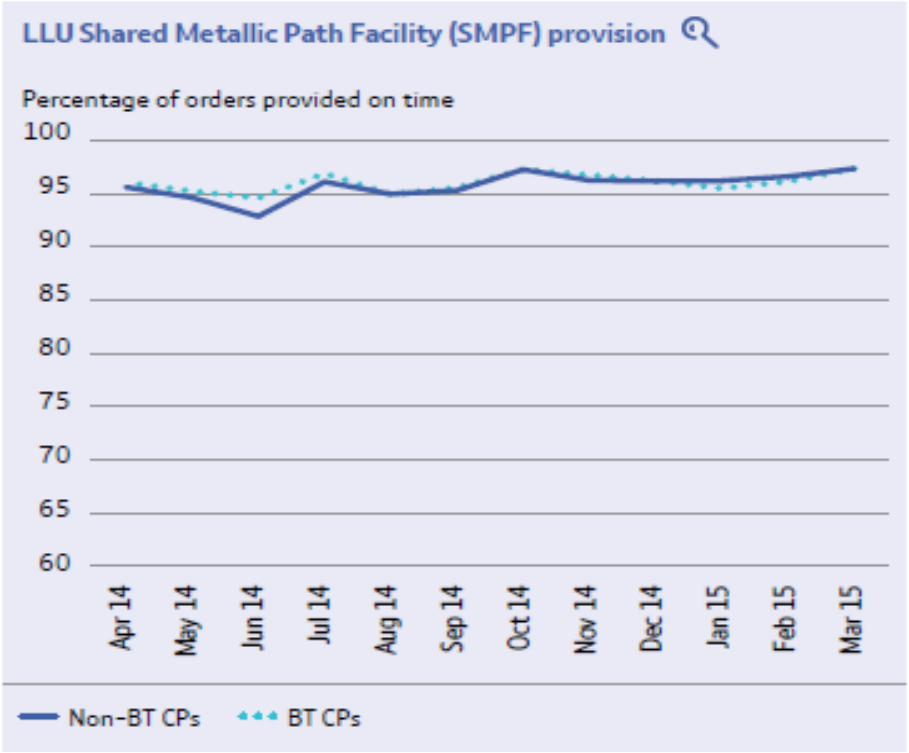
The various industry forums have developed over the past decade and they form the basis for Openreach product development. As required by the Undertakings, the SoR process is widely used and SoRs are discussed with industry before progressing. The development of the SoR tracker tool gives all CPs access to up-to-date progress information and, following feedback from CPs, this has developed greatly over the past few years.

The EAB annual report (http://www.btplc.com/Thegroup/Ourcompany/Theboard/Boardcommittees/EqualityofAccessBoard/Publications/EAB_Annual_Report_2015.pdf) includes various charts showing the KPI measures along with the EAB's comments on the outcomes. A selection of these KPI charts is shown below but the full set are available in the annual report.

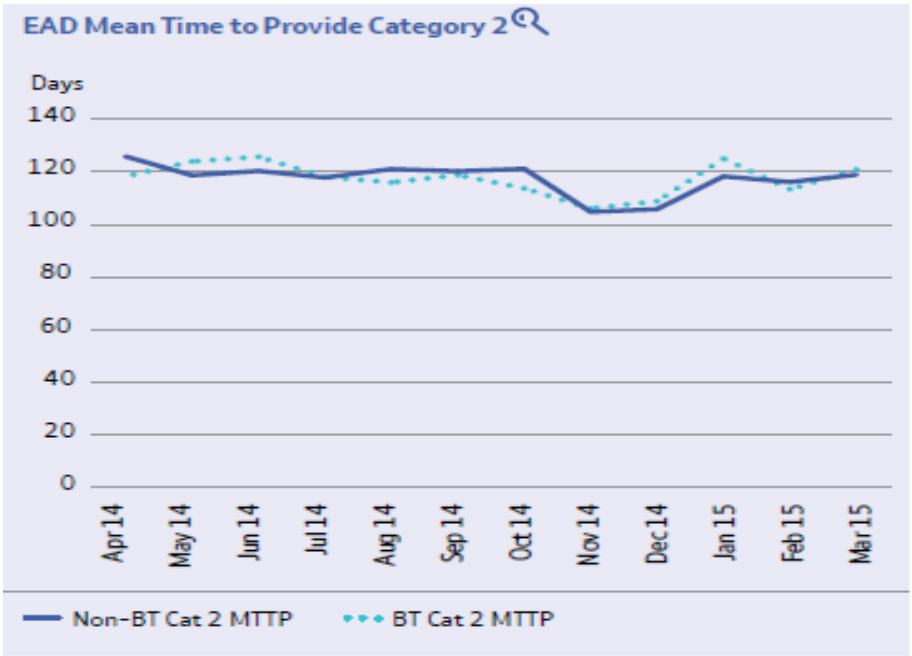
Openreach



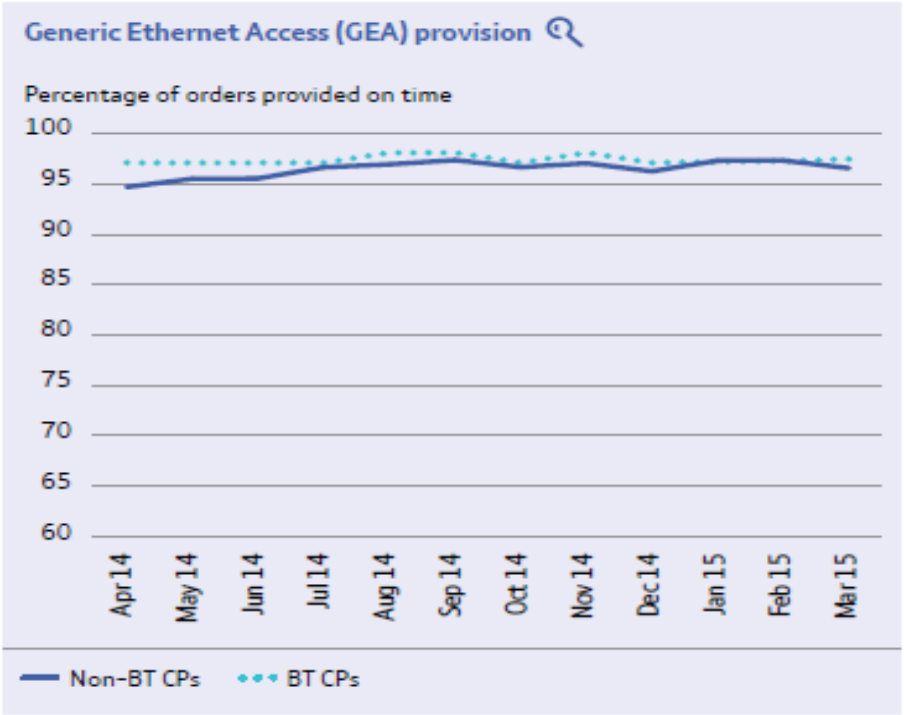
This table shows the number of Openreach SoRs received from external CPs and downstream BT and at the various stages of the process through to delivery. This shows, amongst other things that for the year to March 2015, 10 SoRs from external CPs were in development compared to 2 from downstream BT and 7 were delivered for external CPs compared to 5 for downstream BT.



This chart shows the percentage of SMPF provision orders that were provided on-time. The performance for external CPs and downstream BT was virtually identical throughout the year.

