BT's response to Ofcom's consultation document

"Review of the wholesale local access market

Consultation on market definition, market power determinations and remedies"

1st June 2010

BT welcomes comments on the content of this document, which is available electronically at http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Consultativeresponses/Ofcom/index.htm

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Foreword

This is an important consultation with major implications for the UK's telecommunications infrastructure. It underpins the future of next generation access for UK plc and raises major public policy as well as regulatory issues. BT believes there are some key underlying questions to be addressed:

- How can the regulatory certainty needed to encourage investment best be provided?
- What are the next generation broadband products that retail and wholesale customers actually want? And which will best encourage take-up of new services?
- How can we achieve a competitive framework for the UK based on genuine open access provided by all industry players?

It is therefore critical that Ofcom gets the balance right, maintaining incentives for efficient investment whilst supporting competition at an appropriate and sustainable level in the value chain in order to maximise consumer benefits.

This review follows Ofcom's extensive NGA policy consultations. Given those consultations, it is appropriate that Ofcom's policy conclusions in this document show continuity; major infrastructure investment requires a clear regulatory framework and policy certainty. BT has taken the decision to invest significantly in the future and faces real risk, given the high level of demand uncertainty as high-bandwidth applications for consumers and businesses are only now starting to emerge, and the need to address a large part of the country with uncertain topology.

In these discussions, customer needs should be paramount. NGA networks should support ease of switching for end-users and genuine open access for a range of wholesale providers. Effective consumer choice requires all companies to open up their networks in the same way that BT does. And the challenges posed in bringing a range of competitive high-speed services to as many consumers as possible, and the level of NGA investment required to do so, suggest that this is too important to be left solely to traditional regulatory approaches which focus only on the incumbent. Reciprocal regulatory approaches which share obligations across all NGA providers are therefore needed.

This is not a theoretical debate: BT wants fibre to be a success story for the UK with high investment and high industry and end-user take-up. We welcome Ofcom establishing the right framework to drive this forward.

1. Executive Summary

- This consultation underpins both current and next generation access and hence the shape of the UK broadband market going forward. In particular, it is the first market review that has formally considered fibre. In this response, we focus on the following:
    - The importance of the 'active' (virtual unbundled) product as the basis for wholesale competition over fibre;
    - The role that 'passive' infrastructure access, including duct and pole sharing, may play in relation to NGA roll-out;
    - The need for 'reciprocal' regulation on an open-access basis to ensure consumer choice for NGA services; and
    - The importance of continuing to support LLU (both MPF and SMPF) as the basis for competition in copper-based broadband services.
- We believe the key regulatory issue for fibre concerns the nature of the wholesale products to be offered to allow effective competition to develop. What is important is that the wholesale remedy is offered at the deepest, economically-sustainable point in the network; supports downstream competition and hence consumer choice; and offers sufficient scope for innovation and differentiation by communications providers. This has tended to become a rather theoretical debate about the respective merits of 'active' versus 'passive' remedies but the reality is that a range of options exist – BT already supports wholesale competition at a number of different levels.
- On this basis, BT agrees with Ofcom that an appropriate active product should be considered the primary upstream fibre remedy in the WLA market. Ofcom's choice of the term Virtual Unbundled Local Access (VULA) underlines the fact that the active product is the fibre equivalent of LLU in terms of the economics of reach and handover and the scope for downstream innovation and differentiation. Ofcom's analysis, including the external studies it has commissioned, demonstrates the challenging economics of building a competitive framework based on passive remedies and our own studies support this.
- Moreover, as Ofcom indicates, the VULA product will evolve over time enabled by new technologies but BT believes Openreach's active product, Generic Ethernet Access (GEA), is already well matched with Ofcom's suggested VULA characteristics. GEA is already available to industry on a fully-equivalent basis and Openreach is committed to continuing to work with its customers on future requirements and on a transparent development process and publication of the future product roadmap. This review is also an opportunity for Ofcom

to define ease of switching between CPs as an additional required VULA characteristic. The GEA product is designed to support a multi-CP model, facilitating downstream competition and consumer choice, similar to that which exists today on voice and broadband. Ultimately, it is the impact on the end-user which must be given due consideration in evaluating the desirable characteristics of wholesale remedies.

- In line with these conclusions, Ofcom's proposed SMP conditions for the VULA product generally appear reasonable and in advance of such conditions being applied, Openreach already offers virtual unbundling with its GEA product offered on an EoI basis. Pricing flexibility for VULA is both appropriate and desirable whilst fibre is deployed as an overlay to existing copper and Ofcom's generally pragmatic approach to the pricing and specification of VULA is therefore helpful.

- Whilst supporting the active product as the primary regulatory remedy for NGA, Ofcom also considers in detail the role that passive remedies could play to complement this. The major change from Ofcom's previously policy conclusions is the requirement to offer Physical Infrastructure Access (PIA), that is, duct and pole sharing. BT has already publicly stated that it is willing to offer PIA, although we do not believe it is a 'silver bullet' for NGA deployment. Openreach has already begun to engage industry and has announced three workshops during June and July to discuss product requirements. We agree with Ofcom's decision not to propose fibre unbundling ('dark fibre') as a remedy as this would jeopardise the overall industry case for investment in NGA. BT is happy to support the combination of VULA and PIA, together with Functional Separation, which we believe fully addresses competition issues for NGA while providing BT and others with the basis for continued efficient investment leading to maximum consumer benefits.

- Underpinning Ofcom's conclusions on the fibre remedies required is the assessment that, apart from in Hull, BT has SMP nationally. This assessment ignores the position of Virgin Media, which has significant market share within its own footprint and NGA roll-out and a significantly higher take-up than BT's, but without any wholesale obligations (either to provide an active fibre product or offer PIA). There is also the position of new-build sites where other operators own the fibre infrastructure; in these instances, Ofcom has at least indicated a policy expectation that some form of wholesale access should be provided but this should be made much stronger. We believe Ofcom should properly address this issue in both market definitions and SMP remedies.

- We believe it is in the interests of UK consumers and businesses that this regulatory asymmetry be addressed at an early stage in the life-cycle of fibre deployments in order to avoid vertically-integrated 'islands' or local monopolies which preclude effective competition and deny consumer choice. For that reason, we welcome Ofcom highlighting the change in the EU Framework Directive (to be implemented in UK legislation during 2011) which will enable national regulators and/or member states to mandate reciprocal access. We look forward to Ofcom being clearer in its statement as to how it might use this revised legal instrument. Ofcom should also actively examine other mechanisms available under both the Communications Act and the EU framework.

- Because we believe strongly in the principle of open access set out above, BT's PIA offer will include terms and conditions that require reciprocity and downstream wholesale access in order to ensure there is a competitive market which maximises consumer choice. This is a pro-competitive, pro-consumer approach.

- Beyond this, BT also believes that the Government and Ofcom should proactively pursue the opening up of other utilities' duct. This is in line with the new Government's stated intent (in '*The Coalition: our programme for government'* to 'ensure that BT and other infrastructure providers allow the use of their assets to deliver [superfast] broadband'. Again, this should be on a basis that facilitates open access and downstream competition. Ofcom should, at the very least, carry out at a survey of Virgin Media's ducts to assess their suitability for sharing.

- Although the major focus of Ofcom's document concerns next generation access, it is important not to forget the continuing importance of current generation broadband underpinned by the success of LLU (both MPF and SMPF). The macro-economic environment has worsened considerably in the last few years but investment in communications infrastructure holds the key to the future economic success of the UK. LLU has been, and continues to be, a major part of that investment. Since March 2009 the number of unbundled lines has grown from 5.67m to 6.70m and investment in LLU continues apace even in the knowledge that BT has significant investment plans for next generation access and others, such as Virgin, also plan to invest in NGA networks. This shows that CPs continue to believe there is value in LLU, even whilst the longer-term focus for the industry shifts to fibre.

- This success story reflects the fact that Openreach's current copper and other wholesale prices are among the lowest in Europe. The substantial and consistent improvements in quality and service delivery by Openreach have equally gone from strength to strength. In the four years since the creation of Openreach, the UK has developed into one of the most diverse and competitive communications markets in the world with among the lowest prices and widest choice of provider.

- We believe that Ofcom should build on this success story and take the opportunity to bring remedies for LLU into line with those for WLR. In particular, Ofcom should align price notification periods, reducing them for LLU from 90 to 28 days. Price regulation should also be removed on LLU service levels beyond the base level. Such measures will allow

Openreach to develop innovative pricing approaches and enhanced services to support CP investment in both LLU and WLR-based services. We also believe that Ofcom should remove the prohibition linking forecast accuracy and Service Level Guarantees and that there is no reason to formalise the current set of KPIs as a minimum requirements.

- There are also important considerations affecting LLU relating to the next set of charge controls, which will be the subject of a subsequent consultation. It is important at the outset, though, to stress the importance of a charge control formula that allows Openreach to fully recover its efficiently-incurred costs and sends the correct signals for investment and the migration to new technologies. It is essential that Ofcom puts in place appropriate measures that continue to bring prices into line with cost, with cost reflective pricing being achieved by 2012.

- In summary, this is a hugely important market review but it is more than just an academic discussion about economic principles and regulatory rules: it is about the reality of the broadband future of the UK. This market review gives Ofcom the opportunity to set the right framework to drive forward current and future broadband access services and in particular help to make fibre a success story for the UK with high investment and high end-user and industry take-up. As our investment plans demonstrate, BT is fully committed to playing its part.

2. Introduction

2.1 Strategic context for this market review

This is an important consultation with major implications for competition and investment. It is no exaggeration to say that this underpins the future of broadband for UK plc and hence raises major public policy as well as regulatory issues. It is therefore critical that Ofcom gets the balance right, maintaining incentives for efficient investment whilst facilitating competition at an appropriate and sustainable level in the value chain so as, overall, to maximise potential consumer benefits.

BT believes that the main drivers underpinning the review are:

- to promote an open and competitive framework allowing equivalent access to BT's NGA network ;
- to enable additional NGA investment by parties other than BT to take place ; and
- to maintain the successful competitive framework for current generation broadband.

These are all valid policy objectives and it is important to bear them in mind when considering the nature (and detail) of the remedies mandated; remedies are not 'ends in themselves'. They need to support these policy objectives and be viable and effective solutions over the next review period. A key test must be whether the remedies introduced in respect of NGA actually stimulate new, incremental investment by other parties on an **open access** basis without reducing BT's ability and incentive to invest in NGA.

This needs to be set in a context where copper-based infrastructure remains a fundamentally important element of the UK network and needs to be maintained with appropriate levels of investment whilst also allowing sufficient flexibility, both operational and commercial, to consider the major challenges of an eventual transition to fibre.

This is the first market review that has formally considered fibre, although obviously this follows on from Ofcom's extensive NGA policy consultations. Given those consultations, it is appropriate that Ofcom's policy conclusions in this document show continuity: the size and timescales of investments required demands regulatory certainty. As Ofcom indicates, a forward looking approach is particularly relevant because the next few years will represent the early roll-out period for NGA networks. BT also agrees with Ofcom that a flexible approach at this stage of NGA deployment is required, particularly given the level of demand uncertainty. BT has taken the decision to invest significantly in the future, but high-bandwidth applications for business and consumers are still emerging. As Ofcom recognises, considerable uncertainty remains regarding the range of services that will be provided over super-fast broadband and customers' willingness to pay for them, and hence the extent to which demand will actually materialise. BT will also be rolling out NGA to a large part of the country with uncertain network topologies so supply-side risks also exist.

Consideration of the role of regulation needs to be set in the context of the commercial deployments being made, primarily by both BT and Virgin Media. BT announced in July 2008 that it planned to invest £1.5bn to pass 10m homes (or 40% of the country) by 2012. We have recently announced that, on the basis of there being an acceptable environment for investment, we see the potential to roll out fibre to around two-thirds of the UK by 2015. This will take our total fibre investment to £2.5bn. Of these homes, 75% are expected to be fibre-to-the cabinet (FFTC) and 25% fibre-to-the premises (FFTP). By summer 2010, BT will have passed 1.5m homes with FTTC and our FTTP trials will be well-advanced. This is both a significant achievement and a challenge going forward and emphasises the need for a supportive regulatory regime.

As part of its general duties under section 3 of the Communications Act, Ofcom should have regard to *"the desirability of encouraging investment and innovation in relevant markets"* and *"the desirability of promoting competition in relevant markets".* Therefore, it is important that regulation helps rather than hinders investment as far as possible, with 'contestability' introduced such that it both facilitates scale NGA deployment and effective and sustainable competition. It is also important that a vibrant downstream competitive market is supported with consumer choice and ease of switching.

BT's and Virgin Media's current investment plans do not cover the whole of the UK and, as Ofcom recognises, there will be some parts of the UK where NGA deployment will not be commercially-viable without public sector support. We look forward to proposals from the new Government to address this but it is important that any such interventions are appropriately targeted so as to avoid the use of public funds in areas where private sector investment is commercially viable or is likely to become so in the near future.

