



**RESPONSE BY BRITISH SKY BROADCASTING GROUP PLC
TO OFCOM'S CONSULTATION DOCUMENT "REVIEW OF THE WHOLESALE LOCAL ACCESS
MARKET – CONSULTATION ON MARKET DEFINITION, MARKET POWER DETERMINATIONS
AND REMEDIES"**

EXECUTIVE SUMMARY

1. It is very likely that, over the lifetime of this market review (i.e. the next 4 years), super-fast broadband will become increasingly important as a growing number of consumers migrate from current generation broadband services to new, faster ones based on fibre. Today, at least, these new services are constrained by the pricing of existing broadband.
2. Nothing has changed with respect to market conditions for the delivery of current generation broadband that would warrant anything other than a continuation of the current regime i.e. the rolling over of the existing suite of LLU¹ and SLU² remedies.
3. CPs will increasingly seek wholesale fibre services in order to provide faster retail broadband services but it is not feasible for fibre-based infrastructure competition to occur at a similar level in the network to where LLU-based competition has flourished. This is because BT's Next Generation Access ("NGA") network design³ and standards do not currently support fibre (or wavelength) unbundling and, while some CPs may deploy their own fibre in certain circumstances, it is unlikely that there will be large scale deployments of fibre access networks other than by BT and Virgin Media.
4. Therefore, in the near term, wholesale demand will gravitate towards Openreach's Generic Ethernet Access ("GEA") products which are not purely passive like LLU, but have the potential to offer Communications Providers ("CPs") a high degree of flexibility and control.
5. Under normal circumstances, it would be inappropriate to regulate such innovations because, typically, firms should be rewarded for their new investments and risk taking. However, these are not normal circumstances because
 - BT's NGA investment is non-contestable
 - The investment is, in practice, relatively low risk

¹ Local Loop Unbundling

² Sub-loop unbundling

³ i.e. Gigabit Passive Optical Network ("GPON")

- Much of the outstanding risk can be recovered by not applying any price regulation
 - GEA is being introduced into a market clearly identified by the European *ex ante* framework and where BT has already has Significant Market Power (“SMP”)
 - BT’s market power in fibre will grow over the next four years as consumers increasingly see current generation broadband as a poor substitute.
6. Hence, establishing a set of binding but high level Virtual Unbundled Line Access (“VULA”) characteristics that mimic as far as possible the flexibility and control offered by LLU (combined with network access and non-discrimination obligations with no price regulation) is the appropriate approach to adopt.
 7. However, in order for the VULA characteristics to be more effective in achieving this end, we propose a sixth characteristic to replicate the flexibility in technology and product evolution that is available to LLU operators but is not adequately accounted for in Ofcom’s proposals. Further, we suggest a more tightly defined “*control of access*” characteristic would accord more closely with the objective of encouraging effective and sustainable infrastructure competition at the deepest point in the network.
 8. Moreover, we object strongly to Ofcom’s assessment of whether Openreach’s GEA products today conform to Ofcom’s proposed characteristics (especially with respect to Ofcom’s lukewarm assessment of the benefits to consumers of “wires-only⁴” and the likelihood of standards maturity in the short term).
 9. It is important that Ofcom precisely defines the VULA characteristics and that it is more rigorous in its assessment of whether Openreach’s GEA products are compliant or not. This is because the characteristics themselves and the accompanying commentary will be an important reference point upon which CPs will base their investment decisions and, if sufficiently tightly-worded, will minimise the scope for future disputes.
 10. However much VULA offers flexibility and control to CPs, it is possible that, for certain CPs in certain circumstances, there will be a point upstream of VULA from where infrastructure competition will prove sustainable and effective. Moreover, VULA will not be available ubiquitously within the U.K. Therefore, it is appropriate to require BT to make available access to its ducts and poles.
 11. Although it is too early to determine the full extent of demand for this access, it is proportionate to require BT to make a reference offer now for Physical Infrastructure Access (“PIA”). Such a remedy is entirely practicable and should not disproportionately burden BT. There is a wealth of precedent in how BT delivers its own NGA roll out, leased lines and LLU as well as how similar remedies have applied internationally. All of which can be drawn upon in order to define a future PIA product.
 12. There is little risk in BT allowing spare capacity in its ducts and poles to be used by other CPs and, therefore, the application of cost oriented prices should not allow for any risk premia. Where there is increased risk with the building of new ducts, it would be appropriate for BT to outline its construction routes and invite CPs to pay for the

⁴ A VULA-compatible product that provides the necessary CP control of CPE is commonly referred to as a “Wires Only” product

incremental cost of providing multi-chamber ducts. It may be appropriate for this upfront payment to allow for any additional risk for BT.