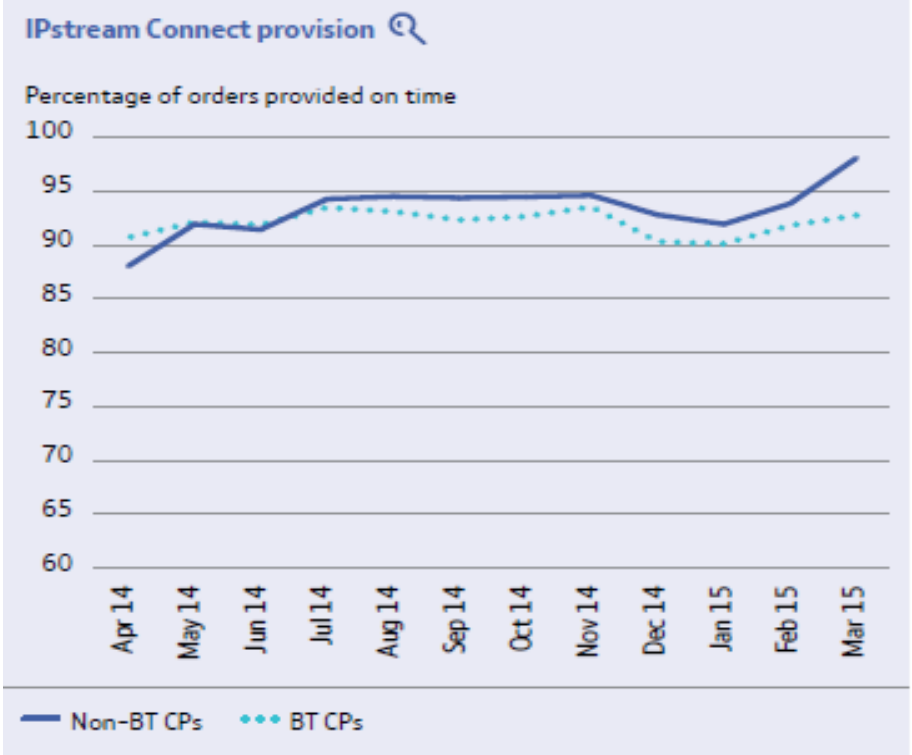


This chart shows the mean time to provide EAD orders over the year to March 2015. Performance for both external CPs and downstream BT was broadly the same with variances either side.

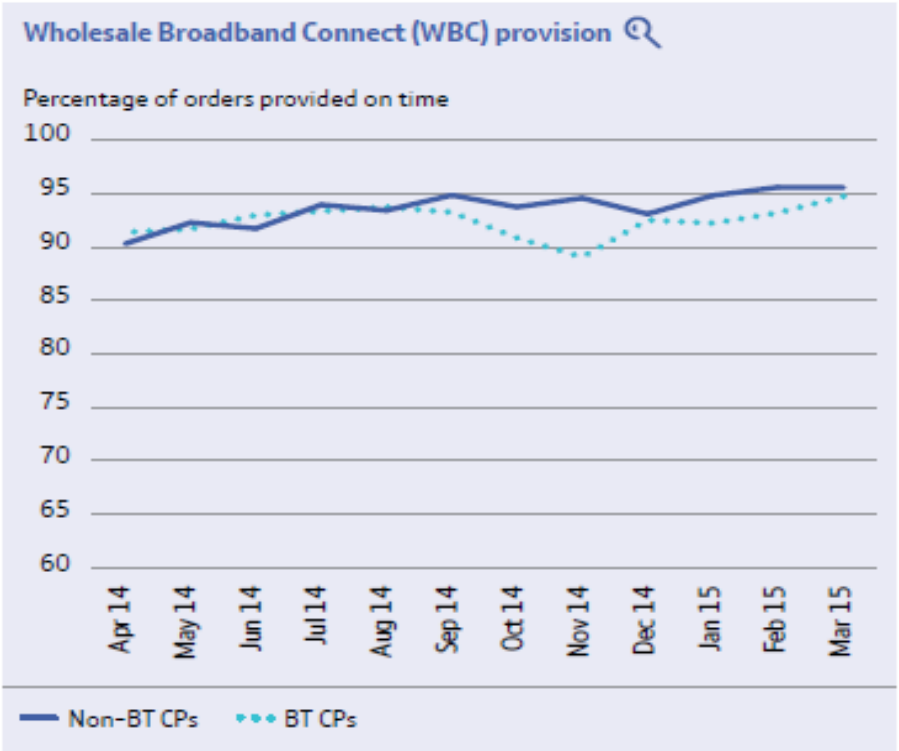


The percentage of GEA provision orders that were delivered on-time has been marginally better for downstream BT for the first part of the year to March 2015 but similar for the last 3 months. The EAB noted that the mix of different order types across the various CPs and with different average times to process influenced the outcome. The EAB stated that they saw no indications of failures of equivalence.

BT Wholesale



This chart shows the percentage of IPstream connect provision orders delivered on-time for the year to March 2015. From around July 2014, external CPs have had slightly better performance than downstream BT.



Similar to the chart above, it shows the percentage of provision orders for WBC that were delivered on-time. Since August 2014, external CPs have had slightly better performance than downstream BT.

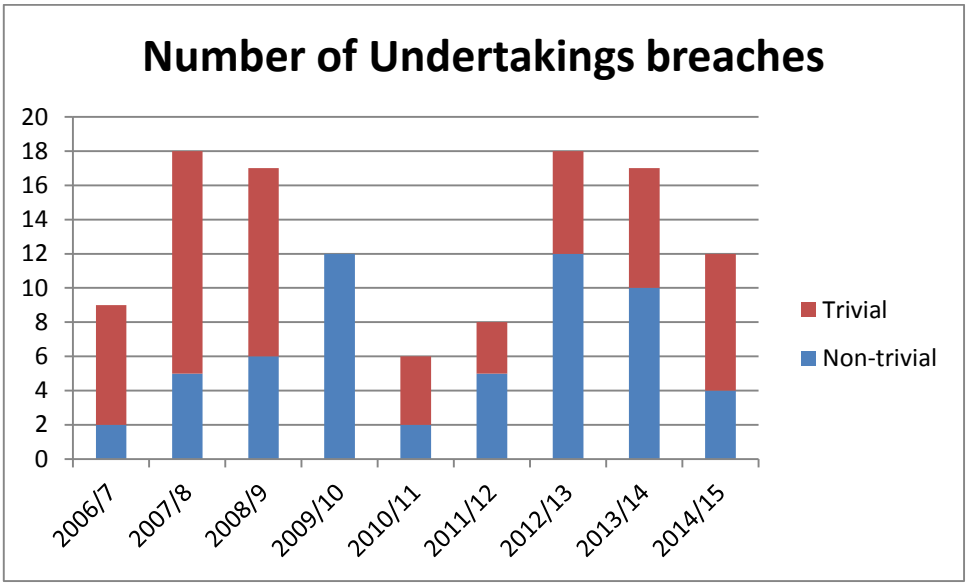
3. BT's compliance record with the Undertakings

Our work to create and continually improve our compliance culture has resulted in a strong record of compliance over the years. There are two main ways to measure this, firstly by our record of breaches of the Undertakings and secondly, by our delivery of binding milestones. Both these measures are set out in more detail below.

3.1 Breaches

Since 2006, there has been an average of 13 breaches of the Undertakings each year. This needs to be viewed in the context of c. 100,000 Openreach and BT people involved in millions of internal interactions and external customer contacts each year.

Breaches are classified as non-trivial or trivial and since 2006 the number of breaches in these categories is as follows:



Breaches are considered non-trivial based on a number of factors such as whether they have caused or have the potential to give BT's downstream business an advantage over external CPs, whether more senior people were involved, whether it is a one-off incident or whether it is a repeat of an earlier breach.

Non-trivial breaches would cover a range of issues such as a failure to meet an Undertakings milestones date, or for example a recent case whereby BT Wholesale breached an Ofcom Undertakings exemption that allowed it to continue to supply a mobile operator with a small-scale legacy non-EOI fibre service in the Westminster area. The exemption was on the understanding that no further supply would be made but several other mobile operators were incorrectly allowed to trial or use the service. Other non-trivial breaches have included systems issues and issues around the provision of equivalent services.

The vast majority of both non-trivial and trivial breaches were one-off incidents and nearly all were self-reported by BT people. For example, in 2014/15, there were 4 non-trivial breaches and 8 trivial breaches. Of these, 11 were reported by BT people.

The EAB Annual Report for each year includes details of the breaches that have occurred during the year.

3.2 CP complaints

The EAB also includes in its Annual Reports details of complaints from external CPs relating to compliance with the Undertakings that BT has received during the year. In the year to March 2015, there were 11 Undertakings-related complaints covering a wide range of issues. By way of example, one concerned a resident in a new housing development who complained that delays in providing service were longer because she had chosen a non-BT CP. Another complaint was that an order for a line that required pole work had not been completed while orders placed by other CPs on the same site had been completed. These complaints were fully investigated and, as reported in the EAB Annual Report, no breaches of the Undertakings were found.

3.3 Delivery of Undertakings commitments

The Undertakings required BT to meet a number of milestones in relation to creating and maintaining Openreach, separating both operational and management information Openreach systems from those used by the rest of BT, the migration to EOI products, and the separating of customer records.