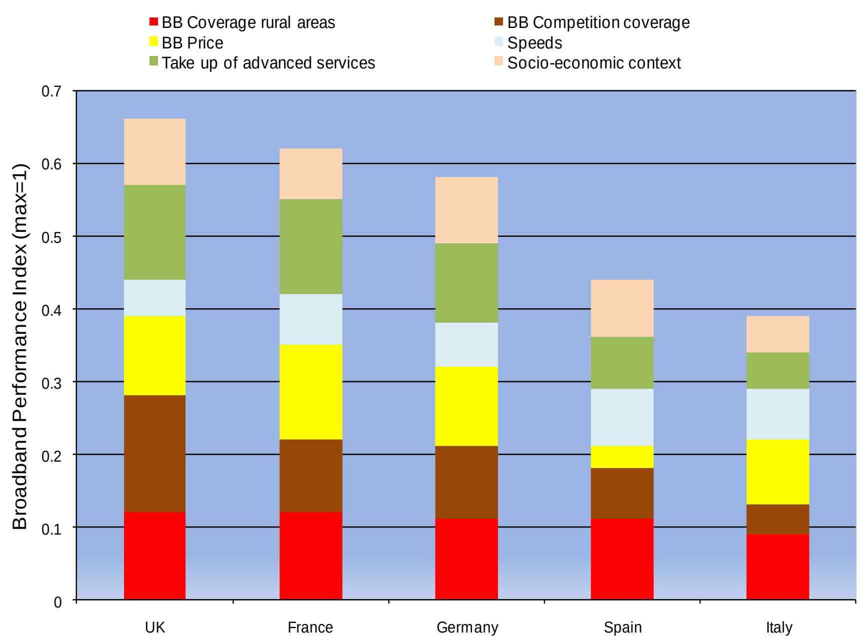
More generally, the challenges posed in bringing a range of competitive high-speed services to as many consumers as possible, and the level of NGA investment required to do so, suggest that it is too important to be left solely to traditional SMP-based regulation which focuses only on the assets of one market player, generally the current incumbent. For that reason, we welcome Ofcom highlighting the change in the EU Framework Directive (to be implemented in UK legislation during 2011) which will enable national regulators and/or member states to mandate access to non-SMP operators' passive access infrastructure. We look forward to engaging with Ofcom and Government as to how this provision might be used in practice to support consumer choice. We would welcome clarity from Ofcom in its statement as to how it might use this revised regulatory tool. Ofcom should also actively examine other mechanisms available under both the Communications Act and the EU framework.

2.2 Market developments since the 2004 WLA market review

Aside from the developments in fibre described above, Ofcom correctly draws out the UK success story in broadband penetration and take-up built on the continued growth of LLU lines (both MPF and SMPF plus WLR).

There has been a huge expansion of services delivered over fixed lines due to the growth of broadband; currently 96% of internet connections are broadband. The success of Broadband has been underpinned by the unprecedented take up of LLU which has in turn been facilitated by the availability, high quality and low prices of Openreach's copper and wholesale products, which are among the lowest in Europe. Figure 1 below is extracted from *The European Commission's recent i2010 Information Society Report 2009 – Benchmarking i2010: Trends and main achievements* [1] and illustrates the strength of the UK broadband market.

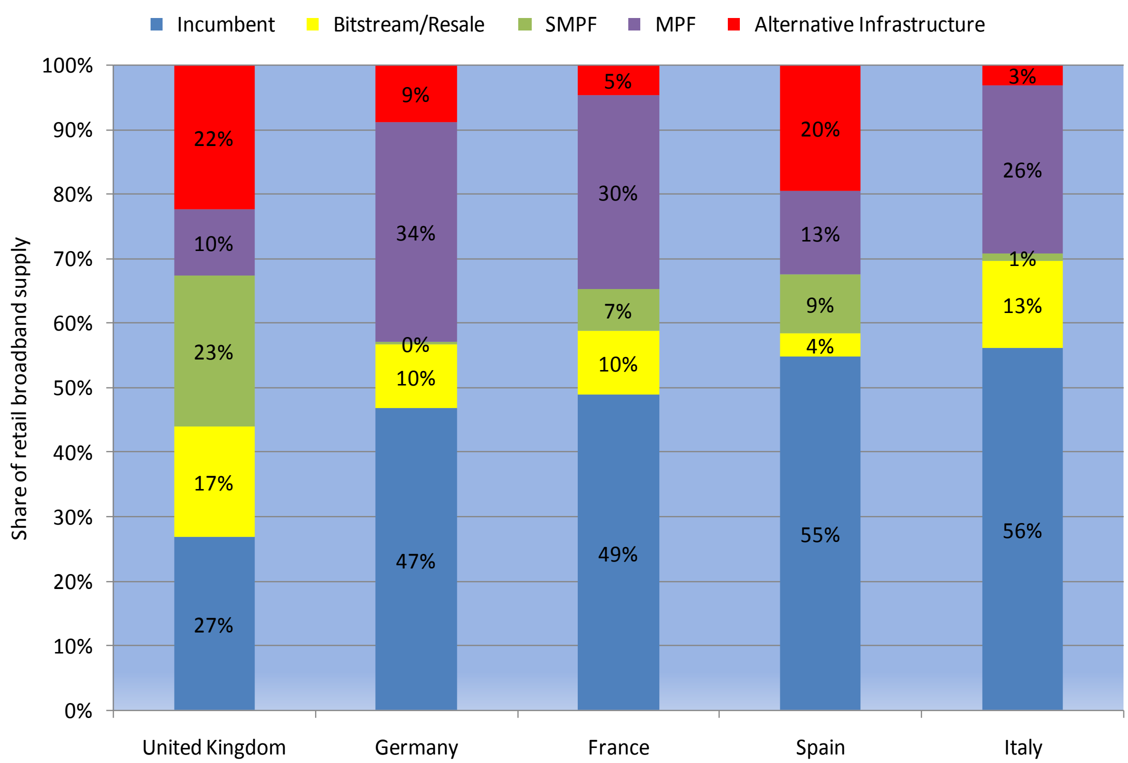
Fig. 1 The UK Broadband market is performing better than EU comparators



Development of the retail market has led to consolidation resulting in a smaller number of CPs accounting for the majority of LLU demand, although we believe that smaller CPs continue to offer consumers important benefits in terms of innovation and choice. Additionally, as Ofcom indicates, since the last WLA market review Virgin Media has been created following the merger of ntl and Telewest. This new entity has growing market power and, as set out later in this response, we believe Ofcom underestimate this in its approach to the analysis of SMP. Figure 2 illustrates the competitive effect of these market developments.

[1] SEC(2009) 1103

Fig. 2 The UK Broadband market is much more competitive than EU comparators



Source: ECTA Broadband Scorecard, March 2010

2.3 A forward look at market developments

We agree Ofcom's view that this market review should provide certainty over the next four years. Given the scale of investment and the long pay-back periods for NGA investment, this is the minimum period in order to minimise uncertainty. This is also important in terms of setting the framework for the forthcoming review of the existing copper-based charge controls.

While we agree with Ofcom that market definitions are unlikely to materially change over the next four years, it is important that Ofcom's approach in this review is sufficiently forward-looking and reflects the market power of other infrastructure providers, in both 'greenfield' and 'brownfield' scenarios.

2.4 Structure of this response

The next section considers Ofcom's approach to market definitions and market power. Section 4 looks at the proposed regulatory remedies and Section 5 provides answers to the specific questions posed by Ofcom.

3. Market Definition and Market Power

3.1 Market Definition

General comments

Local access raises particular challenges in defining markets on a technology-neutral basis. The inclusion of fibre-based services introduces some specific issues given that, although the same general principles apply to all forms of local access, technology differences inevitably drive differences in the way that wholesale products can be configured and how these are viewed for the purpose of market definition and analysis.

There has been considerable debate about these issues at EU level over recent years as both the Commission and the then European Regulators Group sought to provide appropriate guidance to national regulators. Much of this has centred on where NGA services fall in relation to the Commission's markets 4 and 5 (Ofcom's WLA and WBA markets). As the Commission's Explanatory Memorandum on Markets states, and Ofcom points out, the market definition exercise of the market analysis *'is not an end in itself, but a means to an end'*. Market definition is a tool to aid the assessment of whether end users of a product are protected by effective competition and thus whether there is a requirement for *ex ante* regulation. This means that market definitions should be consistent with the choice of appropriate regulatory remedies and not driven by overly-theoretical market definitions.

NGA also poses challenges in terms of anticipating the future. It may be appropriate to consider NGA services currently being in the same market as current-generation copper access (CGA) services given the difficulty in defining an appropriate break in the chain of substitution and whilst fibre is generally provided as an overlay to copper. However, this definition may not hold in the future as NGA services develop with higher speeds and new end-user applications emerge which cannot be offered over CGA.

We discuss further below considerations about the definition of geographic markets, where we are not of the view that NGA can be treated in exactly the same way as CGA. BT does not believe that WLA is unambiguously a national market given that we face different competitive conditions, including different levels of pricing constraints, in different parts of the UK. There is the further issue around targeted new build by existing or new CPs and/or though the use of public subsidy. BT is also faced with different costs of supply in different geographies and geotypes and hence it is important that market definitions and/or remedies are sufficiently flexible to reflect such conditions. Clearly, this also affects assessments of market power, and these need to be kept under review as market definitions evolve.

Wholesale product market definition

Up to now the existing market definition for WLA was well understood, being based on analysis of a pre-existing copper network with a largely ubiquitous network design. Individual copper loops could be identified and physically unbundled between local exchange and end-user, and the economics of such unbundling, although challenging, were understood and supported the significant roll-out of exchange based LLU.

This is not the case for new fibre access networks in the UK. Significantly, they (largely) do not yet exist; they do not have the same physical capability to be unbundled as copper access; and the economics of investment (and hence the economics of physical unbundling) are not the same. Given the expected levels of network innovation in the WLA market over the next review period, the relevant wholesale economic market cannot now be strictly limited to physical elements.

An access network based on Ethernet technology (and in particular GPON) introduces a new type of virtual local loop and a new opportunity for electronic unbundling which reduces the significant levels of manual intervention required by CPs and Openreach. This opportunity for operational efficiency is a significant driver underpinning the investment, and a significant benefit to end-users during times of migration and service upgrade. Ofcom's concept of Virtual Unbundled Local Access (VULA) now captures the characteristics of physically unbundled copper access such as LLU and translates these into a fibre world whilst continuing to offer CPs comparable scope for differentiation and innovation.

As Ofcom states, the relevant key characteristics that a virtually unbundled product would need to replicate in a suitable way to be considered to fall within the WLA market are as follows:

- Localness
- Minimum functionality incorporated
- Service agnostic
- Dedicated capacity

These characteristics summarise important aspects of the currently mandated copper-based WLA products, LLU and SLU, although, as recognised, physically unbundled copper loops are unable to deliver assured bandwidth with the reliability and capacity of a fibre based service. Such characteristics can also be met by VULA type products, for example in the way that they replicate the local handover characteristics of LLU in an NGA environment and can provide a dedicated and reliable Ethernet virtual circuit (VLAN) into the home which can then be used and controlled by a CP to provide whatever services it chooses, be they voice, data, video based (or of course any combination). It is important to distinguish VULA from the traditional IP-based bitstream product proper to the WBA market, which does not aim to meet all these criteria; IP being a higher layer protocol than Ethernet and with handover typically taking place at points of greater aggregation in the network.

In relation to local access substitutes, BT agrees that cable-based local access is in the same product market as loop-based local access and that this definition should also currently include fibre-based local access, although, as noted above, while NGA and CGA services might be in the same market now this definition may not hold in the future as NGA services develop. We agree that mobile, fixed wireless access and satellite cannot yet be included in the product market as these technologies do not offer the same functionality as fixed local access. It should be noted, however, that mobile products do act to constrain BT's prices to a degree and hence mitigate BT's SMP even if they cannot yet be viewed as full substitutes.

BT agrees that it is appropriate to define a single WLA market for supply to both residential and business customers although we note that there may be some important product distinctions, such as service levels. BT supports a single WLA market for both customer types on the basis that these distinctions will not be inhibited by the market boundary proposed.

Wholesale geographic market definition

In relation to the question of whether there is a single geographic market (excluding Hull), BT acknowledges that it is difficult to draw firm conclusions about the level of differentiation across different geographic areas. The growth of cable as well as the rollout of NGA services may however lead to market fragmentation by geography. In these circumstances it may be that Ofcom could take a sub-national approach, along the lines adopted in the Wholesale Broadband Access review. While BT does not believe such an approach is necessary today, this is an area in which Ofcom may need future flexibility as geographic differences become more pronounced.

The finding of a national WLA market has seemingly been based on the existence of a common pricing constraint. Ofcom's conclusion is that, "*a common pricing constraint would exist in the WLA market and that a national market (excluding Hull) can be defined on this basis."* This is on the basis that Ofcom considers that, in the assumed absence of SMP regulation, BT would choose to offer a uniform price were wholesale access products to be offered voluntarily. For example, in paragraph 3.185 Ofcom concludes that,

"To the extent that [wholesale] supply is voluntary and BT makes WLA generally available then a requirement for the retail price to be geographically uniform will tend to be reflected in a price for WLA which is also geographically uniform."

This rather seems to be building hypothesis on hypothesis, in this case that if (i) BT chooses a uniform retail price throughout the UK (say for super-fast broadband) and (ii) it also chooses certain retail partners/distributors to use alongside its retail arm, then (iii) when providing wholesale inputs to those other distributors it will 'tend to' provide them with uniform prices throughout the UK. This reasoning might be correct in the sense of being a hypothesis that is 'more likely than not' to be right, but it rather falls short of providing a concrete economic basis for a national market definition.

Ofcom notes that, *"where BT has voluntarily introduced local pricing it has done so in response to fairly intense competition from multiple alternative operators. BT has not introduced local pricing in response to more modest levels of competition."* However, where BT has been subject to what Ofcom describes as more modest levels of competition, it has tended to be regulated and thus subject to requirements not to discriminate. This means that de-averaging prices has often required a regulatory justification, such as that provided for WBA. In some cases, this hurdle will have discouraged seeking normal commercial flexibility (for example, if information on cost variations by geography would be expensive to obtain). It is also the case that Openreach is a relatively new business and was set up on the basis that it provides a 'bottleneck' service throughout the UK. In such circumstances, the setting of prices which are varied according to the degree of competition has not been a priority. Considerations such as these have also tended to create an expectation that BT offers uniform prices throughout the UK. Even non-regulated services will sometimes follow uniform pricing in order that portfolio relativities are maintained. Whilst therefore accepting that past behaviour is a guide to likely future behaviour, it must be recognised that this behaviour has not been in the absence of regulation, nor is it necessarily an accurate guide as to future approaches to pricing.

BT's geographical market is not appropriate for other CPs

Even more fundamentally than this, there is no recognition in the consultation document that market definition needs to be related to the specific issue under consideration. The OFT Guidelines on Market Definition uses the term 'focal area' to refer to an area under investigation in which the 'focal product' is sold. This focal area will not always be the same when the focal product is supplied by BT or by other CPs and so the relevant market will not necessarily be the same. As is widely known, market definition depends upon the starting point of the analysis and starting from a consideration of the need for *ex-ante* obligations on BT is one such starting point, but starting from another point (for which there is an alternative focal area) may lead to a different definition.