SECTION 1. MARKET DEFINITION

Retail

- 1.1 Since Ofcom conducted the last Wholesale Local Access (“WLA”) market review in 2004, there has been significant take-up of current generation broadband services supported over either copper (ADSL) or coaxial cable (cable broadband) – in large part driven by the growth of LLU. In Q4 2005 there were 200,000 LLU lines increasing to 6.3m by Q4 2009. Today, according to Ofcom’s own market research, around 70% of households have a broadband connection (accounting for 96% of home internet connections compared to just 13% in 2003)⁵.
- 1.2 More recently, new broadband services offering faster connection speeds have been launched by both BT Retail and Virgin Media. These faster broadband services are made possible, in part, because fibre optic connectivity has moved further towards the customer premises.
- 1.3 As of yet, at the retail level, these new, faster services have had little impact in the retail market. BT only launched its fibre-based “Infinity” retail broadband service in January 2010, with roll-out to occur in stages across part of the UK, while Virgin Media recently announced that only 57,900 customers (out of nearly four million broadband customers) take its 50Mb/s broadband product⁶.
- 1.4 Demand for fibre-based retail broadband products remains, as Ofcom recognises⁷, at an early stage with those services that have launched (such as BT Infinity) exhibiting similar characteristics and pricing to copper-based alternatives. This is demonstrated by the way in which BT promotes its Infinity service. Rather than reference the provision of new services, BT promotes the faster use of existing services such as online gaming, iTunes, iPlayer or You Tube and the simultaneous use of computers and other internet devices within the home.⁸ While, in the future, NGA networks may allow different types of service to be made available (as Ofcom contemplates⁹), adoption of broadband connections that enable the provision of such services is currently embryonic. The characteristics of services provided over NGA networks remain similar to those provided over current generation networks.¹⁰
- 1.5 This suggests that, at the present time, the chain of substitution between different broadband services, based on current and next generation technologies, remains unbroken, and so the prices of higher speed broadband products remain constrained by the prices of lower speed, current generation services.

⁵ Ofcom, *Review of the wholesale local access market*, 23 March 2010, <http://www.ofcom.org.uk/consult/condocs/wba/wbacondoc.pdf>, paragraph 2.16 – 2.17

⁶ Page 4, Virgin Media press release): <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NDMwMDN8Q2hpbGRJRD0tMXUeXBIPtM=&t=1>

⁷ Ofcom, *op cit*, paragraph 1.29

⁸ BT press release: “*BT launches BT Infinity super>fast broadband at a competitive price*”, 21 January 2010, <http://www.btplc.com/News/Articles/Showarticle.cfm?ArticleID=F9F6F1AD-C4F6-442D-BF7E-FFCC7847631C>.

⁹ Ofcom, *op cit*, paragraph 3.37

¹⁰ The pricing similarities between BT’s copper-based and fibre-based retail services are discussed further in paragraph 1.13.