These were major projects that cost in excess of £1 billion and in some cases were extremely challenging to implement. It was also clear as time progressed that a number of the commitments were significantly more complex to deliver than was envisaged when the Undertakings were drafted.

BT delivered all the commitments although a small number were subsequently removed with the agreement of Ofcom and therefore not required to be delivered. Since 2006, BT has delivered 31 binding commitments on or before the required date: 12 binding commitments were delivered after the required date (note 2 additional milestones were removed in agreement with Ofcom after their delivery dates had passed).

ANNEX 2

BT's rebuttals of allegations made by Sky in its initial submission to Ofcom, dated 29 June 2015

On 29 June, Sky published an initial submission to Ofcom on the Strategic Review of Digital Communications.

In this submission, Sky made a number of complaints regarding the quality of service delivered by Openreach, and an alleged "unresponsiveness" to CPs. It is claimed this is deliberate and made to BT's overall advantage.

This Annex lists these complaints and explains the actual situation, demonstrating the extent to which Sky has submitted a misleading set of evidence to which Ofcom should give no credence.

A. Quality of service – alleged Openreach poor performance

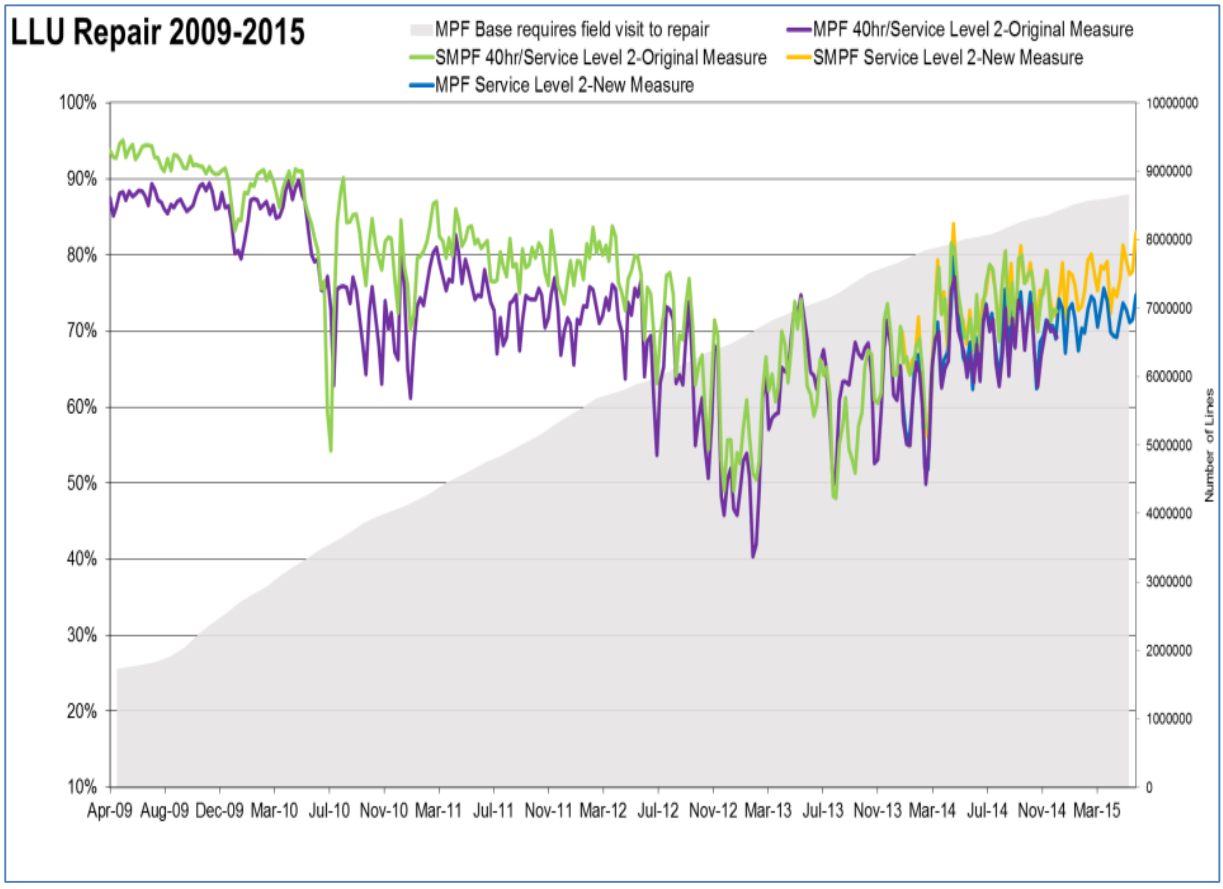
Aspect of service	Key Sky statistic(s)	Actual position
1. Speed of provision of new lines (1)	400,000 Sky customers had to wait over 10 days for a line to be installed	The average lead time offered for appointments requiring an Openreach engineer is currently 6.8 working days. In June/July of this year, 99.5% of customers were offered a provision appointment within 12 working days. But provisioning timescales are not just about Openreach: (i) customers play an important part in provisioning timescales. During June/July this year only 54% of customers chose to have an appointment within 10 calendar days, preferring to opt for longer lead times; and (ii) as Sky is well aware, CP processes can also require a longer lead time – for example, to take account of regulatory 'cooling off' periods when entering new contracts, or to ensure their equipment arrives with a customer in advance of an installation visit.
2. Speed of provision of new lines (2)	14,000 Sky customers had to wait more than 45 days	98% of orders are fulfilled within 45 days. Of the remainder, two thirds are provided on-time as per the customer's customer request. For the rest provisioning can be complex: providing a new fixed line can require civil build, wayleaves, even road closures etc. It is all a lot more involved than attaching a satellite dish to a wall.
3. Movement of dates	Openreach does not align CCD with requested date at a	The main reason for the Customer Confirmed Date being different to the requested date is due to order types being received with less than the minimum lead time – for example a 'start of stopped MPF line'

Aspect of service	Key Sky statistic(s)	Actual position
	rate of 11,000 per month Agreed dates are moved excessively - 36,000 a month	order requires 4 working days to deliver, and therefore orders placed with less than this timeframe will be altered, progressed and not rejected. There can sometimes be issues with the availability of line plant, but we make every effort to ensure such cases are minimised. Where Openreach misses an appointment, it pays £56 per occasion plus a month's rental for every day the line is provided late. Dates are not 'moved excessively'. From April – August this year 93.5% of jobs were delivered to the customer confirmed date. The majority of rearranged dates are simply due to the customer not being available on the agreed day and therefore the job is reappointed in line with customer requirements.
4. Engineers missing appointments too frequently	Sky customers experience 500 missed appointments a month	Openreach only misses provision appointments for Sky around 2% of the time, that is 49 out of 50 appointments are kept. In comparison, it is 3 times more likely that an appointment is missed due to a customer not being at home, or because a CP has not made the necessary arrangements with the customer. Openreach has been working hard to minimise missed appointments, but occasional occurrences are inevitable. Every missed appointment is regrettable, but Openreach compensates Sky £56 for each Openreach occurrence and thus has every incentive to minimise these.
5. Engineers fail to complete line installations	4,000 jobs a month are not completed and furthered	93.4% of jobs are completed on the customer confirmed date. The most common reason why Openreach cannot complete the work is because the end customer is not in. On this issue, Openreach is working hard to help Sky and our other CPs to reduce the instances where the end customer is not in. For example, Openreach has recently released the 'View My Engineer application to enable end customers to view the engineer's location and contact them directly.
6. Faults develop after installation ('Early Life Failures' - ELFs)	Data points not shown in Non-Confidential version	Openreach has been working collaboratively with industry to identify root causes of ELFs and to put in place cross industry processes to enable swift resolution. This approach has been positive and has