Even if Ofcom is right that BT is likely to adopt common prices across its area, and hence that the market is national in character for BT, this does not imply that it is also national for other CPs. This issue is alluded to by Ofcom where it states that, "*it is important to recognise that Virgin Media is present in the market and that its presence (and any corresponding competitive constraints arising from its presence) is on a sub-national basis, i.e., its cable footprint.*

Therefore, while we consider that the market is national in scope, it nevertheless exhibits local characteristics""[2]

It is therefore relevant to ask when this issue is likely to be important, and this depends upon the overlap in the footprints of suppliers. Where the overlap is reasonably large (so that suppliers tend to be in the same areas as each other) then there may not be a large difference between taking a national view (based on Ofcom's premise that BT will act on a uniform basis) as opposed to a more targeted view. But this cannot be relied upon to always be the case.

For example, were BT not to offer NGA in a certain area, but another supplier were present, then the use of a national market definition would suggest that BT had market power (and regulatory obligations) in an area where it has no customers (and no fibre) infrastructure. It would also mean that a supplier who has perhaps 100% of a local market would not have market power and no corresponding regulatory obligations. Such an illogical situation is possible, especially if Ofcom uses a market definition which might be relevant in considering the imposition of *ex-ante* remedies on BT but applies this to an operator with a very different operating footprint to BT.

Therefore we cannot agree that there are (emphasis added) "*sound economic reasons to be of the view that **the market** would be national in scope*." It might be more reasonable to state that, "in imposing SMP remedies on BT, Ofcom consider [on the basis of its hypotheses] that BT's position should be viewed on a national basis". This would not then preclude Ofcom from considering local markets as the need arises from time to time, for example to ensure that pockets of local monopoly do not arise in the UK.

In particular, this would provide Ofcom with an opportunity to define 'New Build' as a separate part of the WLA market. Such a construct could be helpful in that this would provide Ofcom with the necessary framework to then assess the level of market power operators have in new build areas and to mandate wholesale access remedies should that be proportionate and appropriate. The presumption would be that whoever owned the telecoms infrastructure in each new build area would have SMP. This would be a practical approach for Ofcom to ensure that its previous New Build guidance and the 'expectations' set out in paragraph 8.77 of the consultation are applied in a consistent and fair way to all new build developers and CPs deploying access networks. This is in contrast to the current proposals which exclude all developers and CPs except BT (and KCOM in Hull) from specific access remedies unless Ofcom decides to carry out localised market reviews. It would prevent the illogical result that BT has SMP (and hence regulatory obligations) in new build areas where it does not own any assets and cannot readily provide service.

[2] Paragraph 3.195

3.2. Market Power

Ofcom's assessment of SMP follows directly from its approach to market definition. On the basis that the WLA market is a national market that comprises both copper and fibre local access, BT's share of customer connections means it is found to have SMP nationally (except in Hull).

As indicated above, and in common with our views on the Wholesale Broadband Access market review, BT has concerns about the methodology used to assess the market and the designation of BT having SMP in all parts of the UK. The presence of cable and other new-build providers, combined with the constraining effect of mobile and BT's obligation to supply LLU in uneconomic areas, all give rise to an exaggerated view of BT's actual market strength if only national market shares are considered.

Firstly, market power should be assessed on what the market would look like in the absence of regulation. Ofcom fails to assess BT's market power absent its obligations to serve uneconomic customers (as required under the USO) or to provide LLU. As Ofcom acknowledges, the market share figures are not adjusted to reflect the fact that Virgin Media would have won market share at the expense of BT in the absence of significant LLU take up.

Secondly, as set out above, the methodology used to define a national geographic market is based on BT's footprint and hence understates Virgin Media's market power in its sizeable footprint. Additionally, there is no allowance for new build by other CPs (or developers) which means BT is assessed to have SMP even where it does not own any access infrastructure. Failure to assess new build providers as having SMP significantly weakens Ofcom's ability to ensure that they comply with Ofcom's stated policy of providing wholesale access on a similar basis to BT.

As regards mobile, while BT agrees with Ofcom that there may be various reasons why some households have taken mobile services, and that the two are not strict functional substitutes for each other, mobile networks cannot be dismissed as irrelevant in assessing the degree of market power. There is also an increasing trend for mobile only households and such trends have a constraining influence on the prices of fixed line services, both for voice and for broadband.

It should also be noted that Ofcom is required to undertake a forward looking assessment of market conditions. In this review, Ofcom appears to have unduly focused on the existing coverage of CPs (e.g. Virgin Media) and assumed that this coverage will not materially change in the future. BT considers that some validation of such material assumptions ought to be provided.

The WLA market includes a wide range of products, both physical and non-physical ('virtual'), so it is also important to consider whether market power findings can apply uniformly to all products in the market. The WLA market includes telecoms civil engineering infrastructure, such as duct and poles, which has led to Ofcom's proposal to mandate access to BT's PIA (Physical Infrastructure Access). However, there will be areas where BT does not have available duct capacity, either because ducts are congested or cables are directly-buried (as indicated in the information previously supplied to Ofcom to support of the Analysys Mason duct and pole survey). In such areas, Virgin Media may have space in its ducts and this is suggested and evidenced by comments made in their 2009 results. Virgin Media reported[3] "*We increased our network footprint by over 100,000 new homes in 2009, and plan to reach a total of 500,000 additional homes by the end of 2012.*" This would extend their footprint to cover over 13m homes in total. They also state that the costs of expansion are not great (£200 per home passed and £500 per home connected) with a comparatively short payback.

To assess market power properly, we therefore believe that Ofcom should, at the very least, carry out at a survey of Virgin Media's ducts and specifically consider the scope for opening them up to third party access. We appreciate that this issue also raises wider questions about the role other providers' civil engineering infrastructure (whether owned by other communications providers or, for example, utilities) can play in supporting NGA roll-out for the benefit of the UK, regardless of SMP findings, and this is discussed further in the next section.

[3] Sources - http://www.digitalspy.co.uk/digitaltv/news/a155648/virgin-to-reach-50000-more-homes.html and http://media.corporate-ir.net/media_files/IROL/13/135485/Virgin_Media_Annual_Report2009.pdf

4. Regulatory Remedies

4.1 Introduction

This section discusses Ofcom's proposed SMP remedies following its assessment of market definitions and market power in the WLA market. We first examine Ofcom's proposals for specific access remedies in relation to NGA and then cover the proposed remedies for copper-based current generation access (CGA). We then look at Ofcom's proposed general access remedies and finally consider potential non-SMP remedies that we believe have a role to play going forward given the need to ensure symmetrical regulation and open access.

4.2. NGA remedies

General comments

The key regulatory issue for fibre concerns the nature of the wholesale products to be offered to allow effective competition to develop. This has tended to become a debate about the respective merits of 'active' versus 'passive' remedies but the reality is that a range of options exist. Most important is that an appropriate wholesale remedy is offered at the deepest, economically-sustainable point in the network and that this remedy supports downstream competition offering consumer choice and sufficient scope for innovation and differentiation by communications providers.

Ofcom's analysis of the options for fibre remedies follows the extensive work carried out in its recent NGA policy consultations. BT considers that Ofcom has carried out a rigorous analysis of the relative merits of active and passive remedies and the role each type of remedy might play in supporting competition and contributing to scale NGA deployment in the UK, including using the appropriate external experts. Ofcom's analysis, including the external studies it has commissioned, demonstrates the challenging economics of competition based on passive remedies; our own studies support this. It is therefore appropriate that Ofcom has confirmed its previous view that VULA, the active product, is likely to be the most cost-effective NGA remedy to support competition, although we do acknowledge that duct and pole sharing may yet have an important complementary role to play. We consider Ofcom's findings in more detail in the sections below.

Virtual Unbundled Local Access (VULA)

BT agrees with Ofcom that an appropriate active product should be considered the primary upstream fibre remedy in the WLA market, and broadly agrees with the criteria specified by Ofcom as desirable characteristics for such a product.

We already believe GEA to be a good match with the VULA concept (as Ofcom have commented) but GEA is a 'real world' version of virtual unbundling and hence we expect to continually need to develop and improve the product moving forwards with the support of our industry customer base, and as demand increases and technology options evolve. Such developments are necessarily subject to cost benefit considerations and represent an important part of an ongoing development and implementation programme which also needs to tie in with other major workstreams such as the delivery of changes to major operational support systems such as EMP; to CP prioritisations of work stacks and to commercial negotiations with hardware vendors. GEA is already available to industry on a fully-equivalent basis and Openreach is committed to continuing to work with its industry customers on future requirements and on a transparent development process and publication of the future product roadmap.

In this respect we were pleased to note the recent very positive comments to investors made by Talk Talk Group, one of Openreach's largest customers, regarding both the flexibility of the GEA product and its fit with their future expansion plans[4]. We have reproduced Slide 14 from their results presentation at Annex A to this document.

Ofcom's choice of the term Virtual Unbundled Local Access (VULA) underlines the fact that the active product is the fibre equivalent of LLU in terms of the economics of reach and handover and the scope for downstream differentiation and innovation. Openreach already offers VULA on an EoI basis, underpinned by BT's Undertakings and Functional Separation model, and Ofcom's proposed SMP conditions generally appear reasonable – although, as explained below, we are concerned with the potential overlap of SMP regulation with BT's Undertakings. Pricing flexibility for VULA is both appropriate and desirable whilst fibre is deployed as an overlay over existing copper and therefore the pricing is constrained by the existing copper portfolio.

As indicated in our previous submissions we have been strong supporters of the active product concept and of virtual unbundling since Openreach first consulted on GEA in relation to the Ebbsfleet new-build development in spring 2007. Openreach and BT Group have also been active participants in Ofcom EALA (Ethernet Active Line Access) workshops and have contributed technical information to support Ofcom's '*Ethernet Active Line Access: Technical Requirements'* final statement which provided much of the groundwork for the preparation of the VULA concept. These workshops complemented Openreach's own extensive consultation with its CP customers and helped inform the development of GEA. This consultation continues today through Openreach's NGA Forum, bi-lateral customer meetings and most prominently through the GEA Trialist Working Group (TWG).

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[4] The full corporate presentation can be found at: http://www.talktalkgroup.com/investors/presentations/index.html

VULA characteristics

BT broadly agrees with the VULA characteristics outlined by Ofcom and through Openreach have already incorporated them into the GEA product design. However as Ofcom acknowledge super-fast broadband is still a nascent segment of the broadband market, and hence the GEA portfolio can be expected to evolve in line with market developments, and if and when there is increased evidence of demand and/or bandwidth consumption. Such developments could also be expected to incorporate technological options that evolve and/or mature if operationally and commercially viable. As outlined earlier it also needs to be recognised that at any point in time, Openreach needs to make choices about the product features it is reasonable to provide, balancing industry requirements (including reflecting technological maturity) against the need to have a commercially viable product available in the market. We set out in summary below how we see our current alignment:

- *Local Access* - we have specifically designed the network topology to meet the needs of CPs who wish to continue to maintain a large network presence and interconnect on a local basis with NGA.

- *Service Agnostic Access* - as Ofcom discusses, this is a fundamental concept underpinning both GEA and VULA[5]. GEA is an active Ethernet connection at Layer 2 in the OSI framework which allows voice, data, or video services to be carried via a converged access network either as a single virtual channel or separated into multiple virtual channels.

- *Uncontended Access* - As noted by Ofcom this characteristic is primarily about providing dedicated bandwidth to each end-user. This is necessarily achieved in different ways depending on the underlying access technology (ie FTTC or FTTP). GEA as currently deployed is based on specific product options which define prioritised elements of the Ethernet VLAN which might ostensibly be described as uncontended or dedicated access. Additionally, product options are available, depending on underlying technology, which also allow users to benefit from Peak Information Rate (PIR) variants. These enable a dynamic and rapid allocation of network capacity when users require additional bandwidth. In order to support such dedicated capacity and flexible bandwidth options the NGA programme continues to review underlying infrastructure requirements on an ongoing basis to dimension capacity in line with take-up and network demand.

[5] Ofcom define ‘service agnostic ‘at 3.135 of their consultation document as meaning the product should not be confined to supporting particular downstream services eg it should be able to support broadband internet access, narrowband voice, symmetric and asymmetric services.

- *Control of Access* - GEA already supports QoS differentiation for different applications such as voice, data and video, and allows access to a selection of control profiles and parameters The current specifications have been agreed with its customer base though wider consultation and in joint working with the TWG. However further work has taken place to identify costs and benefits of additional control levels. Openreach recently reviewed an SOR for additional control requirements from a single CP. However the CP did not wish to pursue the requirements once development costs were identified and discussed.

- *Control of CPE* – We also support the requirement for CPs to control customer premises equipment in the home, subject to technical and commercial feasibility. As indicated below, we do however agree with Ofcom with regards to the non-viability of a 'Wires-only' presentation at this stage

This review is an opportunity for Ofcom to also define ease of switching between CPs as a required VULA characteristic. The GEA product is designed to facilitate downstream competition and consumer choice, similar to the LLU-based competition model. It is important, in evaluating the technical characteristics of upstream remedies such as VULA, to always consider the impact on the end-user.

Openreach is committed to continuing to work with CPs and other stakeholders on future developments of GEA. These include such aspects as multi-cast, voice access (see below), further CP control options, amongst others. Openreach is also fully committed to the ongoing support of the TWG, the NGA Forum and to the continued publication of the GEA Product Roadmap process which set dates and priorities for developments in the public domain in a highly transparent way.

Control of CPE and 'Wires-Only'

As indicated above, we support the requirement for CPs to control customer premises equipment in the home, subject to technical and commercial feasibility. However, as Ofcom indicate in the consultation, technical and operational standards are not currently sufficiently mature to make such options readily implementable, and there is an important need to separate out arguments which relate to control of the CPE from *network management and control of the access element.* For the NGA infrastructure provider, sufficient control and demarcation of the access network is essential to making the access 'next generation' and not just a new *manually maintained* network. Currently Openreach utilises the functionality inherent in an 'active NTE' to terminate the GEA/VULA service in the home and this is an important and integral part of both the FTTC and FTTP VLAN service.