- 1.6 This contrasts with services provided over other technologies, notably mobile, satellite and fixed wireless, whose product characteristics and pricing tend to differ such that they are not currently regarded as substitutable. As such, it is appropriate for broadband services supported over copper, coax and fibre to be included in the same retail market definition.¹¹
- 1.7 With respect to mobile broadband (currently the most popular of these alternative services), as Ofcom indicates, evidence to date¹² shows that, for use within the home, while there has been some limited substitution with fixed line broadband, most mobile broadband services are bought as a complement to fixed broadband. There is a clear difference in speed and performance compared to fixed broadband. Current demand for mobile broadband tends to be for nomadic access away from the consumer's primary residential address.
- 1.8 This situation may change in the future should further mobile technology advances like Long Term Evolution ("LTE") deliver speed, performance and pricing that is closer to that delivered by fixed broadband. However, the UK's mobile network operators are still some years away from launching retail LTE services. Before they can do so, they will need to acquire or clear suitable spectrum and plan and construct their networks. At present, there is no clarity on their network roll-out plans nor on the retail pricing models that might be adopted. Once LTE services are launched, there will undoubtedly be some lag-time between early adopters and widespread uptake, as was the case with current generation mobile broadband. Sky therefore considers that LTE networks are unlikely to result in sufficient substitution between fixed and mobile broadband over the next four years such that they could be considered part of the same market.
- 1.9 Satellite broadband currently serves as a useful way to provide services in areas that would otherwise be unable to receive fixed broadband services due to long line lengths or where it would be uneconomic to install a line in the first place. Typically, the price of satellite broadband is significantly greater, and the signal delay is substantially longer, than fixed access.
- 1.10 We also agree that the retail market includes both business and residential broadband. Some businesses will be interested in broadband products that offer higher care levels, service level guarantees, lower contention rates, business grade routers and so on. However, many businesses will take broadband products aimed at residential users, or products that have similar characteristics, such that the price premium that they are prepared to pay will be constrained by residential broadband product pricing.

¹¹ For some consumers, current generation services may become an increasingly poor substitute for super-fast broadband services in much the same way that internet dial-up connectivity has ceased to constrain current generation broadband. Further, in the future, fibre could replace copper in the access network and, as such, even current generation broadband services would migrate to fibre.

¹² Ofcom, op cit, paragraph 3.23

Wholesale

- 1.11 There is a wide range of competing broadband products at the retail level that are currently provided over different technologies (copper, cable and increasingly fibre), that fall under a chain of substitution. This substitutability at the retail level feeds through to the wholesale level so that CPs want access to wholesale products based on all of these different technologies and, as a result, they will act as a constraint on each other.
- 1.12 As BT and Virgin Media roll-out fibre in the local access network, they have an incentive to migrate their customer base across to fibre-based (or, for cable, DOCSIS 3) services in order to recoup the costs of the sunk investment. Ofcom recognises¹³ that operators have this incentive to migrate their new and existing customers onto their fibre-based access networks. BT's retail pricing for fibre-based broadband services, which is broadly comparable to the higher-end packages for its copper-based broadband services, clearly shows BT acting on this incentive.
- 1.13 The pricing and key characteristics of BT's copper-based and fibre-based retail broadband services are set out in the table below.

Package	Monthly fee	One-off fee	Contract length	Download speed	Usage cap
Copper based services¹⁴					
Broadband 1	£15.99	n/a	12 months	20 Mb	10 GB
Broadband 2	£20.99	n/a	12 months	20 Mb	20 GB
Broadband 3	£24.99	n/a	12 months	20 Mb	Unlimited
Fibre-based services¹⁵					
Infinity 1	£19.99	£50	18 months	40 Mb	20 GB
Infinity 2	£24.99	n/a	18 months	40 Mb	Unlimited

- 1.14 It is apparent that a customer on BT's copper-based Broadband Option 3 service can upgrade to the highest Infinity package without any increase in their monthly fee (subject to entering into a new 18 month contract). Similarly, a customer currently taking BT's mid-range Broadband Option 2 can upgrade to the entry level Infinity package and see their monthly payment fall by £1 (albeit with a one-off fee of £50 and

¹³ Ibid, paragraph 3.110

¹⁴ Copper-based pricing is for BT's "Just broadband" packages (i.e. without an accompanying call package or TV service). See <http://www.productsandservices.bt.com/consumerProducts/displayCategory.do?categoryId=CON-TOTAL-BB-R1>

¹⁵ For BT Infinity pricing see http://www.productsandservices.bt.com/consumerProducts/displayTopic.do;JSESSIONID_ecommerce=RN1LL6WQdrRcsvdQFCJ2TDn3NyblHyYKONjffb19pfbpyQVpw8S8!1195615228?topicId=29017

a new 18 month contract). BT's press release for its Infinity launch also emphasises the competitive pricing of its new services.¹⁶

- 1.15 In Sky's view, given the incentive for BT to migrate customers to fibre-based products and the resultant competitive pricing, copper-based products will, for the time being at least, act as an indirect constraint on the price of wholesale fibre-based services.