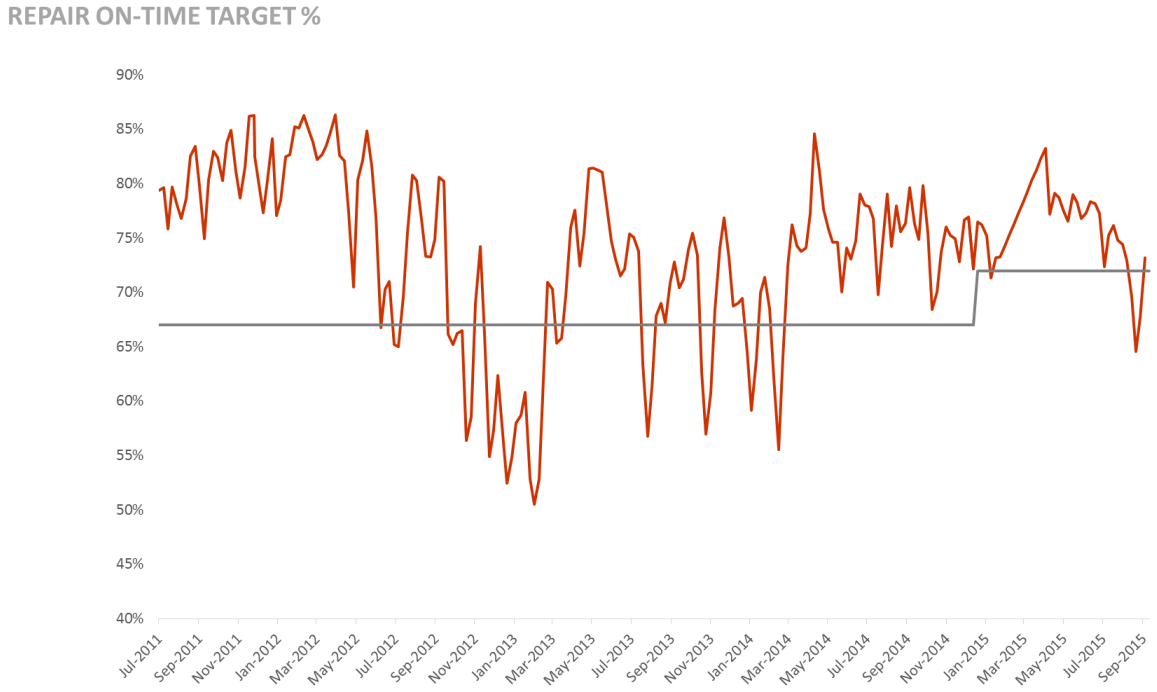
Aspect of service	Key Sky statistic(s)	Actual position
		enabled us to identify underlying causes across the value chain and make beneficial process changes.
7. Faults increased between 2009 and 2012	In 2012, which is the last year for which reliable data is publicly available, there were around 3 million faults on customers' lines.	These are now very old numbers, and Openreach has every incentive to reduce faults. We have been investing tens of £ millions per year for proactive maintenance, thus reducing the number of customers experiencing a fault. We do accept the fault rate increased at a modest rate between end of 2011 and early 2015 – one cause has been the greater use of the network as more customers take broadband and are on line for longer. Customers are also using their connections for ever more demanding applications, such as TV. We do appreciate that service is of the utmost importance to customers.

8. Sky allegation that Openreach fails to meet repair targets for LLU and WLR

As the chart below shows, the MPF installed base more than doubled from 3 million in April 2010 to 6.5 million in January 2013 (as per the grey shared area) and service performance did decline over this period. However, Openreach has been achieving improved service levels in more recent times despite the increase in the base and the number of lines where next day repair is required.



9. Further, Openreach has exceeded the Minimum Service Levels (MSLs) set by Ofcom in the last Fixed Access Market Review (annual average performance target set at 67% last year and 72% this year) across the copper portfolio:



B. Alleged examples where Openreach has been deliberately unresponsive to BT's competitors

Sky alleges that Openreach does not serve CPs with "zeal, efficiency and enthusiasm" and that this "unresponsiveness" appears to reflect the fact that Openreach is seeking to avoid causing overall detriment to BT. In other words, Statements of Requirements are used to restrict competition and that Openreach's behaviour demonstrates a "conflict of interest". We reject this absolutely.

Openreach has a proven track record of receiving, assessing and responding to SoRs submitted by CPs following the agreed industry process. Openreach engages with CPs eagerly on proposals with identifiable benefits or aims, seeks to prioritise these with industry, and works to achieve good CP engagement to ensure we can jointly deliver beneficial changes.

Openreach has operated a review process with the OTA, EAO and Ofcom for over three years to ensure any queries regarding progression of SoRs can be raised, reviewed and clarified. Openreach also routinely provides SoR delivery and rejection reports to the EAO and makes visible the same information to OTA and Ofcom. The data in the tables below is based on these reports. Note that in some cases, an SoR is widely agreed across CPs, but for ease it is submitted by one CP, known as the 'lead CP'. For such cases, the data in the table relates to the lead CP only.

	Number of SORs delivered			
	2013-14	2014-15	2015-16	Total
BT CP	6	5	1	12
non-BT CP	5	9	1	15

	Average months to deliver SORs			
	2013-14	2014-15	2015-16	3-year average
BT CP	11	30	15	19
non-BT CP	24	14	17	18
Sky	21	17	17	18

Specific issues raised by Sky

1. PQTs should be passed to CPs – process development has been "in progress" for 2 1/2 years

Openreach makes available checklist data to CPs as part of its SFI product. This information about the outcome of the engineer's findings on the job is also being further enriched through the use of Question Based Closure. Openreach has continued to work with industry to invest and enhance the customer experience and consider that the best way forward is to share additional technical data in advance of an engineering visit to reduce wasted visits.

2. Request for more detailed copper network information and involvement in G.Fast trials: and regarding industry standards

This was SoR 8385 – Sky were asking for some specific pieces of network information. Vodafone initially stated that they wanted the same thing, but after further discussions they realised that they actually wanted something different to the Sky requirement. All of the information that Sky wanted was held by Openreach but not in the format Sky wanted; it was also held in different systems and so we would have had to do development to pull the information from the relevant systems, put it together and then make it available to CPs.

It appeared that Sky was the only CP that wanted the information and it was anticipated that frequency of download would be low – perhaps only once a year - as the copper network topology did not change significantly enough to warrant regular downloads. The price would therefore have had to have been very high in order to recover costs, and it was felt to be unlikely that Sky would have paid the price. There were no clear Openreach benefits identified.

We took the OTA through all of the data including development costs and the Openreach position was understood and rejection of the SoR was agreed at the industry forum (CPCG).

3. Single Jumper MPF was rejected by Openreach

This was taken through a formal regulatory dispute by TalkTalk and that on 15 November 2013. Ofcom concluded, following a detailed cost benefit analysis, that Single Jumper MPF (SJMPF) was actually likely to lead to an increase in incremental industry costs versus the DJMPF offered and so was less efficient. Ofcom also confirmed that Openreach had complied with the requirement to consider new requests.

4. Tie pair reconciliation report - feasibility study still unfinished

Openreach is still reviewing the case for the Tie Pair Reconciliation report and this is a good example where finding a commercially beneficial case takes time and requires customer engagement. Openreach is committed to considering every reasonable angle on customer's commercial propositions.

5. Single Order GEA - this was initiated by Openreach outside of SoR process: Sky is not convinced of the benefits

Openreach recognised that customers' growing use and reliance on internet applications has caused a significant rise in service expectations that require a different approach from Openreach. To meet these rapidly changing customer needs, Openreach initiated industry collaboration via the standard industry forum (CPCG) to take forward a single, simpler, digital network built on the NGA infrastructure. Therefore Openreach has taken the initiative to ensure all parties understand the future network architecture including the associated benefits. We hope that Sky will appreciate the benefits of this initiative in the fullness of time.

ANNEX 3

Ofcom's powers in respect of functional and structural separation

1. The legal hurdles for imposing structural separation on BT are very high indeed

Ofcom does not have the power to impose structural separation under the European Regulatory Framework (ERF). It also has no power to insist on structural separation undertakings under the Enterprise Act 2002 (EA02). Should it minded to consider structural separation, Ofcom's powers would be limited to making a market investigation reference to the Competition and Markets Authority (CMA), provided (which BT does not accept) the statutory test for a reference is met.

The test for Ofcom to pass in order to make a reference to the CMA is that there continue to be, after the application of the ERF, features of the markets that give rise to an adverse effect on competition. It is not obvious that it is possible to make a reference that meets this threshold, when the efficacy of the ERF has been taken into account. Ofcom would in effect have to demonstrate that all its ERF powers were insufficient to deal with the competition issues in the markets. This would require an assessment of the ERF, and of Ofcom's use of the ERF, as well as of the state of competition.