Such network control is essential to enable rapid diagnostics, repair, upgrade, migration and other functions which are ultimately beneficial to all layers in the value chain, be they infrastructure provider, CP or end-user. Openreach has chosen to focus their effort, at this time of large scale investment and rapid development of GEA/VULA to improving these key aspects which underpin the product and the functionality of the access network. However we do not rule out future options which may evolve, if technically and commercially feasible, and which still allow sufficient demarcation and network control and management of the access network. There are five main aspects which summarise our position on this issue:

Technical Immaturity - As indicated by Ofcom, the wires-only technology is immature and the standards are yet to be ratified for VDSL2. As they are both ill defined and limited for FTTP GPON, it is inappropriate to rely on them as a basis for development at this early stage of market development and uptake.

Standard Interface - An active NTE solution offers key important benefits of a stable, consistent interface and a standardised presentation to the CP across both FTTP and FTTC infrastructure, which will be key during the early stages of market development and uptake.

Assurance levels - The Openreach active NTE brings assurance of service underpinning future high bandwidth services with a clear network demarcation, offering significant benefits at this early market development stage.

Minimal Commercial Difference - In our view there would be only minor changes to the Openreach charges for a GEA wires-only product compared with the current product. A single operational model at this point in time across FTTC and FTTP minimises operational complexity and costs giving key rapid benefits for CPs and their end-users.

Consumer Choice & Competition - An active NTE promotes a key competitive principle through retaining the end user's current choice of two (or more) CPs in the home (e.g. a voice CP and a different broadband CP). It does this through reducing the costs and complexity of switching between CPs in migration scenarios whilst maintaining the ability of two (or more) CPs to access Ethernet ports in the home to provide services which can be differentiated both in terms of network service and CPE. The plan[6] to develop a CP controlled ATA or "Open ATA" voice solution further harnesses the strengths of this approach and supports the potential for our CP customers to further differentiate their voice service offerings.

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[6] Which Openreach has recently confirmed in the revised CPCA Product Proposals and Consultation Feedback documents published in May 2010. Please see http://www.openreach.co.uk/orpg/news/productbriefings/nga/downloads/2010/briefing_nga013_10.pdf.

Multi-port presentation

Linked to the above points Ofcom also discusses 'Multi-port presentation of GEA' in a broader sense in the consultation document. Ofcom correctly identifies the fundamental benefit of a multi-port approach as allowing a second CP to access the home without the need for an *additional physical fibre* connection, and that at this time the debate is focussed on the future specification of the FTTP service. However it is important to note that the existing copper model is a two CP model - a significant percentage of end-users already have service from two different CPs in their home and if this remains material it will become a migration scenario which will need to be addressed, in due course, both operationally and commercially for FTTP.

For FTTC the situation is less complicated as Openreach has already produced both MPF and WLR variants of the GEA product to accommodate such end-user CP choice, and, as identified by Ofcom, FTTC does not have such a clear capability for further sharing of very high bandwidth as an all-fibre FTTP connection provides. It would seem incongruous that there could be a regulatory and commercial model which allows copper access to be shared between CPs (and which can also be implemented with FTTC) if an access medium which is specifically designed and capable of being shared (i.e. FTTP using GPON) was restricted in some way by regulation or an intermediate CP.

We agree with many of the points Ofcom makes on the need for a master socket for NGA services. This is essentially the basis of our argument for a clear demarcation point and an active NTE/ONT for the access network (as referenced above). As Ofcom identifies, the question then becomes what is the preferred specification for the master socket and how many ports should it have? In our view a single physical port is only likely to be able to support a single CP in the home at any one time. CP feedback on this point was very clear and has indicated that they would be unlikely to sell services into a home if such access was through another CP's CPE device. If it is at all likely that an end-user might choose a second CP (for voice/broadband or a business line for example) then network management to a second physical port is the preferred engineering (and commercial) solution all things being equal. Importantly, and informatively, international experience in this area both in FTTP implementation and in ONT/NTE design has already led to the 'standard' low cost ONT being a multi-port model.

Ofcom also raises concerns around the possible 'reduction in functionality' to individual ports on a multi-port ONT, and on the pricing of such services. These are areas too detailed to cover in this submission but we would be pleased to provide further details to Ofcom if required. However, in summary for FTTP services:

- We are still at an early stage of deployment for FTTP and clearly with uncertain costs and demand our GPON network and product specifications have been chosen to represent a significant upgrade to the existing copper network, and have been consulted on and debated with CPs through the TWG and NGA forums.

- We have currently agreed on two basic downstream variants of the FTTP product (at 40Mb/s and 100Mb/s). Other variants on upstream rates are also to be expected. The products have prioritised rates and peak information rates specified as part of their technical specifications.
- The network is planned and built to support these technical specifications and expected capacity for second lines, possible higher speed upgrades, growth, spare capacity, etc as with any normal network design. Hence there will be no 'reduction in functionality' for second lines/ports from these technical specifications.
- If, as we would hope, such products are in high demand in volume terms or end-users demand much higher bandwidths, we would respond by increasing planning specifications and additional investment. This is of course at the very heart of the risk/reward equation for NGA investment.
- The indicative product prices we have made available are clearly a balance based on expected costs, the expected take-up of all GEA variants and achieve a payback period commensurate with a long-term infrastructure investment.
- We note Ofcom's point regarding the risk that "*gains may simply accrue to BT in the form of higher profits"* at some point in the future if efficiencies gained through the multi-port model are not reflected in end-user tariffs. The reality of the investment case dictates that it is far too early a stage for this to be a material concern. BT through Openreach will need to make significant upfront investment in FTTP before experiencing any such benefits, and, as discussed previously, demand remains highly uncertain. Unless Openreach can deliver input products at a competitive price point, into retail products which are demanded by end-users there will be no opportunity for efficiency savings or an adequate return.

For the record, on FTTC GEA there is capability for CPs to utilise the full line speed. This was agreed with CPs as part of Openreach's product consultation, and was a change request change from an initial product specification which included 'tiered' bandwidth options.

In addition, Openreach will continue to work with CPs to develop a CP-accredited install product for FTTC and a proposed micro-filter trial which addresses many of the issues raised by CPs who have expressed concerns around Openreach's presence in commissioning their service.

Provision of VULA on a Stand-alone basis

We note Ofcom's comments regarding a possible stand-alone variant of VULA. We consider that this is an issue best addressed in detail outside this response through the normal product development process. As with all possible variants and product developments we are open to changes in requirements from customers. These would then be assessed for technical and commercial feasibility and would typically be prioritised through the standard SOR process and, for NGA, also with the TWG members. To the best of our knowledge this has not been a major point of debate in our customer engagement programme so far and we have not received an SOR for such a product. However, in summary, we make the following points:

- In relation to FTTP, Openreach already plan to make a 'GEA only' offering which would appear to meet this requirement. CPs can also choose to take a CPCA option if required.
- In relation to our current FTTC product, the reality is that FTTC GEA requires a copper bearer on which to operate in an analogous way to SMPF and we specifically designed the product to be as flexible as possible and so that it could use both variants of the bearer currently available (WLR and MPF).
- Without agreement on the possible form the product might take or the specific requirements of customers/stakeholders we cannot go into any significant detail in this response other than to clarify that such a variant would still require a copper bearer to carry the service and in broad terms highly similar operational processes to support its provision and ongoing maintenance, upgrade etc. Hence at this stage it would appear to us that product pricing would reflect such similarities.
- Possible variants which assume any significant change to the underlying bearer would necessarily open up a much wider debate about the future of the copper network, fibre cutover scenarios, cost recovery during transition etc and hence could not be dealt with in isolation to that debate.

Relationship between GEA/VULA and downstream services

It is important that there is a clear and consistent boundary between upstream local access products and the development of competition based on these products. We support the intention that GEA/VULA should be sold by Openreach on an equivalent basis, and believe that this would provide a sound basis for both wholesale and retail competition in relevant broadband services.

We also believe that the Openreach products will provide a clear basis for competition in voice services provided over FTTP. As has been announced to CPs, Openreach have decided to focus on an 'open ATA' voice product (also termed 'CP-controlled ATA' or CPCA) rather than the 'WLR-like' VoNGA product, previously consulted upon. CPCA, which will be sold on EoI terms by Openreach pursuant to BT's Undertakings, will offer CPs the option to use their own call servers to develop innovative and differentiated voice services over FTTP.

The supply of CPCA by Openreach on an EoI basis will allow all services downstream of those products to be developed on a commercial basis, without unnecessary regulatory constraint. The regulatory basis on which services downstream of CPCA will be required will be a topic relevant to future Wholesale Narrowband market reviews.

Specific VULA remedies

Pricing

Ofcom's rationale for pricing flexibility on VULA is correct at this stage of market development. As identified the market for super-fast broadband is a nascent section of the broadband market which may develop unpredictably during the forthcoming review period. Customer demand, costs of deployment and future product developments and enhancements are all highly uncertain at this early stage, and as such it is appropriate that a market based pricing framework is adopted. Strict 'cost based' prices using modelling approaches such as LRIC are unlikely to be able to produce a robust framework for investment and would be highly inflexible at this stage in responding to market developments and changes in demand. Moreover, such price regulation also carries a significant risk of chilling investment if prices were set too low or alternatively of stifling customer demand and reducing consumer benefits if prices were set too high.

As Ofcom discusses, broadband services and the competitive pressures from CGA (copper and cable) networks would continue to be available as NGA investment takes place and would continue to exert a market constraint on GEA pricing. Therefore we continue to believe that price regulation on GEA is likely to be disproportionate at this stage for the reasons set out above. Pricing flexibility allows the investor to trial different prices, while relying on the constraints present in the market to protect the interests of consumers. Such flexibility will help support continued investment in the new access network and products.

Even at this early stage there is initial evidence from retail offerings by BT and Virgin that prices for super-fast services will compare favourably with existing broadband offerings. The reality is that unless Openreach can deliver input products at a competitive price point, into products which are demanded by end-users there will no opportunity for future growth, operational savings or an adequate return on investment.

Equivalence of Input (EoI)

BT does, however, have concerns with regard to draft SMP condition FAA11.3 which imposes a regulatory obligation on BT to supply VULA on an 'Equivalence of Inputs' basis, purportedly as a 'variant' of the usual undue discrimination obligation. For the avoidance of doubt, BT and Openreach are fully committed to providing VULA on an EoI basis in accordance with BT's Undertakings and the Functional Separation model for so long as BT has SMP and we are keen to underline that VULA, as the proposed scale upstream remedy, will be provided in this way. However, we are concerned about Ofcom's proposed approach here.

Ofcom states that it is proposing an approach which "*mirrors the EoI requirements set out in the Undertakings*[7]". Whilst BT welcomes Ofcom's proposal of an approach whereby when SMP falls, EoI falls, until such time as that happens, in truth, an SMP obligation such as FAA11.3 would not be a supplementary 'mirror' to the Undertakings commitment, but a complete duplication which would potentially leave BT in a position of double jeopardy.

Furthermore, by Section 87(6) Communications Act 2003, Ofcom's powers to prescribe 'discrimination related' SMP conditions are limited to "*a condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with network access to the relevant network or with the availability of the relevant facilities.*" Paragraph 7.262 of the consultation document is a valiant, but ultimately unsuccessful, effort to shoehorn a complete prohibition on discrimination within the scope of an undue discrimination obligation. EoI – which involves total 'sameness', is, as paragraph 7.262 says, "*a complete prohibition*" on discrimination, and goes far beyond the statutory concept of 'undue discrimination'.

BT would remind Ofcom that to the extent that it is looking for a 'very robust' application of 'undue discrimination', it already has at its disposal the guidance which it issued in November 2005 "*Undue discrimination by SMP providers*[8]". Ofcom made it clear in that guidance that any non-price differences in transaction conditions, offered by a vertically integrated SMP provider in wholesale communications markets will be looked at "*with a presumption that these differences amount to undue discrimination*". The guidance states that non-price differences in transaction conditions could be differences in:

- The functionality of the product supplied
- Timing of provision
- The reliability and efficiency of transactional processes; or
- Availability of information that supports the purchase or supports the use of the product.

Annex 1 to the guidance gives specific examples of non-price differences that may harm competition and these bear similar hallmarks to many of the characteristics of an EoI product.

In conclusion, BT's position is that the existing regulatory approach to undue discrimination which involves a rebuttable presumption that non-sameness is a breach is acceptable and adequate to address Ofcom's concerns, but that an absolute requirement for non-discrimination of the type proposed in draft condition FAA11.3 goes beyond the bounds permitted by the Communications Act.

[7] Consultation document – paragraph 8.67.
[8] http://www.ofcom.org.uk/consult/condocs/undsmp/contraventions/contraventions4.pdf

Physical Infrastructure Access (PIA)

BT has already publicly stated that it is willing to offer PIA, and would expect other infrastructure owners to do the same and provide an open and level playing field for NGA investment in the UK.

As we have expressed elsewhere in this document we are strong supporters of the virtual unbundling approach and believe that the majority of economic analysis and international experience in this area suggests that physical unbundling, at least at this stage of market development, is not a 'silver bullet' for NGA deployment. However, we do accept that where possible we should try to facilitate additional NGA investment in the UK in a way which is open and creates a level playing field for all parties. Openreach will commence its customer engagement in June of this year, significantly before we have a legal obligation to do so, in order to ensure there is a draft reference offer for duct access available by the end of 2010. Initial meetings have already taken place with interested CPs and other stakeholders (such as the BSG), and we have already announced dates for the first three Openreach PIA Working Groups in June and July this year.

It is important that all parties play their part in developing the market in ways which generate additional investment in the UK on a basis which allows for customer choice an open access basis and in a pro-competitive way. Our PIA offer will therefore include terms and conditions that require reciprocity and downstream wholesale access in order to ensure there is a competitive market. We discuss reciprocal regulation in more detail in section 4.6 of this response.

Ofcom's survey of BT's Duct and Pole network

Ofcom has published its survey of BT's Duct and Pole network, carried out by Analysys Mason, alongside this consultation document. We were pleased that Ofcom and Analysys Mason both acknowledged the support that Openreach provided throughout the study (and in previous surveys). In our opinion it is important that policy and expectations of stakeholders are evidence based. We look forward to other owners of duct - both telecoms and utilities - adopting an open approach in the way that Openreach did. As Analysys Mason acknowledges the survey does not in the strictest sense produce a statistically significant result, but nevertheless for us the findings were informative. They support our experience that there is unused capacity in the duct network, but that it is highly variable by geography down to a very granular scale, and particularly on an end-to-end route basis. The survey also highlighted some of the challenges we ourselves face in using the duct and that CPs will experience if carrying out network build.