VULA

- 1.16 Ofcom proposes that the boundary between the Wholesale Broadband Access ("WBA") and WLA markets should be defined such that VULA is included within the WLA market. Sky agrees that it is appropriate for products exhibiting the proposed VULA characteristics to sit within the WLA market.
- 1.17 As indicated by EC's Recommendation¹⁷ and Explanatory Note¹⁸, there is a close relationship between the WLA and WBA markets. Moreover, the distinction between the two can be expected to evolve making it difficult to be precise about the boundary between the two. For this reason it is important for the two markets to be reviewed together. While Ofcom must take utmost account of the EC's Recommendation, it is also clear that it must define markets appropriate to national circumstances.¹⁹ The Communications Act 2003 requires Ofcom to identify the markets which, in its opinion, are the ones which in the circumstances of the UK it is appropriate to consider.²⁰ In Sky's view, Ofcom's delineation of the boundary between the WLA and WBA markets is consistent with its legal obligations.
- 1.18 It is likely that the roll-out of fibre, and the uptake of wholesale services based on fibre will increasingly displace copper based wholesale services during the review period. This is despite the fact that the characteristics of fibre-based wholesale products differ in some respects from their copper-based counterparts. The key distinction is that fibre-based wholesale services are likely to involve more 'active' elements than 'passive' copper-based LLU products.
- 1.19 Sky agrees that substantial build-out of alternative fibre networks, in addition to those of BT and Virgin Media is unlikely; and that alternative, physical, fibre-based access options that make use of wholesale inputs, such as fibre unbundling, the laying of multiple fibres and wavelength unbundling are unlikely to be economic or practical over the period of this market review²¹.
- 1.20 Wholesale products that conform to Ofcom's VULA characteristics, however, will to a degree mimic the passive features of LLU. The underlying technical characteristics of a

¹⁶ BT press release: "BT launches BT Infinity super-fast broadband at a competitive price", 21 January 2010, <http://www.btplc.com/News/Articles/Showarticle.cfm?ArticleID=F9F6F1AD-C4F6-442D-BF7E-FFCC7847631C>.

¹⁷ European Commission Recommendation (2007/879/EC) on relevant product and service markets, 17 December 2007.

¹⁸ Explanatory Note to the Recommendation on relevant product and service markets, section 4.2.2.

¹⁹ Article 15, Framework Directive (2002/21/EC)

²⁰ Section 79(1), Communications Act 2003. In exercising this discretion, it is appropriate for Ofcom to take account of its statutory duties, including its general duty to further the interests of consumers, where appropriate, by promoting competition, and its duty to act in accordance with the six Community requirements (including promoting competition in relation to networks and services, securing sustainable competition, and securing maximum benefit for customers) (Sections 3 and 4, Communications Act 2003).

²¹ Ofcom, op cit, paragraphs 7.44, 7.47 & 7.50

product that would fall into the WLA market are identified by Ofcom²² as *localness*, *minimum functionality incorporated*, *service agnostic* and *dedicated capacity*. These characteristics contrast with those identified below as being relevant to the WBA market²³: *aggregation*, *more highly specified functionality*, *service specific* and *shared capacity*.

- 1.21 Ofcom's policy is to promote the deepest investment from where competition is economically viable and sustainable. Indeed, in carrying out its general duty of furthering the interests of consumers, where appropriate by promoting competition, Ofcom should have regard to the desirability of encouraging investment and innovation in relevant markets.²⁴ Such investment in current generation networks has resulted in extensive investment in LLU, with resultant benefits flowing to consumers through a vibrant retail broadband market. This vibrancy comes as a result of the optionality provided to CPs in how they provide broadband services (so that they can control and differentiate their retail offerings).

²² Ibid, paragraph 3.135

²³ Ibid, paragraph 3.137

²⁴ Section 3(4)(d), Communications Act 2003.