Whilst, in general terms, the powers of the CMA under the EA02 extend further than Ofcom's, specifically in relation to communications services, whose regulation is a European Community competence, the CMA would have to exercise its powers in ways which are consistent with the ERF, which imposes a maximum set of obligations to regulate communications. Since the ERF does not include any powers to impose structural separation, and given the need for the application of EA02 powers not to undermine the objectives of the ERF, it is in practice not open to the CMA to impose a structural separation remedy. It follows that any attempt to mandate a structural separation obligation would risk putting the UK in conflict with its European law obligations – a situation which, if it occurred, would take many years to resolve through the UK and European legal systems.

Given the conflict between the purpose of the ERF which is to deregulate national telecoms markets so far as possible and restrict the circumstances in which Member States can impose ex ante conditions on electronic communications networks, we consider it highly unlikely that, taking a pragmatic approach, the CMA would apply the UK's market investigation regime to address any actual or foreseeable deficiency in the market by means of remedies that result in more onerous obligations than those permitted by the ERF.

It should be borne in mind also that the CMA's powers to impose remedies are further constrained by the requirements of the general principles of European law to act reasonably and proportionately, to ensure that it does not go beyond what is necessary to achieve its aims and does not impose disproportionate disadvantages. If there is a choice between several effective measures, the CMA must choose the one that imposes the least onerous restrictions. If the relevant consumer benefits (such as lower prices, higher quality of service or greater choice and innovation) can be delivered without the costs and consequences that would arise from the ending of vertical integration (in which regard see section 4.7[D] of this response), the CMA would be duty bound to decide that a structural separation remedy is neither required to preserve these relevant consumer benefits nor consistent with the fulfilment of those duties.

2. The criteria for mandating functional separation are not met

Functional separation can only be imposed by Ofcom as a 'phase 2' measure under the ERF, i.e. where all other SMP obligations have already been imposed and failed, as an "*exceptional measure*", and to the extent that BT has SMP.[96]

[96] Article 13a Access Directive.

Here, again, Ofcom also has to act consistently with the ERF's policy objectives and regulatory principles, which include ensuring that obligations are imposed only where there is no effective and sustainable competition.[97] Further, Ofcom needs to satisfy the European Commission that there is little or no prospect of effective and sustainable infrastructure based competition and that such a remedy would be effective in procuring competition such that functional separation is therefore warranted.[98] Without the positive consent of the European Commission, having consulted BEREC and the European Parliament, such a remedy cannot be imposed.

In BT's view it is self-evident that the UK retail communications markets are not, in general, suffering from a lack of effective competition – on the contrary a comparison of the state of competition across European markets by the European Commission would find the UK to have exceptionally strong competition – and that Ofcom has by no means exhausted its panoply of SMP remedies to target specific concerns in relation to service, non-discrimination and persistent upstream bottlenecks, such that it does not have a case for applying the remedy of the last resort, functional separation.

These considerations combined with Ofcom's duty to act proportionately by imposing obligations that are no more onerous than necessary to achieve legitimate objectives (see below) would equally, in our view, preclude a mandatory functional separation remedy under the ERF.

3. The ERF provides a fully effective framework for the regulation of communications markets

The ERF has developed, and is continuing to develop, to reflect the changing nature of communications services and the way in which they need to be regulated. EOI is now a "mainstream" SMP remedy that removes the ability of vertically integrated operators to discriminate in favour of their own downstream business activities. Regulatory accounting and reporting obligations provide transparency that allows NRAs to monitor compliance. Ofcom's regulatory powers are reinforced by its powers under the Competition Act to deal with abuses ex-post, if any. And, if all else fails, Ofcom has its dispute resolution powers to resolve matters that cannot be settled between operators. The ERF provides that the NRA can use its regulatory powers (including the ability to impose financial penalties for breaches of regulatory obligations) to enforce compliance. The ERF also has the benefit of requiring regular reviews of regulation so that obligations that have served their purpose in introducing competition and are no longer required can be removed at the earliest opportunity.

For the reasons set out above, the ERF framework should be the foundation, the cornerstone and the ceiling of Ofcom's regulatory framework. Other mandatory regulation that duplicates ERF regulation should be removed. As the regulation of communications services is a Community competence and the European Community has laid down the Directives of the ERF, these are the only powers that Ofcom is permitted to use to regulate communications in general and BT in particular.

4. **The role of BT's Undertakings under EA02**

The current BT Undertakings were voluntarily given but are legally binding on BT. Ofcom must keep these Undertakings under review. BT considers it to be a reasonable interpretation of events that the current Strategic Review of Digital Communications includes and constitutes a review of the Enterprise Act undertakings. As such their continuation should no longer be assumed.

[✂

[97] Article 8 Framework Directive, and Article 8(5)(f).

[98] Article 13a(2)(b) Access Directive.

[99] [✂]

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[✂

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Ofcom's power to give directions to remedy breaches is embedded within the Undertakings[100]. Ofcom can enforce BT's compliance the Undertakings through the courts, which may impose penalties[101]. Civil actions for damages to all relevant parties, and the ERF's dispute resolution process are also available. There is no lack of enforcement mechanisms. All evidence indicates that the Undertakings have generally worked well.[102]

In BT's view [✂
] Given that BT has become subject to EOI obligations as SMP conditions as a matter of course in under relevant market reviews, the duplicative EOI obligations in the Undertakings are now otiose.[103] As the ERF limits Ofcom's powers to impose non-discrimination obligations to markets in which BT is found to have SMP, it is not appropriate to impose EOI obligations in non-SMP markets. In view of the availability of SMP remedies to target specific concerns and Ofcom's powers of enforcement under the ERF, BT does not believe that there would be a need for an additional enforcement mechanism as part of the Undertakings.

Given the existence of the Undertakings, [✂], BT does not believe that the test for making a reference to the CMA could be met by Ofcom.

5. Duty to act proportionately

When considering whether to impose obligations on BT under the ERF, Ofcom will be mindful of the European law principle of proportionality. This involves consideration of two questions: "*first, whether the measure in question is suitable or appropriate to achieve the objective pursued; and secondly, whether the measure is necessary to achieve that objective, or whether it could be attained by a less onerous method*". Sometimes a third question is also addressed, "*namely, whether the burden imposed by the measure is disproportionate to the benefits secured."*[104]

Under the ERF itself, obligations imposed must be "*based on the nature of the problem identified, proportionate and justified in the light of the objectives".*[105] These objectives have to be achieved by reasonable and proportionate means by applying "*objective, transparent, non-discriminatory and proportionate principles*". Ofcom must ensure regulatory consistency, avoid discrimination, promote "*infrastructure-based competition*" and promote efficient investment and innovation in new and enhanced infrastructure. Most importantly, Ofcom must impose ex-ante obligations "*only where there is no effective and sustainable competition and relaxing or lifting such obligations as soon as that condition is fulfilled*.[106]"

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[100] Sections 15 and 16 of the Undertakings

[101] Section 167 Enterprise Act 2002

[102] See BT's response to Question 15 DCR

[103] Duplication due to legislation falls within the type of circumstances in which it is appropriate for undertakings to be varied or revoked - see paragraph 2.6, CMA 11.

[104] Sometimes a third question is addressed: "*namely, whether the burden imposed by the measure is disproportionate to the benefits secured."* R (Lumsdon) v Legal Services Board [2015] UKSC 41, Para 33.

[105] Article 8(4) Access Directive

[106] Article 8 Framework Directive

The principle of proportionality is reflected in the expression of Ofcom's duties under the Communications Act 2003[107] and in Ofcom's regulatory principles to "*strive to ensure its interventions will be evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome*".

To the extent that Ofcom identifies specific concerns, where there are less restrictive alternatives to achieve the objective pursued, "*the reasons why less restrictive alternatives were rejected*"[108] must be apparent. BT believes it would not be possible to demonstrate that SMP conditions [✂] were insufficient to deal with all of Ofcom's competition concerns.

[107] Under sections 3 and 4, Ofcom must not impose burdens which are unnecessary or maintain burdens which have become unnecessary.

[108] R (Lumsdon) v Legal Services Board [2015] UKSC 41, Paragraph 6

ANNEX 4

BT Undertakings: List of provisions for deletion

The sections of the Undertakings set out in the table below should be removed for the reasons set out in our response to Ofcom's Question 15 in Section 4.10 of this response.