Ofcom has also recently published a follow up report from Analysys Mason on the operational aspects of duct sharing services, drawing on international case studies. As Ofcom has made clear, this report is intended as a contribution to the product development activities and industry discussions that will take place following the WLA consultation. On that basis, we do not comment on the report in this response, other than noting that while the international learning appears extremely helpful, we believe the specific recommendations need to be left until UK industry is clearer on its approach to the PIA products. We intend to use the Analysys Mason report, along with other studies such as the work by the Broadband Stakeholders Group (BSG) as a basis for informing Openreach's work on capturing customer requirements for PIA in the planned industry workshops described above. In passing, it should also be noted that the lack of international experience on pole-sharing evidenced by the report, supports the suggestion we make as to a possible need for a longer implementation path for this element of the PIA remedy.

PIA key issues

We have reviewed the proposed PIA SMP obligations in some detail and would be happy to discuss these further with Ofcom over the coming months. We highlight below our thoughts on some of the key themes and issues in relation to the proposed obligations.

Scope of Obligation

The rationale behind the PIA obligation is clear - that it should only apply to local access network assets when and where CPs intend to roll-out new NGA network infrastructure. Therefore, we particularly welcome the proposed wording of condition FAA 12.1 which explicitly sets out the permitted use of PIA (i.e. the deployment of broadband access networks serving multiple residential and business customers). This is the basis on which passive remedies have been discussed in policy terms and in the draft EC NGA Recommendation (which prescribes passive access as a possible remedy) and therefore BT agrees that this needs to form the basis of the proposed legal obligation. We fully agree with such an approach and it is on this premise that we will progress the PIA offer.

While not a matter specifically for this review an assessment of whether passive remedies were appropriate for a different economic market (the business connectivity market) was addressed as part of Ofcom's previous Business Connectivity Market Review (BCMR). That review concluded that they were not required and that remedies based on regulated leased line and Ethernet services formed the basis of sustainable competition going forward. BT agrees with these findings and would not consider it appropriate that such market analysis be disregarded and/or investment in competing business networks be undermined by CPs seeking to extend the remit of the NGA PIA obligation

In practice, however, we recognise that there may be some challenges in defining the terms and conditions such that CPs are only able to use the access for this defined purpose, and hence we note for the record that we may need to seek Ofcom guidance or intervention should wilful non-compliance occur, or should a CP subsequently wish to use fibre that it has installed in a BT duct for a non-NGA purpose (for example, a leased line). During both the initial CP engagement phase leading up to the Draft Reference Offer and into the second CP consultation phase we will actively explore options which may help to clearly define the permitted scope of the access provided; for example, we will seek to closely align the reference offer with the limitation of use contained in conditions FAA 12.1 and the definition of PIA contained in condition FAA 12.4 (which limits the relevant infrastructure to that which is located between the Network Termination Point and MDF Sites serving those NTPs).

Anticipated demand

Ofcom recognises that PIA is unlikely to be a silver bullet in relation to the widespread deployment of NGA infrastructure. Therefore, it is likely that demand for PIA will be limited in scope and geography. BT therefore welcomes the approach taken by Ofcom regarding 'industrialisation' of the product. We are committed to producing solutions and processes which are appropriate for the level of committed and underwritten demand, and we will be progressing these as part of our customer consultation programme starting in June 2010.This position is entirely appropriate and accords with the proportionality criterion contained in section 47(2) of the Act. BT will implement PIA in an efficient manner and it is correct that it should not be required to incur potentially significant sums of money for a solution which may have limited demand, at least in the short to medium term.

Implementation Timing

Although the obligation as outlined by Ofcom requires a significant product development and has potentially major operational and commercial implications for BT and Openreach, we have already pro-actively engaged internally in looking at the issues and have also initiated our external engagement well ahead of any legal obligation to do so. On this basis, we feel the timings as proposed in the consultation are not unreasonable and we welcome Ofcom's proposal (in condition FAA 5.5B) to only specify the timing of publication of the draft reference offer in the condition. It is also helpful to us that Ofcom have indicated the need for some flexibility in how specific stages of the development take place, as, given the extent of industry engagement required, Openreach does not fully control such timelines and would not wish to unduly curtail industry debate in order to meet an artificial deadline. The European experience indicates that without the pro-active approach Openreach has initiated, such developments have been shown to take significantly longer than Ofcom's proposed timeline.

Our current plans see us targeting the production of a draft reference offer for duct access as specified by Ofcom at the end of 2010 (i.e. 3 months after Ofcom's final statement). We also note that Ofcom propose an industry consultation period following the draft reference offer, and a subsequent period to allow for productisation. In broad terms we agree with this process but do need to be clear that such target timescales are entirely dependent of the nature and specification of the final PIA products. Products which are closer to the draft reference offer in specification and which require less Openreach resource (including manpower and systems/process developments) in their delivery are much more likely to be achievable (in international terms these types of products are perhaps closest to the French model of duct sharing).

We also aim to progress the simultaneous production of a pole-sharing reference offer, but need to make Ofcom aware that initial investigations are highlighting some significant concerns, including over health and safety and legal liability. Such concerns are not confined to BT alone but to other infrastructure owners who operate joint overhead working. Ofcom will be aware that there is less international experience and learning available in relation to pole-sharing compared to duct. As stated we aim to progress both pole and duct offers as required, but it would be helpful if the wording in condition FAA5.5B (which states a defined date for publication of a pole reference offer) was more flexible and allowed for agreement between Openreach and Ofcom to a later publication date if required. Again we would be pleased to discuss this further if required.

As part of our proactive approach to implementing PIA our aim is to go further than just publishing a draft reference offer but to also to prepare for a small scale trial with interested CPs at or around the time that the draft reference offer is published. Again we intend to begin discussions with CPs and other stakeholders over the coming weeks on this subject and significantly in advance of any obligation to do so.

Office of Telecoms Adjudicator (OTA) and PIA Consultation

We note Ofcom's suggestion that there may be a role for the OTA to play during the consultation phase of PIA development which follows the publication of the draft reference offer. In our view there may be some benefits to this approach given their experience and knowledge of many of the practical issues concerning the access network. It would be important to us, however, that their remit and rules of engagement were clearly defined (e.g. facilitation and practical dispute resolution) and did not stray into areas of policy development or pricing. We think this is achievable.

New Duct/Pole Build and Congested/Blocked Duct and Poles

We recognise that for PIA to be incorporated into a CP's network build programme it will need to address situations where new duct/pole construction is required and/or scenarios where existing passive infrastructure needs to be repaired, enhanced or bypassed in order for it to be usable. We recognise that there will need to be pragmatic solutions to problems such as these and we will be working with CPs and stakeholders as part of our requirements capture process during the summer to establish an acceptable way forward

It is too early in the process to comment in detail on possible solutions before a fuller understanding of the product specification is developed and the respective roles of Openreach, CPs and contractors are defined and understood. However is clear is that there will be a necessity for parties to be able to distinguish situations which are 'business as usual' repairs of infrastructure from situations where CP requirements are new, incremental and drive new capital expenditure by BT Group which would not be undertaken by BT in the normal course of events. In this respect we agree with Ofcom's conclusion that BT should not be required to supply new duct, and that any such requirements should be met by the CP (or potentially through BT if the terms of engagement are on a fully commercial basis). The proposed Ofcom approach is entirely appropriate and accords with the requirement that SMP conditions should be proportionate (section 47(2) of the Act).

In scenarios where existing duct is congested or blocked and such duct would not under existing planning rules/conditions be expected to be cleared or enhanced, then we would anticipate that CPs should bear the full capital charge, such that correct incentives and efficient working is maintained. The argument may be different for normal maintenance which could be averaged into the long term duct rental price.

Infrastructure Capacity required for normal business use and NGA deployment

As noted earlier the PIA remedy has been introduced to help facilitate new and incremental investment in NGA infrastructure in the UK. It is not intended either to prevent or hamper BT from fulfilling its existing commercial, legal and regulatory obligations relating to its wider portfolio of products.

It is too early at this stage in the process for rules to be specified as part of this response but it is clear that BT will need to rely on its physical infrastructure capacity on a day to day basis in ways which do not apply to a CP choosing to buy PIA for NGA deployment. We also have SLA/SLG arrangements which will result in financial penalties if services cannot be delivered in specified timeframes. It would not be possible to introduce a 'reservation' process for such activities, without a substantial review of all such downstream obligations, and we would not intend to do so. This would be particularly important in situations of emergency, disaster recovery, high security circuits etc, or even high priority commercial contracts.

We note Ofcom's conclusions that Openreach may require the ability to reserve capacity for NGA deployment (as might other CPs) and we will be looking into how this might work over the coming weeks, internally and as part of our customer engagement programme.

Pricing

As Ofcom acknowledges, pricing is likely to be an important aspect of any offer but it is premature to discuss this in detail at this stage as the product specification has not yet been defined, likely levels of demand are not yet established, and we have limited information on the resources/processes required to support PIA provision. We expect these factors to become clearer during consultation and hence to be able to address pricing in more detail both for the initial trial phase and in the subsequent consultation/product development phases.

Ofcom also makes it clear that there is no intention that the introduction of PIA as a remedy should prevent or delay BT from continuing its NGA investment programme. Hence the key issue for the pricing regime is that it sends the correct signals for efficient investment to potential investors. As the product development process moves forward, the critical cost drivers will become more apparent and we will be looking to fully recover the costs incurred, including the capex and cash expenditure required to maintain and upgrade the passive infrastructure. This commitment is made by BT in the context of the cost recovery principles set out in Ofcom's NGA Policy Statement, reflecting that investment made to improve the network for NGA roll-out will require a fair contribution to common costs to maintain efficient incentives to invest and recognition of the appropriate level of risk.

The potential transition from existing networks to next generation networks also adds complexity to such calculations and we will need to ensure the pricing takes account of these ongoing complexities. Prices may need to consider such aspects as real cost differences faced in different geographic regions or geotypes, or potentially in different parts of the duct network. There will also be potentially different opportunity costs for BT in non-GEA areas from GEA areas and different levels of risk involved for BT when recovering its investment. This links, to some degree, with Ofcom's suggestion that the primary purpose of PIA is to make new investment contestable, not that it should prevent investment by BT.

Pricing will also need to potentially address both term and volume commitments. This is because duct is an asset which does not recover its cost in the short term (e.g. a CP 'reserving' or renting a duct in the short term may generate a new duct build and consequential capex requirement for BT for its own use – however, when the CP terminates the contract BT is left with unnecessary and under-recovered capex, leading to incorrect investment signals). Volume commitments may also be necessary as a way of linking legitimate use of PIA to NGA roll-out, distinguishing it from non-compliant uses, for example, as a way of serving single business customers.

We also have concerns with the proposal to impose cost orientation as a formal SMP obligation at this early point in the development of PIA. This is discussed further in our answer to Question 4, below.

EoI Consumption

Ofcom's decision not to require EoI consumption of PIA as part of the VULA obligation is appropriate. We have set out above BT's position in relation to EoI as an SMP remedy. Leaving that on one side, however, on the issue of 'consumption models', we have already identified to

Ofcom[9] that introducing formal trading models whereby Openreach 'consumes' a product as an input into a product which is then provided out of Openreach on an EoI basis, increases the costs of NGA deployment substantially, leading to a significantly increased payback period and a material increase in risk to the business case. In view of the significant costs that would be incurred in implementing a formal consumption model in which VULA consumed PIA, BT considers that such an obligation would not be objectively justifiable or proportionate and as such welcomes the position taken by Ofcom.

Fibre unbundling

Physical Fibre Unbundling

Ofcom's research indicates that they have looked at this issue in great detail and found that there is no economic case to support physical unbundling of fibre. The evidence indicates that fibre unbundling would drive up the cost of BT's NGA programme with no discernable benefit to end-users. This would fail a regulatory impact assessment and would represent a disproportionate additional intervention in the value chain. There are already two prescribed regulated access remedies at the PIA and VULA levels, both of which potentially produce sustainable business models and incentivise new and additional NGA investment in UK infrastructure.

BT agrees with the analysis and findings in relation to various forms of fibre access, presented by Ofcom in Section 7 of the WLA consultation document. Both the summary presented and the supporting analysis contained in the *Analysys Mason - Competitive Models In GPON* study are useful source information and broadly in line with our own internal experience and analysis of fibre deployment. The study usefully models the static cost differentials between the various unbundling scenarios (both physical and virtual). We agree that the reported 'recovered cost' deltas appear very significant between the Base virtual unbundling case and even the closest, in cost terms, physical unbundling case (a flexi-point option). As acknowledged by Ofcom the cost differentials for the other unbundling scenarios are significantly higher.

In our view, these cost differences, if translated into higher end user prices, would significantly affect end-user demand; and hence reduce take-up and restrict the breadth of possible UK coverage. For our NGA deployment, as take-up and coverage are key elements which underpin the Openreach NGA business case, such cost increases would be highly damaging.
Although we broadly support the analysis of options, we do question whether some of the opex saving assumptions behind the flexi-point scenarios are potentially overstated. In many cases the maintenance and additional costs of intervention in the field are presented as 'worst case'

[9] As part of our analysis of alternative operating models which was produced in the context of the Variations of BT's Undertakings relating to FTTC and FTTP.