SECTION 2. COPPER LINE ACCESS REMEDIES - LLU AND SLU

- 2.1 Ofcom has proposed both general and product-specific remedies for BT in the market in which BT is determined to have SMP. The proposed general remedies largely mirror those that Ofcom put in place in 2004 as an outcome of its previous market review. Sky broadly agrees that the basis for the proposed general remedies and their specification is appropriate to the determination of SMP.
- 2.2 Sky is also generally supportive of the reasoning and specification of the product-specific remedies proposed by Ofcom for the continuation of the current set of copper-based access products – LLU and SLU.
- 2.3 Market conditions for current generation broadband have not changed sufficiently (nor are they expected to do so over the next four years) to warrant a significant change to the existing set of LLU remedies. There is no evidence to date of competition developing upstream of this point. For example, Virgin Media has not materially increased the geographic coverage of its access network in order to compete more expansively with BT. Meanwhile the availability of LLU services has provided the basis for the development of substantial downstream competition.
- 2.4 Although SLU has scarcely been used to date²⁵ and, as a result, is not fully tried and tested, it important to retain this remedy not least because of the potential for CPs in the future to purchase SLU in conjunction with PIA. Ofcom's statement that BT should allow sharing of its own street cabinets, where possible and reasonable, and that this is covered by the existing SLU obligation is welcome.²⁶ Sky considers that such sharing will be possible and reasonable in certain circumstances²⁷ and, as such, the SLU reference offer could be amended accordingly.
- 2.5 Should significant demand materialise in the future, then further, rapid work will be required to develop a scalable SLU product. Given that BT is not required to use SLU as an input to its FTTC product on an Eol basis, Sky considers that BT should publish a reference offer for the products it uses instead to assemble its own FTTC product, including details of costs and volumes consumed. Sky assumes that BT would be required to publish such a reference offer under Condition FAA5.4, but would welcome Ofcom's confirmation on this point²⁸, as well as a commitment to OTA2²⁹ involvement.
- 2.6 However, the economics for CPs considering purchasing SLU remain challenging and, while demand remains uncertain, it would be disproportionate to require significant development of a fully industrialised SLU product.

²⁵ BT is not required to use the SLU product as an Equivalence of Input ("Eol") into its Fibre-to-the-cabinet ("FTTC") service and SLU has only been used by Digital Region.

²⁶ Ofcom, op cit, Paragraph 8.24. In this regard Sky also notes BT's obligations in relation to the design and provision of FTTC Passive Inputs in sections 5.56 to 5.60 of the Undertakings. Sky would expect Ofcom together with the EAB to monitor closely BT's compliance with these obligations.

²⁷ SLU does not require refit or replacement of BT street cabinets, except in the most extreme of cases

²⁸ Under Condition FAA5.4, where BT provides network access to itself which is the same, similar or equivalent to that provided to another person (or may be used for a purpose that is the same, similar or equivalent), but in a manner which differs from that detailed in the published Reference Offer ("RO"), then it must publish a new RO in relation to the self-provided product.

²⁹ Office of Telecoms Adjudicator

SECTION 3. NEXT GENERATION ACCESS REMEDIES - VULA

Summary

- 3.1 Ordinarily, firms should be rewarded for their originality or risky investment in new services. Undue regulation can inhibit investment incentives and even be confiscatory.
- 3.2 However, under the EU and UK regulatory framework, Ofcom is required to conduct reviews of relevant markets and, where it finds SMP, to impose appropriate regulation. In determining the appropriate regulation for BT's NGA network, Ofcom should consider the following factors:
- BT's NGA investment is non-contestable
 - The investment is, in practice, relatively low risk
 - Much of the remaining risk can be recovered through the non-price nature of remedies
 - These innovations are being introduced into a market clearly identified by the European *ex ante* framework and in which BT already has SMP
 - It is likely that BT's market power specifically in wholesale fibre access products will increase over the next four years
- 3.3 Given the prospect of demand for fibre-based services over the course of this review, it is in keeping with Ofcom's duties for it to act now to establish a set of binding VULA characteristics that aim to foster competition at the deepest point in the network from where competition is effective and sustainable³⁰.
- 3.4 As such, Ofcom's characteristics should aim to mimic, as far as possible, the flexibility and control that truly passive products, like LLU, confer today. However, the proposed characteristics only partially achieve this end. More precision in the wording of the characteristics and the accompanying commentary is required alongside the introduction of a characteristic that replicates LLU operators' current scope to adopt, and innovate around, new technology as and when it becomes available. This will provide more certainty to CPs making investment decisions.
- 3.5 Therefore, we propose revised wording for one VULA characteristics ("*control of access*") and suggest a sixth characteristic to addresses the flexibility in technology and product evolution that is present in purely passive remedies but is inadequately catered for within Ofcom's proposed characteristics. The resultant clarity will help set expectations for all CPs, thus limiting the likelihood of future disputes.
- 3.6 Further, we do not fully agree with Ofcom's assessment of Openreach's current GEA products and their adherence to these characteristics especially with respect to Ofcom's lukewarm assessment of the benefits to consumers of wires-only. It is fundamentally important that Ofcom not only clearly defines the VULA characteristics, but that it is rigorous in its assessment of whether or not Openreach's GEA products are compliant.