Section	Description/Summary	Justification for removal
2	**Definitions *(partial deletion)***	
	Definition of IBMC	No further IBMC requirements
	Definition of Measured Products	Relates to spent/time-expired provisions
	Definition of NGN	NGN-specific provisions (Section 11) no longer required
	Definition of Ready to Mass Migrate	Relates to spent/time-expired provisions
	Definition of RFS date	Relates to spent/time-expired provisions
	Definition of Supply Side Record	Relates to spent/time-expired provisions
	Definition of TILLAP	No longer relevant: product unlikely to be required
	Definition of TILLBP	No longer relevant: product unlikely to be required
3	**Provision of equivalent products and service (*whole section to be deleted*)**	
3.1-3.8	Provisions on products to be supplied on an EOI basis: includes time-expired implementation milestones	Where required, EOI should be imposed as an SMP condition
4	**Transparency (*whole section to be deleted*)**	
4.1-4.2	Transparency on PPCs, CPS and DataStream; TILLAP/TILLBP costs in PPC cost stacks	Spent/time-expired; PPCs, CPS and DataStream are obsolescent: TILLAPs and TILLBPS unlikely to be required
5	**Access Services *(partial deletion)***	
5.1 - 5.2	Establishment of Openreach	Should be replaced with obligation to maintain Openreach
5.4 - 5.5	List of products to be provided by Openreach under 5.3	Section 5.3 together with SMP conditions achieves the required result
5.6	TILLAPs and TILLBPs to be provided such that CPs can replicate PPCs	No longer relevant: products unlikely to be required
5.7 - 5.8	New SMP NGN access products to be provided by Openreach	Covered by SMP obligations
5.10 and 5.16-5.18	Backhaul product development rules development	Covered by SMP obligations
5.11	SOR process	Covered by SMP obligations
5.19	Space at exchanges for other CPs' aggregation equipment	Covered by SMP conditions
5.37	Transitional rules on LTIPs and share awards for Openreach employees	Spent/time-expired: should be replaced with maintenance obligation
5.43	Openreach to evaluate new product requirements on an EOI/non-discriminatory basis	Covered by SMP conditions

5.44	System separation rules and audit requirements	Delete requirement for physical system separation. Delete time-expired milestones.
5.45	System separation milestones	Delete time-expired milestones and convert remainder from an implementation obligation to a maintenance obligation
5.46	Openreach not to supply products to other parts of BT unless they are also offered to other CPs on an EOI basis (exceptions apply)	Where required, EOI should be imposed as an SMP condition
5.48	Openreach to have separate brand to be used on stationery, websites, clothing and vehicles	Convert from an implementation obligation to a maintenance obligation
5.49	Rules on Openreach provision of exchange space and power to other CPs	Reword to disapply if an effective industry arrangement (such as APOP) is in place.
5.50	Openreach to consult with industry on any change to scope of co-mingling product	Covered by SMP conditions
5.52-5.62	Openreach to be able to control and operate FTTC/FTTP electronics – subsections that set milestone dates	Spent/time-expired
6	**Management and structure of BT Wholesale *(whole section to be deleted*)**	
6.1-6.15	Provisions relating to separation of BT Wholesale	Disproportionate – to be removed
7	**Equipment location *(whole section to be deleted*)**	
7.1-7.8	Provisions relating to space at exchanges for CP equipment	Should be limited to SMP markets and therefore covered by SMP conditions.
8	**Separation of Upstream and Downstream Divisions *(whole section to be deleted*)**	
8.1-8.7	Provisions relating to separation between i) BT Wholesale and ii) BT Business, BT Consumer and BT Global Services	Unnecessary constraints on BT's organisational flexibility outside Openreach; some provisions covered by SMP conditions – to be removed
9	**Code of Practice *(partial deletion)***	
9.4	Briefing and training programme on launch of the CoP	Time-expired
11	**Next Generation Networks *(whole section to be deleted)***	
11.1 – 11.20	Provisions relate to design of BT's NGN and supply network access services provided over it	BT has not built/will not build NGN as envisaged at the time of the Undertakings; the industry group referred to was discontinued around 2007; and SMP EOI conditions provide the required protections to other CPs.

12	**Contract management mechanism *(whole section to be deleted)***	
12.1	Within six months of the date the Undertakings come into effect, BT to work with Ofcom and CPs to set up a mechanism to deal with issues about T&Cs for SMP products	Time-expired, and the specified mechanism was not required.
20	**General *(partial deletion)***	
20.4	BT and Ofcom can agree changes during initial transitional implementation period	Time-expired
20.5	Certain sections only come into force four months after the Undertakings take effect	Time-expired
Annexes *(partial deletion)*		
Annex 1	EOI timetable for non-NGN products not already listed in 3.1	Time-expired
Annex 3	Leased Lines	Time-expired
Annex 4	Equipment to which Section 7 applies	Should be covered by SMP conditions

ANNEX 5

The SME market in the UK

Summary

- The SME market is diverse and complex, not one-size fits all.
- SME consumers aren't a homogenous group, and can't be shoehorned into a narrow set of references. This makes it virtually impossible, unlike residential consumers or Corporates, to treat them as a coherent group.
- That makes the market hard to understand without regular research and feedback.
- Competition is fierce and dynamic, across all market segments.
- The range of competitors is extreme with volume players, regional niche players, local service providers and IT specialists all competing in the market.
- Commercial differentiation is critical to stand apart for the many competitors.
- A wide range of products, service and solutions are available for SMEs from a wide range of suppliers.
- Switching of products and suppliers is commonplace and for broadband and new wave products is significant driven by competitive offers.
- We agree with many of the general points Ofcom make but do not see evidence that suggests further regulatory intervention is required.
- We agree the importance of Access, Assess and Act to support competitive choice and decision making.
- We are working to improve access to and ease of use of relevant product and pricing information on our website and to make transactions easier for business consumers.
- We are committed to the development of the broadband speed code of practice for business.
- We are committed to developing enhanced service options for SMEs that meet their needs.

Understanding SME needs

BT Business is committed to understanding the needs of business customers of all sizes. Investing nearly £1m a year, we run a number of research initiatives to ask SMEs about their business needs, how they use communications services and what improvements they'd like to see in product design and service support. These include:

- BT Business Panel: comprising 2,057 members, open to all businesses regardless of whether they are a customer of BT Business or not. Panellists are invited to comment on BT initiatives and improvements to products and services.
- Customer/market research: we use a variety of approaches to research new customer needs, experiences and priorities to inform product and service development.
- BT Business customer experience feedback programme: BT Business runs a suite of research to understand customer perceptions of their experience of dealing with BT, its people, products and services. The process for reviewing and acting on this feedback has recently been invigorated to include direct responses to customers when appropriate and new governance structures for the improvement plans, owned at managing-director level.

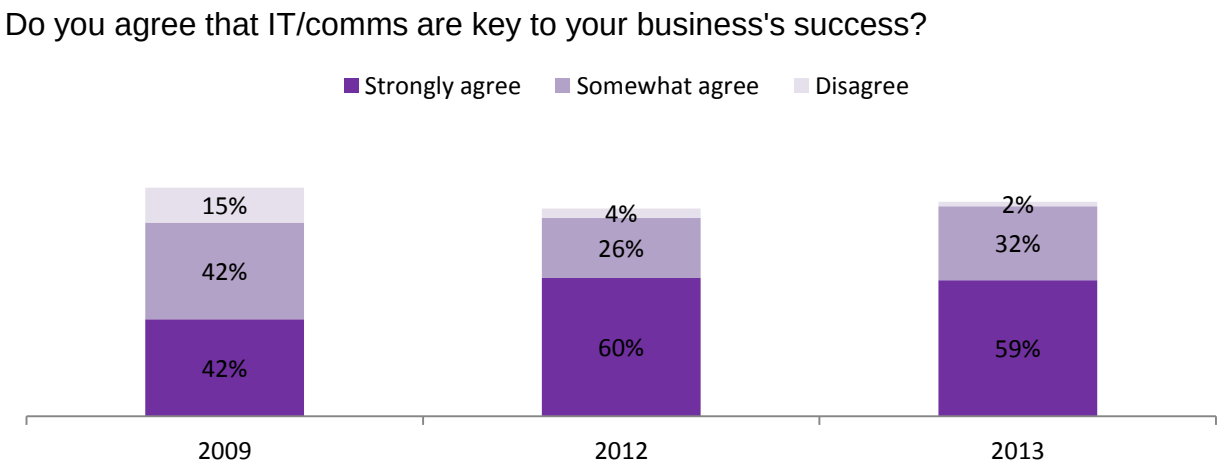
By getting closer to customers, BT Business has been able to design products which meet SME customer needs. For example, customers told us that they wanted to buy products which delivered

PBX and UC functionality seamlessly across fixed and mobile phones, so we developed BT One Phone, BT Business's new fixed-mobile solution.