’assumptions. In our view these may be realistic rather than ‘worst’ and hence cost differentials could in practice be higher. For example:

- Our understanding is that the ratio of maintenance costs for both active and passive models are all set at approximately 20% that of copper. We agree with this assumption for the active unbundling model as once the network is built then effectively all churn is at the Ethernet layer. However for passive dark fibre scenarios the churn activity within the network will undoubtedly drive faults from intervention and through fibre connector cleanliness issues. Our view is that a maintenance cost of perhaps 80-90% that of copper is a more appropriate assumption for a field flexi-point scenario.
- An additional effect of having to maintain cross connects at ‘flexi-points’ (e.g. cabinets) is that they will require a physical visit, whereas the switching of a VLAN from one CP to another at the exchange in an active solution does not. Given the assumption of churn levels within the model the carbon footprint of a system based on physical visits will be vast in comparison to the base case and would come at a time when the UK Government (and BT) is seeking to minimise these effects.
- There are numerous other examples of network operations which change significantly between scenarios based on physically unbundled fibre from virtual unbundling, and these all lead to the construction of a fundamentally inefficient operational model requiring large scale and ongoing manual intervention. This is in direct contradiction to one of the major factors driving the investment; that is to reduce faults and manual intervention in the network, and to increase service reliability and network capability.

In our view, we do not see any scenario apart from the base virtual unbundling (or ‘active’) case as mirroring the real commercial environment Openreach currently faces in implementing and funding a large scale NGA deployment plan. The study helpfully compares different scenarios in a static way, but intentionally stopped short of addressing many real time implications. For example, if certain of the physical unbundling options were to be implemented then it would be necessary for many engineering and costing decisions to be made prior to starting such an investment. Competition implications would also need to be considered; such as, how many parallel PONs should be built and how would they to be funded.

There are also fundamental implications for the regulatory models which would apply in such circumstances. In the UK we have a functionally separated model, whereas many physical unbundling scenarios appear more suited to vertically integrated and competing firms. These are not trivial issues to overcome in timing or implementation. Hence these ‘options’ are not simple alternative and concurrent choices to the virtual unbundling case. In effect our current investment would need to cease while such options were fully explored and the regulatory framework and funding structures put in place before the alternative options could commence.

Wave Division Multiplexing Passive Optical Network (WDM PON)

We also agree with the conclusions related to the WDM PON scenario. As indicated in the analysis this is not a viable active scenario at this point in time (in terms of cost, immaturity of technology, standards etc). Hence active competition will be based on Ethernet. As Ethernet PON standards and technology will develop in parallel to the development of WDM PON standards this then still leaves an open question as to what the most efficient upgrade path for 'active' end-users might be in 2015/16. It may not be WDM based. Such a decision would have to be based on the latest available technical and cost information at the time, which might yet favour higher speed Ethernet options at the relevant point in time. It is not a simple decision which can be made now based on today's technology and current information.

Conclusion on Fibre Unbundling

We agree with Ofcom's conclusion that, based on the evidence, physical fibre unbundling is not a viable main tool for competition in the period covered by the review. For the reasons outlined, both PIA and VULA combined with Openreach functional separation allow CPs significant scope to enter the value chain in a pro-competitive way. They have the freedom and ability to both invest in, and create completely new NGA infrastructure though the use of PIA; or to build a business on an equivalent footing with downstream BT by using virtual unbundling (i.e. VULA) and benefit from the efficient scale investment made by Openreach. Physical fibre unbundling does not fit easily into such a model, and Ofcom are correct to identify the disincentive effects of ill-defined fibre unbundling obligations both for Openreach and other infrastructure operators. The fundamental objective driving PIA as a remedy is the intention to facilitate (or at the very least, not prevent) additional new investment in NGA in the UK above and beyond that currently announced by existing players. Such **additional** investment cannot be generated by physical fibre unbundling, as by its very definition it only grants access to **existing fibre** which would not be available in areas outside the Openreach NGA footprint at this early stage in FTTP roll-out. In our view Option 1 (the general access obligation) is the only viable and/or proportionate position which can be adopted at this stage

We therefore agree with Ofcom's decision not to propose fibre unbundling ('dark fibre') as a remedy; as the EU Commission has pointed out recently in relation to the Swedish WLA market review, duct access is preferable to dark fibre as a passive remedy as it better enables operators to choose a suitable and sustainable point in the 'ladder of investment'. The combination of VULA and PIA, together with Functional Separation, is a powerful combination to address competition issues for NGA, but which still allows investment to be contestable and sustainable. Mandating a fibre unbundling remedy that would jeopardise scale NGA roll-out would have negative effects on consumer welfare.

4.3 CGA remedies

Local Loop Unbundling (LLU)

Ofcom's proposals to leave LLU remedies largely unchanged overlook the opportunity here to improve the scope for pricing and service innovation, and for service delivery improvements to the benefit of customers.

- **Notification periods**: We believe that Ofcom should take this opportunity to align LLU notification periods with WLR[10]. The notification period for WLR connections, transfers and other functionality (e.g. network and calling features, service levels etc) was reduced to 28 days from 90 days.
- **Cost Orientation for discretionary ancillary services:** BT believes that price regulation should be removed from services beyond the base LLU product(s) which would align with the regulatory treatment of this issue for WLR[11] and allow LLU customers further scope to benefit from service innovation
- **Linking SLGs and CP forecasts prohibition:** BT believes that Ofcom should relax the prohibition on linking SLGs to CP demand forecasts to ensure the regulation in this area deals appropriately with both the inputs to resource planning as well as the execution of service delivery ultimately leading to better service delivery.

Ofcom proposes to formalise the current KPIs agreed with industry; this is a retrograde step and BT believes that the best approach to provide transparency as to quality of service managed through industry agreement. This is an approach that has proven to be flexible and responsive to customer requirements.

Our positions with regard to these specific issues are outlined in more detail in section 5 of this response. CPs are still investing heavily in LLU at a time of great change in technology and network upgrade, when typically such business cases require a five year window in which to payback. For example, BT has recently announced its extended investment in NGA which could see two-thirds of the UK with access to NGA by 2015. In BT's view such investments are now being made by CPs in the full knowledge that significant investment is being made by BT (and others) which will change the commercial viability of such cases over the next review period in a foreseeable way.

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[10] Ofcom Review of fixed narrowband services wholesale markets, Final statement 15th September 2009, P 268
[11] Ofcom, Charge controls for Wholesale Line Rental – implementation and cost orientation 23 Feb 2010, p3

Sub-Loop Unbundling (SLU)

BT notes and agrees in general with Ofcom's analysis of Sub-Loop Unbundling. In summary:

- The economics of SLU are fundamentally challenging.
- Openreach currently meets its regulatory obligations in this space both in terms of pricing and consistency of product specification and pricing with other regulated access remedies and remains committed to working with its customers to explore ways in which the product can better meet their requirements in situations where the economics are viable.
- The Copper Products Commercial Group which meets monthly at Ofcom is the appropriate body through which SLU product development requirements could be captured and prioritised.
- Ofcom's conclusions on remedies appear to be sound given current demand but should there be structural change in the industry or the market then these could be reassessed at the appropriate time.
- Both Ofcom and Openreach have already committed to revisiting SLU requirements in 2011 as part of the commitments made at the time of the FTTC Undertakings Variation. We still consider this to be the appropriate timeframe, for the reasons identified at the time of the variation.

BT also agrees in general with the assessment of options for SLU set out by Ofcom in the consultation document. In view of the limited demand for this product, and the proposed availability of other forms of wholesale access, it does not appear to be appropriate or proportionate for Ofcom to mandate BT to provide a specific configuration which may not meet the CPs' needs. As Ofcom suggests, the appropriate development of SLU products can be dealt with in the normal course of events between Openreach and its CP customers, taking account of future demand, and commercial and operational realities. As stated Openreach is already in dialogue with its customers about the future development of SLU and will continue to do so during and after the timescales of this WLA market review. As indicated above, Openreach has already established a Copper Products Commercial Group which meets on a monthly basis at Ofcom which would be the appropriate forum and mechanism though which CPs could raise product issues and possible future enhancements going forward.

It is important to note, as Ofcom do, that SLU faces specific economic challenges which are different to other regulated products in the Openreach portfolio; and the product specification, operational processes and pricing all need to be based on a realistic assessment of factors such as future demand and the likely level of investment. Such regulated products cannot be divorced from the basic economics which underpins them. All the available evidence to date (for example the independent studies published by Ofcom and other European studies) point to the real economic challenges faced by SLU deployments; the small addressable market available at a typical cabinet and the significant infrastructure required to serve such an architecture. It is not possible to change the fundamental economics by altering cost based prices or artificially stimulating demand for such solutions through regulatory intervention without significantly distorting and damaging efficient investment in NGA. In our view Ofcom appears to have taken a balanced and proportionate view of the independent evidence and we welcome the decision not to pursue a model (promoted by some CPs) which would be based on regulatory arbitrage between products and which is ultimately likely to be unsustainable and lead to duplicated or even wasted investment.

Ofcom lays out the possible physical options available for SLU in paragraph s7.74, and in our view these all seem reasonable as suggestions of alternative **engineering possibilities.** However they stand alone from any discussion of commercials and hence are limited in their usefulness. Ofcom do however tackle such financial analysis in other areas of the document (particularly Annex 9), and although we cannot comment directly on the underlying detail in the models used, the arguments raised are all familiar to us and are broadly confirmed by our own analysis. Difficulties such as how to equitably dimension cabinets and share upgrade fees, the small number of end-users on cabinet, and the lack of evidence of successful cabinet sharing in New Zealand (where this option is theoretically available) all add supporting weight to the evidence undermining such options.

Openreach has also estimated various cost elements which would be introduced to our investment programme should similar SLU options be implemented (and also provided this information to Ofcom in support of our request for the FTTC Undertakings variation). Such additional costs are significant and highly damaging to our business case. Our own externally commissioned independent studies also confirm these findings. We have also looked at the costs of provisioning and the commercial viability of duplicate FTTC networks and found them to be non-viable for scale deployment. We believe the GEA concept (and VULA) offers the best option for competition in such scenarios, and that lack of SLU roll-out in Europe and the emerging evidence of the challenging nature of SLU/NGA projects taking place in the UK, also supports such findings.

We fully accept it is not for us to decide if and when a third party should choose or not to invest in SLU. We agree that should economic conditions or demand change materially then such options might be viable and/or offer opportunities for further incremental investment in UK infrastructure - hence it is reasonable for Ofcom to want to maintain the obligation. We also accept that it is correct for us to support such an option as long as charges are based on normal regulatory costing principles and are not set to stimulate demand in an unsustainable way. SLU may have its part to play and be viable in either targeted deployments, or at some later time of market development, and we are happy to support such a position. Hence it is right that Ofcom propose a relatively limited obligation on BT in relation to the SLU remedies, in advance of clear evidence of demand and given the uncertainty about the long term feasibility/sustainability of the remedy. This approach is consistent with the third principle of the ERG's Common Position on Remedies, which suggests that uncertainty about the feasibility of a remedy should be reflected in how vigorously the remedy is pursued.

Ofcom and the industry have already indicated that the real focus and benefit of PIA/SLU remedies is that it should open up the opportunity for *additional investment* in the UK and make that investment contestable. It should not be seen as a mechanism to prevent BT from investing. Where BT invests we have already made strong commitments to equivalent access to our virtual unbundling service GEA through the Undertakings, and the proposals in this consultation strengthen the regulation of Openreach in this area via SMP conditions. As Ofcom also correctly note BT has made a commitment to consult on passives for FTTC in 2011 as part of the FTTC Undertakings variation. This commitment is made by BT in the context of the cost recovery principles set out in Ofcom's NGA Policy Statement, reflecting that investment made to improve the network for GEA/FTTC roll-out will require a fair contribution to common costs to maintain efficient incentives for secondary investors. We note Ofcom's statement that sharing of cabinets might be a potential future development where *possible and reasonable.*

We continue to welcome customers feedback on SLU pricing and products and would be pleased to discuss and review suggestions with them in the appropriate forum. However, it must be noted that the new NGA services that Openreach and its CP customers are now starting to deploy and market are already constrained by existing products in the market (e.g. fixed and mobile broadband etc) and our assessment of pricing expectations both for CPs and end-users is that there is no scope at present to enter the market with prices substantially above our current levels. These are already at the high end of what we believe the market will sustain. We have also previously shared commercially confidential information with Ofcom to demonstrate that business case payback periods would be dramatically affected, particularly by physical consumption of EoI inputs, but also if wholesale price levels were regulated to a higher level than the market would bear.

We also note Ofcom's view that generally in the case of physical access products there are no risky additional investments entailed in their provision, and welcome Ofcom's assertion that where greater risk is involved, e.g. where BT invests in new duct or cabinets to deliver an NGA network, that the LRIC-based prices charged by BT could be higher to reflect this greater risk.

4.4. General access remedies

In addition to the specific remedies covered above, Ofcom also sets out proposals for applying a number of general access remedies. We have a number of detailed comments in relation to some of these remedies which are set out in Section 5 in our response to Ofcom's question 4.

It should also be noted that, although in Chapter 6 Ofcom describes its proposed general remedies concerning network access consisting of 'Requests for new Network Access', 'Requirement not to unduly discriminate', 'Pricing remedies', 'Transparency measures', and 'Requirements for cost accounting and accounting separation', some aspects of these remedies appear to be directed to a specific product or products as opposed to being truly general in application to all products. Where a remedy (or a part of that remedy) has been classed by Ofcom as general in application but seems to BT to be product specific (for example, as above for KPIs in relation to LLU) BT identifies its concerns in respect of that general remedy as part of its specific discussion of Ofcom's proposed product specific remedies. BT would urge Ofcom to clarify what remedies it intends to be truly general against those remedies which Ofcom intends to be specific to a particular product of products so as to avoid future confusion and ensure clarity.

4.5 Pricing Remedies

Ofcom is unclear in the Consultation as to whether its DSAC test (or indeed DLRIC) acts as a binding constraint or limitation on BT's charges above which BT would be deemed to have breached its cost orientation obligations or whether it simply acts as a flashing amber light at a pelican road traffic crossing, warning 'proceed with caution'. For example Ofcom comments at paragraph 6.42 of its consultation document that (emphasis added),

> "[i]f we *were to impose a basis of charges condition on BT, our view would be that the interpretation of the basis of charges obligation would be that BT's prices must as a "<u>first order test</u>" be between DLRIC and DSAC, BT would be <u>required to adjust its prices to comply with the obligation</u>* [i.e. DSAC or as the case may be DLRIC] *if its current pricing was outside this range. As such, BT's prices would be constrained based on the cost it incurred.*"

A test which is determinative cannot be a "*first order test*", at least on the basis of how Ofcom has in the past used this term, and as BT, if its charges exceed DSAC, would be required to "*adjust* [i.e. reduce] *its prices*", DSAC must be intended to be determinative and as such a rule. Ofcom should clarify how it would propose to use DSAC to assess compliance with cost orientation.