³⁰ These factors warrant Ofcom applying both VULA and PIA remedies.

Approach to regulation

- 3.7 It could be that, at some indeterminate point in the future, alternative NGA investment models may prove successful, and these may be enabled by regulated passive remedies such as PIA. However, for the time being at least, it is highly likely that wholesale demand will be concentrated to a large degree on Openreach's GEA products.
- 3.8 Under normal circumstances, innovation would occur without any regulation. Risk-takers would be rewarded and investment incentives preserved. Conversely, regulating new products and services runs the risk of depressing investment incentives and even being confiscatory.
- 3.9 However, Ofcom is required under the EU and UK regulatory framework to conduct reviews of communications markets, taking utmost account of the EC Recommendation which sets out those products and services markets in which *ex ante* regulation may be warranted, given their characteristics. Where Ofcom finds SMP, it is required to impose appropriate regulation.³¹ Having determined that it is appropriate in the circumstances of the UK to review the WLA market, and having concluded that BT has SMP (excluding in the Hull area), Ofcom must regulate BT. In determining to what extent BT should provide access to its NGA network, Ofcom is required to take account of various factors, including the investment made by BT, the feasibility of providing network access, the technical and economic viability of installing and using facilities that would make network access unnecessary and the need to secure effective long term competition.³²
- 3.10 The particular circumstances of BT's NGA network are:

a) Non-contestability

Only BT and cable have realistically been in a position to make large scale NGA investments today. In particular, BT's NGA investments are based on re-using assets (ducts, poles, copper, cabinets etc.) which are simply non-replicable except at a hugely uncompetitive cost.

b) Relatively Low Risk

BT's NGA deployment involves running fibre through some of its existing access infrastructure. The level of risk associated with these existing assets is low. These were developed largely under statutory monopoly protection years ago, with any outstanding risk long since amortised. BT faces a risk relating to the deployment of the fibre itself, associated GEA equipment and the building of additional ducting capacity (in order to support new fibre runs which it would otherwise not have built). However, BT has been deploying fibre and Ethernet into the access network for many years now (for the provision of leased line services) and will, mainly, utilise spare capacity in existing ducts for the purposes of its NGA roll out. As such, (and in contrast with new entrants seeking to build greenfield fibre networks) risk levels on the cost side are low.

The remaining risk for BT is on the demand side: whether consumers will in practice see the benefits of fibre and migrate. But for BT, this risk is mitigated in four ways.

³¹ Articles 15 and 16 Framework Directive (2002/21/EC) and sections 79 and 87, Communications Act 2003.

³² Section 87(4), Communications Act 2003.

First, its deployment of fibre is relatively “thin”. BT is planning to deliver fibre via FTTC to 75% of its planned NGA footprint, thus avoiding some of the costs and risks associated with rolling out fibre all the way to the customer’s premises. BT has committed to spending £2.5bn between 2010 and 2015 but this will be paid for out of BT’s existing CAPEX budgets with most expenditure being back-ended as subscribers are migrated in volume. To put this into perspective, it is worth noting that over the last five years BT’s CAPEX has totalled just over £15bn³³.

Second, there is a valuable strategic benefit to BT in migrating its wholesale customers onto managed fibre-based products. It is able to recover some of the wholesale revenues and margins it has lost over recent years as a result of the success of LLU, a passive product.

Third, BT would face significant risk were it not to deploy fibre. BT would face the prospect of line substitution to widespread public sector schemes (such as Digital Region in Yorkshire) or to Virgin Media’s fast broadband services.

Fourth, BT has the eventual prospect of turning off the copper network, and forcing migration of LLU lines onto its fibre products. Therefore, there is minimal prospect that in the long run its investments will not be utilised.