The SME market

As we show below, the SME market is incredibly diverse, ranging from tradesmen e.g. plumbers, electricians etc., who may be sole traders and need only internet access and a mobile, to complex multi-site, possibly international, organisations, employing hundreds of people with a requirement for the latest state of the art solutions. This diversity makes it impossible for anyone to say, with any certainty, that SMEs need particular services in order to run their businesses effectively. The high levels of competition in this segment drive innovation and competitive pricing to the benefit of all.

Communications technology is increasingly important to SMEs, frequently underpinning their ability to serve their customers and manage and grow their business efficiently and profitably. In a BT Business study, *Being in Business 2013*, 91% of SMEs agreed that IT and Communications were key to business success, up from 86% in 2012. Early results from 2014 indicate similar proportions. Only 2% disagreed, 13 points lower than four years ago.



- The trend towards a more technically sophisticated consumer is driving businesses to introduce new communications services, business models and working practices. Consumers have growing expectations of the businesses they buy from. They expect them to be omni-channel, interacting with them at their point of need and through their channel of choice, whether physical outlet, the Web, social media or mobile device. They expect their interactions across these channels to be integrated and personalised. And they want to be able to interact with businesses at times that suit them, increasing the pressure on businesses to be 'always on'.
- The tougher, more competitive environment that SMEs have operated in since 2008 has driven significant change initiatives within them to increase efficiency, cut costs, reduce time to market, diversify and find new channels to market. At the same time, innovations in digital channels and business models have presented new opportunities for them. This has resulted in a more strategic use of communications technology within SMEs.
- Trends in working practices including flexible hours, working on the move (in airports, coffee shops, customer premises, at home) and an increase in the speed of business has amplified the importance of communications technology in enabling collaboration. Furthermore, employees in the workforce expect workplace technology to be as easy to use as it is in a home environment and would prefer in some cases to use their own devices (BYOD) and/or home applications such as Dropbox. This can represent both an opportunity for SMEs to save cost and an IT headache for them as they try to address the security and IT support implications.

- Changing regulations and the digitisation initiatives of central Government also mean a move online for much SME 'paperwork'.
- Technology trends, such as the roll-out of super-fast broadband and 4G and applications providers' move to cloud-deployment models have themselves made communications technology more available to SMEs. For example, the availability of fibre broadband has helped SMEs adopt IP voice and other cloud-based collaboration services, which would have been unsatisfactory over copper broadband. The cloud delivery model has brought some types of applications within reach of even very small businesses for the first time, and they are often able to be more agile in their use of these than larger businesses, where internal process and legacy systems can be a barrier.

Communications needs are determined by multiple factors

BT Business research and interaction with customers suggest that in addition to size, SME communications needs are differentiated by:

- their location (type of location, region and number of sites);
- type of business (eg vertical sector, B2B vs B2C, public, private or third sector);
- importance of IT in their organisation (eg whether IT is mission critical, whether they have an IT specialist/team, their degree of technology understanding and skill);
- the extent to which the business is mobile (need to support remote workers, access data on the move);
- business priorities (efficiency, productivity, cost management, growth, diversification, new markets);
- business turnover;
- availability of local infrastructure.

SMEs' needs of their communications suppliers also differ according to their size, their communications needs and the way they manage communications and IT internally. BT has established a channel framework that meets the needs of a variety of customers: online, BT Local Businesses, indirect partners and account management for larger businesses.

Business size is an important determinant of communications technology use

Although many factors affect communications need, employee size is used by many providers as the leading indicator. It is both strongly correlated with need and one of the most readily available firmagraphics. Use of most services increases at a steady rate by employee size, although broadband and fibre are more dominant in smaller businesses. 100-250 employee businesses are at the high-water mark for most other services. Findings of a recent, extensive study of usage of and future plans for business communications are shown below to demonstrate differences between businesses of different sizes.

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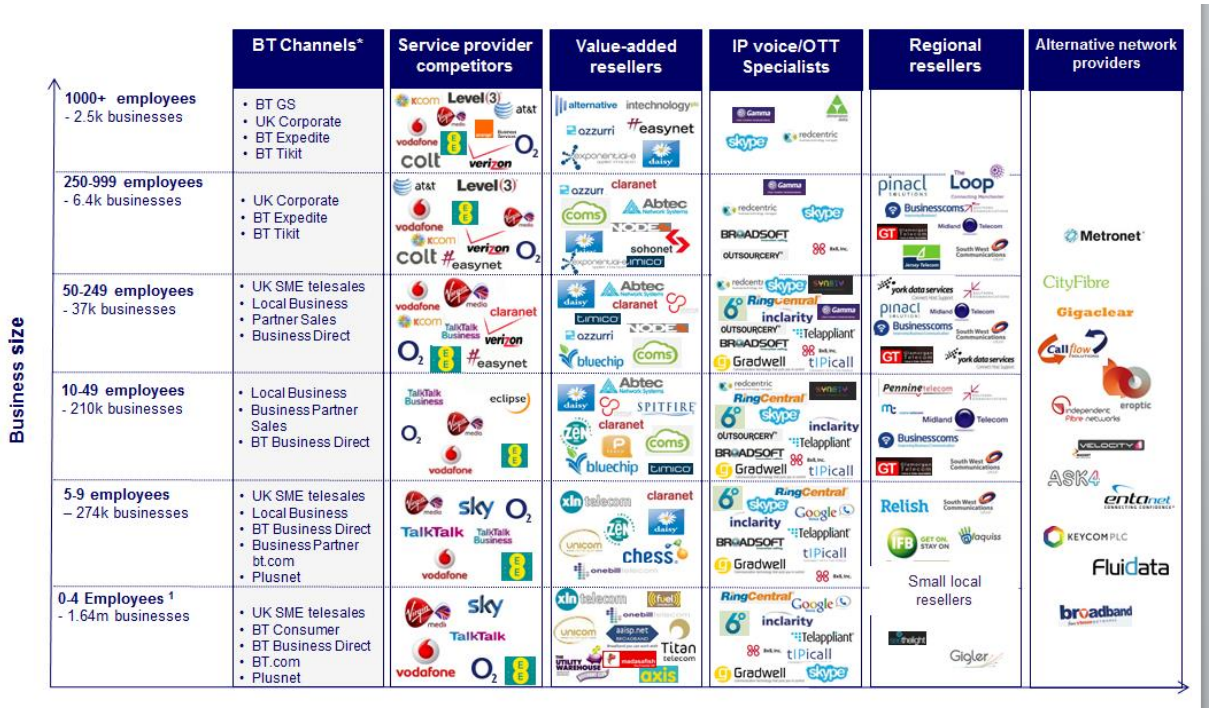
A diverse supply side exists to meet those needs

Businesses use a wide range of CPs. Some examples are included in the table below, although it should be noted that in most cases these are just a selection of competitors in each category.



The report by IDC that we will provide separately highlights the rapidly changing face of competition in the SME market. Small and Medium Sized Enterprises (SMEs) are the mainstay of any economy, and the UK is no different. In the Market Insight paper titled *Addressing the Communication Needs of SMEs in the UK to 2020* IDC outlines how the market is changing today and will continue to do so over the next 5 years. It highlights how traditional TDM-based voice has been substituted by IP voice, and how the fusion of IT and communications into ICT (Information and Communications Technology) is changing how SMEs operate and broadens the markets they can reach. ICT also opens up the supply-side of the market thus providing SMEs with more choice of technologies, solutions, and vendors than they have ever enjoyed before. In the round this amounts to a digital transformation – and SMEs will be major beneficiaries as we move towards 2020.

Providing customer choice to SMEs

Key needs for SMEs include reliable connections, access to new technology, excellent service and good value speed. These key features have been implemented in our portfolio, which is constantly evolving to ensure we exceed customer needs and enhance their commercial footprint. BT provides a varied portfolio of products which covers the needs of 'one man bands', up to companies with 250+ employees. Products fit together in a way that enables SMEs to quickly and efficiently find the right package to suit their business needs and allows for future proofing as their organisation evolves.