That said BT observes that there is no basis in EU legislation, domestic legislation, or recognised good regulatory practice (in any network industry), for the boundaries of cost oriented prices to be fixed by Ofcom's concepts of DSAC and DLRIC. At best the DSAC / DLRIC (ceiling and floor) tests proposed should, only act as a 'filtering' or 'pause and check' device to consider whether there might be concern for which further investigation is warranted, and no more. Further, the role played by and importance of Ofcom's DSAC concept as a test (or indeed DLRIC), be that test used as a 'first order' test or otherwise, is highly questionable and indeed is currently the subject of review in the Competition Appeal Tribunal.[12]

4.6 Symmetrical Regulation

As indicated in Section 3, we believe Ofcom's approach to market definition and the assessment of market power understates the position of both Virgin Media and of owners of access infrastructure in new-build sites. We believe it is in the interests of UK consumers and businesses that this regulatory asymmetry be addressed at an early stage in the life-cycle of fibre deployments in order to avoid vertically-integrated 'islands' or local monopolies which preclude effective competition and deny choice. In the case of new-build sites, Ofcom has at least indicated a policy expectation that some form of wholesale access should be provided but we believe this should be made much stronger. One obvious way of addressing this is through traditional SMP regulation, but we recognise that this does pose some practical issues for Ofcom, even if we do not share the apparent view that this is an insurmountable problem.

On the basis of the above, we welcome Ofcom highlighting the change in the EU Framework Directive (to be implemented in UK legislation during 2011) which will enable national regulators and/or member states to mandate reciprocal access. We look forward to discussing this further with Government and Ofcom as part of the implementation of the new Directives and would also welcome Ofcom being clearer in its WLA statement as to how it might use this revised legal instrument. Ofcom should also actively examine other mechanisms available under both the Communications Act and the EU framework.

Because we believe strongly in the principle of open access, BT's PIA offer will include terms and conditions that require both a reciprocal offer of duct/pole access and that CPs utilising PIA should be required to supply a wholesale active NGA product (along the lines of VULA). This would ensure that there is a competitive downstream market and we would welcome Ofcom's support for this approach.

BT also believes that the Government and Ofcom should proactively pursue the opening up of other utilities' duct given that there is no practical difference between the civil engineering infrastructure used by telecoms providers and that used by others. This is in line with the new Government's stated intent (in '*The Coalition: our programme for government'* to '*ensure that BT*

[12] British Telecommunications Plc v Office of Communications (Partial Private Circuits) Case number: 1146/3/3/09: http://www.catribunal.co.uk/237-5136/1146-3-3-09-British-Telecommunications-Plc-.html

and other infrastructure providers allow the use of their assets to deliver [superfast] broadband'. Again, this should be on a basis that facilitates open access and downstream competition.

5. Response to Ofcom's Questions

Q1.Do you agree with our proposed product market definition?

BT agrees that, given the expected level of network innovation, the relevant economic market should not be limited strictly to physical elements. BT broadly agrees that the four characteristics suggested by Ofcom, localness, minimum functionality incorporated, service agnostic and dedicated capacity, are key characteristics that a non-physical product should exhibit to ensure such products are consistent with the underlying characteristics of physical products such as LLU.

BT agrees that cable-based local access is in the same product market as loop-based local access and that this definition should also included fibre-based local access. We agree that mobile, fixed wireless access and satellite should not be included in the product market. While NGA and CGA services might be in the same market now this may not hold in the future.

BT also agrees that it is appropriate to define a single WLA market for supply to both residential and business customers.

(see also Section 3, pages 13 to 14)

Q2. Do you agree with our proposed geographic market definition?

In relation to the question of whether there is a single geographic market (excluding Hull), BT acknowledges that it is difficult to draw firm conclusions about the level of market differentiation in different geographic areas. On a forward looking view, the growth of cable as well as the rollout of NGA services may however lead to market fragmentation by geography. In those circumstances it may be that Ofcom could take a sub-national approach, along the lines adopted in the Wholesale Broadband Access review. While BT does not believe such an approach is warranted today this is an area which Ofcom should keep under review.

The market definition does not address 'new build' where parties other than BT own these networks and we feel strongly that Ofcom should find a way to mandate wholesale access to these networks.

(see also Section 3, pages 14 to 16)

Q3. Do you agree with our proposals that BT and KCOM have SMP in their respective geographic markets?

Ofcom's assessment of SMP follows directly from its approach to market definition. On the basis that the WLA market is a national market that comprises both copper and fibre local access, BT is likely to have SMP nationally (except in Hull).

As indicated above, and in common with our views on the Wholesale Broadband Access market review, BT has concerns about the methodology used to assess the market and the designation of BT having SMP in all parts of the UK. The presence of cable and other new-build providers, combined with the constraining effect of mobile and BT's obligation to supply LLU in uneconomic areas all give rise to an exaggerated view of BT's actual market strength – ultimately the basis upon which Ofcom have decided that BT has SMP in its geographic market.

BT has no comments on the proposals in relation to KCOM.

(see also Section 3, pages 17 to 18)

Q4. Do you agree with our proposals for the general access requirements that should apply to BT and KCOM respectively?

In addition to the specific remedies covered above, Ofcom also sets out proposals for applying a number of general access remedies. We have a number of detailed comments in relation to some of these remedies, which are set out below:-

a) Requirement to provide network access on reasonable request

Condition FAA1.1

In general BT is not opposed to the proposal to retain the general access requirement. However, it is essential that the assessment of the 'reasonableness' of any request for network access reflects both the availability of the range of wholesale remedies and the potential downsides that could arise if investment is disincentivised by regulatory uncertainty. If Ofcom's current proposals are implemented, BT will be required to offer LLU, VULA and PIA. The development of new remedies such as PIA and VULA will require BT to devote significant time and resource and (as recognised by Ofcom in the consultation) demand for these remedies may be limited in the short-medium term.

We accept that the term ‘reasonable’ is not defined but it is clear that the question of whether a specific request is ‘reasonable’ will depend on the circumstances of the case in question. While remedies based on copper based infrastructure exist today, this will represent the first time that BT would be mandated to provide wholesale services based on its fibre based network. These obligations are being imposed at a time when demand for services utilising the new fibre based access network is uncertain. Therefore, in meeting its general duties, Ofcom must strike the appropriate balance between maintaining the appropriate incentives for BT to invest in NGA and encouraging other CPs to move up the ladder of investment themselves.

The degree of upfront risk being borne by BT in relation to NGA investment should not be underestimated. Pursuant to section 87(4) of the Communications Act, in determining what conditions should be set in a particular case Ofcom must take into account the *“investment made by the person initially providing or making available the network*”, as well as the technical and economic viability of the requested access. The proposed level of investment in new NGA infrastructure can only continue if the appropriate regulatory framework is in place.

Therefore, as part of any assessment as to whether a request is reasonable, the range of alternative remedies available and proportionality (in terms of the cost of implementation, economic viability etc.) of acceding to a request will form a necessary part of BT’s consideration.

b) Requests for new Network Access – proposed new SOR process (Condition FAA2)

BT agrees that the SOR process is effective and provides CPs with clarity and certainty about the way in which we will consider requests for new network access. Therefore, we welcome the proposal to relax the specific timings contained within the current obligation.

c) Basis of charges (Condition FAA4)

Cost Orientation

BT accepts that a cost orientation obligation is appropriate in the sense that BT’s charges should appropriately reflect and relate to costs on, for example, a Long Run Incremental Cost basis. However for reasons of applying good economic principles and regulatory practice, and for good practical reasons, it is wholly inappropriate:

- to apply a cost orientation obligation to individual service components as opposed to services as a whole or baskets of similar or related services; or
- to test for compliance of a cost orientation obligation, using a fixed or overly formulaic measure.

(see also Section 4.5, pages 42 to 43)

Approach to basis of charges

Ofcom's considers the alternative approaches to cost-based charges and concludes that the most appropriate approach for a basis of charges condition is 'LRIC+'. This is on the basis that using the Efficient Component Pricing Rule (ECPR) approach might allow BT or KCOM to earn excessive profits as ECPR derives wholesale prices from retail prices which are themselves not subject to price control.

In coming to this conclusion, Ofcom does not distinguish between specific retail services provided by WLA wholesale inputs. At this time, there is no evidence to suggest that BT has an ability to earn excessive profits from fibre-based access by setting retail prices above the competitive price level. The rejection of an approach to regulation (for wholesale inputs designed for fibre) on the basis of such a premise is therefore premature. This is particularly the case for PIA for two reasons. First, regulation is not seeking to encourage efficient network entry in the supply of PIA itself, for which LRIC+ would be appropriate. Second, Ofcom is also seeking to ensure that appropriate incentives to invest downstream of PIA are in place, and ECPR achieves this as it seeks to encourage 'efficient entry' at the downstream level and to avoid duplicative investment where this is not efficient.

Price regulation of LLU, SLU and PIA on basis of LRIC+

The key issue for the pricing of PIA is that it sends the correct signals for efficient investment to potential investors. BT acknowledges the need for PIA charges to be cost reflective and commits to this in the context of the cost recovery principles set out in Ofcom's NGA Policy Statement.

However, BT is concerned with the current proposal to impose price regulation for PIA on the basis of LRIC+. Pursuant to section 88(1) (a) of the Act, Ofcom should only impose such a requirement if there is a relevant risk of adverse effects arising from price distortion. Ofcom has not sufficiently demonstrated that there is a credible risk of such distortion taking place in the absence of a cost orientation obligation. As a new service, the starting point for Ofcom should be one of exercising regulatory discretion (especially in relation to pricing obligations) until such time as key issues such as the design of the product and likely levels of CP demand are understood. Therefore, it should be sufficient for Ofcom to provide guidance as to the pricing of PIA rather than impose price regulation on PIA.

Cost orientation for discretionary ancillary services

During the Financial Framework Review consultation an issue was raised as to whether cost orientation should apply to discretionary value-add ancillary services (such as enhanced care levels, expedite products, Special Fault Investigation, power options for LLU racks etc) which were excluded from the charge control MPF and SMPF ancillary baskets and co-mingling services basket as not being essential to a CP in purchasing LLU services. Ofcom agreed that it would consider this issue in more detail in the next Wholesale Local Access Market Review.

However, Ofcom does not appear to have considered this issue in the current consultation and we believe it should do so to provide certainty and clarity on the matter.

During 2010 the issue of whether cost orientation should apply to enhanced care levels has been specifically addressed for WLR; in the second WLR Charge Control statement of February 2010 (paragraphs 4.1 to 4.28), Ofcom confirmed its intention to disapply the cost orientation obligations in relation to enhanced care levels for WLR and issued a direction to that effect. BT believes that Ofcom should take the same approach for LLU discretionary value add ancillary services (including products like power options or test access that LLU CPs can self provide) as it did for WLR, ensuring that Openreach would be free to sell services such as enhanced care levels in addition to the core rental services across LLU and WLR in a consistent way. This approach would provide the right framework to encourage Openreach to innovate in the development of enhanced care and other value add services. Consequently, CPs would have a greater choice of service products to obtain from Openreach, or where contestable, source from alternative suppliers, to the benefit of end users. Overall, BT believes that the explicit removal of price/cost regulation for enhanced care levels and other discretionary value add ancillary services would provide the clarity and incentives needed to realise effective competition and innovation.

Openreach already provides innovative services where prices have been set based on the value of that service to the customer purchasing it. For example, Openreach provides 6 hour repair services (Service Harmonisation Service Maintenance Level 4) where the incremental rental price of £48 per annum has been discussed with, and positively received by customers. Further, Openreach offers advanced project services such as consultancy services where the pricing reflects the value provided to the customer. The market will provide the strongest basis for continued innovation in this space.

Service Harmonisation will deliver a number of new value add services to CPs including Flexible Appointments, in addition to offering improvements to existing care levels (typically with no extra charge to the CP). Openreach strongly believes that CPs will only purchase these enhanced care levels where the price reflects the economic value to the CP and end users, of those additional elements which are not provided as part of the core rental service. Openreach is committed to Service Harmonisation as one of its main strategic development programmes, it is important that the market and CP discretion continue to be the mechanism for driving innovation and positive outcomes.

Charge Control

The current LLU charge control is due to expire at the end of March 2011 and is also the subject of a legal challenge. As a result, the certainty that Ofcom posit as being a key benefit from the charge control has been effectively undermined. Whatever the outcome of the litigation, it is essential that Ofcom put in place appropriate measures that continue to bring prices into line with cost, with cost reflective pricing being achieved by 2012. Therefore, BT would welcome early clarify from Ofcom as to the likely timing of the consultation on the pricing regime to apply after 31 March 2011.

d) Requirement for Reference Offer (Condition FAA5)

BT is happy to work with industry to develop a duct sharing offer which meets the needs of its customers while at the same time does not unduly impact on the roll out of our own NGA network. As such, a reference offer will be an integral part of this work. While this should include certain minimum elements it also needs to be flexible enough to reflect the commercial requirements of the parties concerned.

Ofcom sets out generic minimum elements to be included in the reference offers for Network Access (FAA5.2) and additional specific minimum elements for LLU (FAA5.3) and PIA (FAA5.3).

There are two changes proposed that would apply to the current reference offer for CGA products; listed below and proposed in FAA5.2

(h) Details of traffic and network management

(j) Details of measures to ensure compliance with requirements for network integrity

BT believes that these proposed changes are not relevant and therefore there is no requirement to change the current reference offers for these services.

Although there is no mandatory requirement for it to do so, BT has already begun substantive work on the drafting of a PIA offer. As the offer is developed it will become clearer to what extent the elements listed in FAA5.3 (PIA) are relevant.

e) Requirement to notify charges/ terms & conditions (Condition FAA6)

BT agrees that there should be a requirement to notify charges / terms and conditions. Following the Wholesale Narrowband Market Review the notification periods for LLU and WLR are misaligned. The notification period for WLR connections, transfers and other functionality (e.g. network and calling features, service levels etc) was reduced to 28 days.