BT Business Broadband offers 99.99% reliable connections and business traffic prioritised over consumer traffic. Dual Band Wi-Fi provided by the Hub 5.0 has opened up faster and stronger signals, alongside SmartWireless that constantly searches for the strongest signal, reducing drop out. For uncontended access and 100% reliability, BTnet ensures unlimited usage of top speeds at all times, providing a high quality dedicated product for SMEs that cannot afford to be offline.

The retail market is adapting to providing easier access to tailored services for SMEs. Products such as the Hub 5.0, a router which allows customers to have more flexibility over what they wish to prioritise, whether that's calls, data, emails or video-conferencing. Customers also have access to a

variety of value added services that can improve their business growth and streamline commercial relationships. Access to products such as TechHeads, Prompt Care and 24/7 support provide the vital services for small business who may not have their own support solution. Free, round the clock, technical support fulfils the need to have on hand advice and support with the combined confidence of choosing the right product.

The table below, a version of which is on our website, illustrates the wide range of broadband and fibre services available to SMEs from BT Business.

	Wires Only	BT Business Broadband	BT Business Broadband Unlimited	BT Business Broadband Premium	BT Business Broadband (Fibre)	BT Business Infinity	BT Business Infinity Unlimited	BT Business Infinity Premium	BT Business Infinity Ultra**	BT Business Infinity on Demand**	BTnet	Mobile Broadband
Engineer Install					Inclusive	**Self-install/Inclusive***		**Inclusive**	Inclusive		Inclusive	
Network reliability	99.99%	**99.99%**			99.99%	**99.99%**			99.99%		100% target availability	
Download speed	Up to 17Mbps	**Up to 17Mbps**			Up to 14.25Mbps	**Up to 38Mbps**		**Up to 76Mbps**	Up to 330Mbps		2Mbps to 10Gbps guaranteed	Up to 12Mbps (up to 54Mbps via BT Wi-fi)
Upload speed	Up to 0.9Mbps	**Up to 0.9Mbps**			Up to 9.5Mbps	**Up to 9.5Mbps**		**Up to 19Mbps**	Up to 30Mbps		Symmetrical service	Up to 5.7Mbps
Usage limits	1GB	**10GB**	**Unlimited**		Unlimited	**50GB**	**Unlimited**		Unlimited		Unlimited	1GB/3GB a month
Business traffic prioritised during busy periods	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Uncontended - so full speed at all times	
Minimum throughput speed during busy periods						**30Mbps**		**60Mbps**	70Mbps			
BT Tech Heads™ Support				✓				✓	✓	✓		
Office 365 Business Essentials 1 licence included for the length of the minimum period				**Inclusive**			**Inclusive**		Inclusive			
Upgrade to Office 365 Business Premium	£9	£9	£9	£4	£9	£9	£4	£4	£4	£4		
Prompt Care End of next working day fix, £25 goodwill payment if not met			✓	✓			✓	✓	✓	✓	Target fix time 5-7 hours	
Standard Care End of next working day +1 fix	✓	✓			✓	✓						
BT Business Hub	Hub 3 £79	**Hub 3**			Hub 5	**Hub 5**			Hub 5		Router included	
Unlimited use of BT Wi-fi hotspots	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
24/7 technical support online or via 0800	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Business Essentials 10 email addresses and 50MB web space	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

For more bespoke customer needs, products such as Featureline, ISDN2, ISDN30, BTnet, Fibre on Demand and Ethernet allow SMEs to select their products and services within certain budgets. Higher bandwidth and speed services such as BTnet are no longer the preserve of larger SMEs, with small data-dependent businesses such as graphic design studios or accountants choosing a higher specification of connection appropriate to their needs to help their business grow

Beyond the BT brand, BT Group offers small business customers an additional value option with its Plusnet brand. Plusnet offers customers a portfolio of ADSL and fibre broadband and phone services from as little as £5 per month for unlimited broadband for the first 12 months when customers take phone line rental at £10.50. Broadband or Fibre only services are also available from £10 per month. Plusnet actively markets online with occasional press advertising.
https://www.plus.net/business/broadband

The retail market is incredibility competitive for SMEs and market forces demand that retail providers such as BT Business deliver of quality, value and choice in order to compete.

Will businesses pay for improved connectivity services?

Firstly, some businesses are paying for improved connectivity services in our experience. For example, approximately 30% of all our new BTnet sales come from customers moving from broadband and fibre to dedicated internet access for the first time, and 80% of BT Business's BTnet sales come from SME customers.

Furthermore, the cost of dedicated access has been falling over time, bringing dedicated internet access within the reach of increasing numbers of businesses. For example, the price for a full 100Mbps port speed in 100M BTnet pipe has fallen by 50% over the last four years from £16,000 pa to £7,996 pa. See further prices in the table below. When input costs are reduced (by Openreach), BT Business is able to pass these on to consumers in reduced retail pricing reflecting a very competitive market, particularly with competitors such as Virgin Media Business, TalkTalk Business, Easynet, Claranet and exponential-e operating in this space.

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Transparency of Information

We agree with Ofcom that information regarding communication services is vital for businesses to be able to fairly and accurately choose which products and suppliers they require. BT Business online resources hold a bank of knowledge where customers can look at sales information, 'how to' & 'reasons why' product guides, white papers and case studies. Having tools such as self-assessment or feature comparisons can enable SMEs to tailor their communications service for the purpose and size of their business and make an informed choice of which provider they choose. BT Business provides helpful information to customers with advice and support to ensure the customer selects the best solution for their business at www.business.bt.com, including online chat as well as telephone contact with sales and support agents.

In addition to the wealth of information online, further materials are sent to customers and used within the sales channels. These are constantly updated with new products, services and offers so the customer receives the most up to date information possible. Material for customers allows them to make informed choices with what products they would like to purchase and differences between communication solutions. Material for sales agents ensures they are well informed of the best solution to meet their customer's business needs.

The market to serve SMEs is highly competitive with over 80 different broadband providers all offering a variety of services within the SME market. In addition to the information provided by BT Business to customers, there is an array of online price comparison sites, resellers and third party sales agents who support customers in comparing this array of providers, packages and prices and making an

informed choice on the best option for their needs. Market forces therefore are driving choice and transparency of information for customers.

BT Business is committed to the Ofcom proposed broadband speed Code of Practice. This will help businesses to make informed decisions and provide a right of exit should promised speeds not be achieved in practice. BTB also supports Ofcom's Gaining Provider Led switching processes for products with Openreach regulated inputs. This approach should be extended across all suppliers in the SME market.

In certain situations, Ofcom would be able to help by ensuring there is a fair and consistent framework for describing the common attributes of products and services, e.g. the unlimited broadband definition that has enabled customers to understand more about their connection and prevent potentially confusing information regarding speed. Where these rules exist it can help ensure consistent interpretation by operators to maintain transparency & quality of information available to SMEs.

Switching

Our research suggests that the level of competition in the SME market is encouraging SMEs to switch broadband, for example, in significant proportions. A recent, very robust BT study found that 28% of businesses with fewer than 150 employees had switched broadband provider in the last year, largely driven by a vibrant market where they were attracted by offers rather than being pushed by dissatisfaction with their current provider. Nearly three-quarter switched for a 'better offer'. Whilst our research shows that a number of factors are important to the business customer, it is nearly always price that carries the most weight. The most popular reasons were to save money or get a faster or more reliable connection. Switching for better customer service is a less significant reason, and switching for a TV package is cited by very few.

In the experience of BT Business and BT Global Services, the main non-price factors valued by customers are:

- Performance: supplier network latency and where appropriate (e.g. particularly for finance customers), extent of intra data centre connectivity that can be provided;
- Reliability: supplier network availability, resilience, repair times and associated SLA/SLGs;
- Management capability: fully managed service from a trusted supplier;
- Financial stability of supplier;
- Supplier's reputation;
- Nature of existing relationship between customer and supplier; and
- Breadth of supplier portfolio of other services and the ability to add security or application assurance, etc.

Those not planning to switch suppliers are often happy with what they have, and there does not appear to be much difference between BT customers and customers of other service providers. Recent research on businesses not intending to switch revealed that

- 54% are happy with their current services;
- 38% felt they were getting a good deal already;
- 21% thought it was too much 'hassle';
- 8% thought it was too much risk.