As a result, changes to prices of product functionality common to both WLR and LLU products (e.g. Service Harmonisation service maintenance levels) needs to be notified using the longer LLU notification period to ensure compliance with the obligation.

BT therefore requests that Ofcom uses this opportunity to align the notification periods of LLU and WLR so as to;

- provide Openreach with the same ability on LLU and WLR to respond to changes in costs and to market demand
- provide LLU customers with the same terms and conditions as WLR customers ensuring that LLU customers get the full benefit of shorter notification periods.

f) Requirement for notify technical information (Condition FAAA7)

It is in BT's commercial interest to ensure that its customers have the requisite technical information to enable them to make effective use of its wholesale products. While BT makes no specific comments on the appropriateness of the proposed 90 day notification period, it is concerned with the Ofcom suggestion that an even longer period may be necessary in some cases (paragraph 6.99). Where it is necessary for BT to make changes to technical aspects of its products, it is essential that BT is not precluded from implementing such changes in a timely manner (subject to adequate notice being given to CPs).

g) QoS (incl KPIs) (Condition FAA8)

BT is concerned with Ofcom's proposals to formally require BT to provide quality of service data. BT already provides extensive data to its customers and the EAB. These reports have been specifically designed to enable CPs to check for compliance with the non discrimination obligation. Ofcom has provided no explanation as to whether the proposed reporting obligation would replace or be additional to the data already provided, why the additional information is necessary and whether it has been requested by industry. Pursuant to section 47(2) of the Act, any condition imposed should be objectively justifiable and proportionate to what it is intended to achieve. BT considers that these criteria have not been adequately met in the current proposal.

Notwithstanding that it seems to be the intention of Ofcom's proposal that **existing LLU KPIs** will be formalised.

> "*At the time of the last review we decided against imposing specific Key Performance Indicators ("KPIs") as they were still largely undeveloped. Now these have been developed by BT in conjunction with the OTA and industry input we are proposing to issue a draft direction to formalise the existing specific LLU service KPIs to provide a level of certainty for industry that minimum KPI reporting would continue for LLU."*

However, the following outlines the changes Ofcom would need to consider in order for their proposals to mirror the KPIs provided today:-

- *Proposal is that the reporting period should be one week:* Although some KPIs are already published weekly (e.g. LLU Headline reports): this is not the case of all KPIs (e.g. those published on the OTA website) and such would be a significant change.
- *The KPIs to be published and provided within 14 working days of the last working day of the reporting period:* while such a period would enable BT to run the relevant report and meet the reporting requirement, it would limit the value of the results as they would be two weeks out of date by the time they are published. BT would argue that if reporting is required, it should be limited to monthly reports, in line with other products like WLR.
- *Comparisons with BT averages*:
    - We do not publish BT average performance for LLU.
    - CPs get individual reports on the performance they receive enabling them to compare the level of performance they receive with that received on average by the whole of industry. Industry average is the benchmark report for CPs.
    - A separate set of KPIs has been developed and agreed with the EAB to address any potential discrimination; these KPIs are submitted monthly and published quarterly on BT's website. Strict rules have also been agreed regarding the carrying out of Root Cause Analysis when KPI results fall outside pre-agreed ranges. The process and KPIs already address potential discrimination issues. It is BT's view that this proposal introduces the prospect of separate standalone 'discrimination measures' formalised in ex-ante regulation thus undermining the processes put in place by the EAB in agreeing KPIs and overseeing compliance with the Undertakings.
- *Use of KPI on-line tool*: Currently the provision of KPIs is a mixture of the KPI on line tool and tactical reports. The proposals seem to set an expectation that BT should use the KPI on line tool to make the CPs' individual data available. Changes would require system development and prioritisation into an EMP release; an undue burden given the satisfactory nature of the current processes and systems.
- *Disaggregated volumes*: BT does not currently publish disaggregated installed base figures – we publish MPF and SMPF combined. CPs have regularly and consistently objected to the publication of disaggregated data for confidentiality reasons.
- *Submitted vs completed volumes*: BT currently report on completed volumes; submitted volumes would be inconsistent with the performance KPIs in any case.
- *Level of service reporting*: The proposal is for separate KPIs where options exist for CPs to purchase differing levels of service. This level of reporting is not currently available. This type of reporting is being considered as part of the launch of Service Harmonisation. We expect to limit the reports at launch to the high volume products Levels 2 and level 3 but would exclude low volume products Level 4. We also do not intend reporting separately on expedites / multi level expedites.

We would ask that Ofcom reconsiders its proposals here and suggest that the treatment of KPIs for Carrier Pre-Selection (CPS) would be a good model to follow. Here, BT has the obligation to provide transparency on quality of service, managed through industry agreement.

BT has no comments on the proposals in relation to KCOM.

Q5. Do you agree that Ofcom should impose a new network access obligation on KCOM that would require it to follow a statement of requirements process to handle requests for new network access in this market?

BT has no comments on the proposals in relation to KCOM.

Q6. In relation to LLU, do you agree with the assessment and options set out?

BT agrees that the LLU remedies have been effective and therefore BT agrees with Ofcom's assessment that options should largely remain unchanged. However, as indicated above, we think that Ofcom should ensure LLU customers have an opportunity to benefit from enhanced pricing and service innovation by aligning its approach with WLR; reduce price notification periods and remove price regulation for services beyond the LLU base product. In addition, this is a good opportunity to remove the prohibition on linking LLU SLGs and CP demand forecasting to ensure there is a balanced set of incentives on Openreach and its customers to maintain good levels of service delivery. Lastly, we believe there is no reason to formalise the current set of KPIs as a minimum requirements.

BT agrees that regulatory consistency is generally a good thing and therefore supports the removal of the exemption whereby MPF is not subject to the general basis of charges obligation (the obligation for charges to be based on LRIC+).

Notwithstanding Ofcom's confirmation that it will undertake a separate consultation on the LLU charge control to apply after 31 March 2011, BT would welcome additional clarity on the anticipated timing of this consultation. While BT understands that the current charge control is the subject of ongoing litigation, it is essential that BT has regulatory certainty in relation to the future alignment of its prices and costs.

We are also concerned about Ofcom's proposed remedy regarding **LLU Service Levels and Forecasting (Condition FAA1.4).** In this consultation document, Ofcom proposes continuing the 2008 Service Level Guarantee (SLG) Direction for LLU and formalising its application through the proposed SMP condition FAA1.4. The SLG Direction removed the link between forecasting and SLG payments. BT accepts that SLG payments provide an incentive to maintain a good quality LLU service but believes this incentive is not sufficient in itself to drive good performance without obligations on CPs to provide good quality information to build accurate and robust resourcing plans. The regulatory focus solely on SLG payments, without freedom for BT to require robust forecasts from customers, results in BT being penalised where there is no reasonable prospect that BT could have planned to meet demand absent good customer forecasts.

BT believes that it would be fair and reasonable for the proposed condition to allow BT to link forecasting and SLG payments so that it can develop commercial incentives for CPs to provide more accurate forecasts: the prohibition on linking forecasting and SLG payments should therefore be removed.

Q7. In relation to fibre access, do you agree with the potential unbundling arrangements for the different fibre architectures and the positions/options set out given the current and expected future availability of fibre within BT's access network?

BT agrees with the analysis and findings on fibre access presented by Ofcom in Section 7 of the WLA consultation document. Both the summary presented and the supporting analysis contained in the *Analysys Mason - Competitive Models In GPON* study are useful source information and broadly in line with our own internal experience and analysis of fibre deployment.

We agree with Ofcom's decision not to propose fibre unbundling ('dark fibre') as a remedy. Investors are able to choose to build new NGA infrastructure through the use of PIA or utilise the large scale investment in virtual unbundling and open access infrastructure by Openreach in the same way as downstream parts of BT. The combination of VULA and PIA, together with Functional Separation, is a powerful combination to address competition issues for NGA, but which still allows investment to be contestable and sustainable and it would neither be reasonable nor necessary to extend obligations further.

(see also Section 4, pages 35 to 37)

Q8. In relation to SLU, do you agree with the assessment and options set out?

BT agrees in general with the assessment of options for SLU set out by Ofcom in the consultation document. In view of the limited demand for this product, and the proposed availability of other forms of wholesale access, it does not appear to be appropriate or proportionate to require BT and CPs to use a specific configuration which may not meet the CPs needs.

As Ofcom suggests, the appropriate development of SLU products can be dealt with in the normal course of events between Openreach and its CP customers, taking account of future demand, and commercial and operational realities. It should also be noted that Openreach is already in dialogue with its customers about the future development of SLU and will continue to do so during and after the timescales of this WLA market review.

(see also Section 4, pages 39 to 41)

Q9. In relation to PIA, do you agree with the proposed PIA obligation structure and the proposed implementation arrangements?

BT accepts the PIA proposed obligation and has already begun internal preparations and internal consultation to meet the first deadline of publishing a draft reference offer three months from the date of the final statement.

It is important that all parties play their part in developing the market in ways which generate additional investment in the UK on a basis which allows for customer choice an open access basis and in a pro-competitive way. Our PIA offer will therefore include terms and conditions that require reciprocity and downstream wholesale access in order to ensure there is a competitive market. We discuss reciprocal regulation in more detail in section 4.6 of this response.

In the main body of this response, we also make some specific comments in relation to the following:

- Scope of the PIA obligation
- Implementation timescales, particularly in relation to pole-sharing
- PIA Consultation and the proposed role of the OTA
- Congested/blocked ducts and poles
- Reserving capacity for normal business use and NGA deployment
- Pricing principles

(see also Section 4, pages 29 to 35)

Q10. In relation to VULA, do you agree that VULA may be a necessary access remedy in the WLA market and if so, do you agree with the key characteristics identified and how these currently relate to BT's GEA products?

BT agrees with Ofcom that an appropriate active product should be considered the main upstream fibre remedy in the WLA market. Ofcom's choice of the term Virtual Unbundled Local Access (VULA) underlines the fact that the active product is the fibre equivalent of LLU in terms of the economics of reach and handover and the scope for downstream differentiation and innovation.

We already believe GEA to be a good match with the VULA concept (as Ofcom have commented) but GEA is a 'real world' version of virtual unbundling and hence we expect to continually need to develop and improve the product moving forwards with the support of our industry customer base, and as demand increases and technology options evolve.

This review is also an opportunity for Ofcom to also define ease of switching between CPs as a required VULA characteristic. The GEA product is designed to support a multi-CP model, facilitating downstream competition and consumer choice, similar to the LLU-based competition model. It is important, in evaluating the technical characteristics of upstream remedies such as VULA, to always consider the impact on the end-user.

We have set out in the main body of this response our concerns regarding Ofcom's proposed SMP **Conditions FAA3.3 and 11.3 and** why we do not consider it appropriate or reasonable for Ofcom to impose an EOI non-discrimination remedy instead of a prohibition on undue discrimination.

BT is in no way drawing back from its Undertakings commitments to offer VULA on an EoI basis pursuant to the Undertakings for so long as we have SMP. When it comes to SMP regulation, however, we consider that the existing regulatory framework, and Ofcom's guidelines on how it will interpret the undue discrimination obligation in respect of a vertically integrated operator already provide Ofcom with the right degree of comfort, and no more is needed now.

(see also Section 4, pages 19 to 28)

Q11. Do you agree with the framework for considering specific access remedies on BT?

In general, BT considers that Ofcom has taken a pragmatic approach to appropriately balance the need to incentivise investment with facilitating effective competition in the market in order to benefit end users and hence Ofcom's overall framework for considering specific access remedies is appropriate. BT has specific concerns in relation to certain aspects of Ofcom's proposals and these are set out in relation to the relevant questions and in the main body of this response.

Q12. Do you agree that there is a need to have a complementary set of access remedies and if so, do you agree with the proposed set of remedies on BT?

As set out in the main body of this response and the answers to the questions regarding specific remedies, BT generally believes the set of access remedies proposed are reasonable, subject to the specific detailed issues raised in the main body of this response.

As indicated, however, we do not believe the public policy objectives for the UK in relation to NGA can be delivered solely by imposing SMP remedies on BT (and on Kingston in Hull). We believe Ofcom's approach to market definition and the assessment of market power understates the position of both Virgin Media and of owners of access infrastructure in new-build sites and believe it is in the interests of UK consumers and businesses that this regulatory asymmetry be addressed at an early stage in the life-cycle of fibre deployments in order to avoid vertically-integrated 'islands' or local monopolies which preclude effective competition and deny choice. One obvious way of addressing this is through traditional SMP regulation, and to assess market power properly, Ofcom should, at the very least, carry out at a survey of Virgin's ducts. We empathise with Ofcom's view that this poses some practical issues but we do not share the view that this is an insurmountable problem.

On the basis of the above, we welcome Ofcom highlighting the change in the EU Framework Directive (to be implemented in UK legislation during 2011) which will enable national regulators and/or member states to mandate reciprocal access. We look forward to discussing this further with Government and Ofcom as part of the implementation of the new Directives and would also welcome Ofcom being clearer in its WLA statement as to how it might use this revised legal instrument. Ofcom should also actively examine other mechanisms available under both the Communications Act and the EU framework.

(see also Section 4.6, pages 43 to 44)

Q13. Do you agree that no specific access remedies should be imposed on KCOM in the WLA market at this time? Could any remedies on KCOM at the WLA market level address the competition issues that we have identified?

BT has no comments on the proposals in relation to KCOM.

Q14. Do you agree with our assessment against the legal tests for each specific remedy, as set out in Section 9?

In general BT considers that Ofcom has satisfied the requisite legal criteria for the proposed remedies. Where BT has specific concern with a particular measure, those are detailed above in the main body of the response.

Annex A Talk Talk Group's view of Openreach's GEA product

Openreach Flexibility? - Improving

Flexibility for ISP	LLU	GEA Fibre
Commercially viable third-party/self-install	✓	✓
Self-supply modem	✓	×
Self-supply router / CPE	✓	✓
Control of up and down stream speed	✓	✓
Dynamic line management control	✓	✓
QOS to support IP-Telephony and Video	✓	✓
Comprehensive fault diagnosis tools	✓	✓
Price independent of speed delivered	✓	✓ / ×

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