B’s recent announcement of its intention to expand the coverage of its NGA network to 66% of UK premises even before any real market testing of the product demonstrates this relatively low risk level.

c) Much of the remaining risk can be recovered as a result of non-price regulation

The risk that there is associated with BT’s NGA roll out can be mitigated through the lack of regulated price controls. By allowing BT pricing flexibility, it is able to defer some risk to its wholesale customers in the form of higher pricing.

d) Innovation occurs in a market clearly identified by the European *ex ante* framework and in which BT already has SMP

Ofcom notes³⁴ its obligation to undertake this market review, make findings of market power and determine appropriate regulation, under the EU framework. Since its initial market-opening moves, the European Commission has adopted its revised recommendation on relevant product and service markets. The WLA market is noted as a market susceptible to *ex ante* regulation requiring national regulators to conduct regular market reviews.

These innovations occur in a market in which BT already has been found to have SMP i.e. the wholesale local access market. Therefore, without any regulatory control, there is a significant risk that BT’s could deploy its NGA in such a way as to circumvent existing SMP conditions to distort the market. Wholesale NGA products could be withheld from other CPs, or offered on unreasonable terms and conditions or simply constructed to favour BT downstream business units.

³³ BT results (KPIs pack except FY 05/06 – from Q4 07 press release) – <http://www.btplc.com/sharesandperformance/quarterlyresults/quarterlyresults.htm>.

³⁴ Ofcom, *op cit*, paragraphs 3.54-3.59

e) BT's market power in fibre will increase over the next four years

While there is a chain of substitution today that runs from current generation broadband services into next generation products, it is likely that the constraint exerted over faster services by slower copper-based broadband will weaken over time with some consumers placing increasing emphasis and reliance upon fibre-based broadband.

The scale and pace of this switch in consumer preferences is not fully apparent at this stage but there is enough evidence to suggest that this could start to happen within the lifetime of this review i.e. over the next four years;

- Virgin Media is seeing increased uptake of its faster broadband services³⁵
- Both BT and Virgin Media plan to increase the speeds they can offer e.g. 100Mb/s³⁶
- BT has recently announced an expansion in its planned NGA footprint from 40% to 66% of premises
- There continues to be increased uptake by consumers of video and HD services

VULA Remedy

- 3.11 For these reasons, it is appropriate that Ofcom is proposing to oblige BT to provide VULA and PIA products (network access remedies), and to do so in a non-discriminatory way (given the scope and incentives for BT to exert its market power and distort downstream competition in favour of its retail business). Ofcom's proposed NGA product remedies should meet the requirements to balance the development of competition on this market and to maintain BT's incentives to invest.
- 3.12 Given the impracticality of implementing today a physical fibre or GPON remedy to replicate current copper-based LLU, it is imperative that the VULA product be specified such that it supports maximum flexibility and innovation. Having VULA as the primary regulated access to both the FTTC and FTTP networks is a practical solution at this time.
- 3.13 Ofcom's intention is that VULA would provide access to BT's NGA network that is as close as possible to how LLU provides access to the current generation network. However, rather than providing a physical line, VULA would provide a virtual connection that gives CPs a dedicated link to their customers and substantial control.³⁷ Sky considers that these aims are appropriate.
- 3.14 However, the achievement of these aims is dependent upon BT providing a product that is sufficiently open and flexible. Because, unlike LLU, BT controls elements of the active access electronics, there is a risk that it could act on its incentive to reduce CPs'

³⁵ At the end of 2009 there were 41,400 Virgin 50Mb/s subscribers growing by c40% to 57,900 at the end of Q1 2010 – Source Virgin Media company results and press releases

³⁶ Virgin Media has announced the availability of 100 Mb/s services before the end of this year and is trialling 200 Mb/s services.

³⁷ Ofcom, op cit paragraph 1.19

flexibility and exert more control in order to capture economic surplus and distort downstream competition to the detriment of consumers.

- 3.15 A virtual product which allows CPs a level of control that is as close as possible to that offered by LLU products will offer flexibility and capacity for downstream innovation. Therefore, it is appropriate for Ofcom to define a binding set of VULA characteristics that will provide the right framework to ensure that Openreach's GEA product suite mimics as far as possible the level of flexibility and control available to LLU operators today. In that way, the types of benefits that have accrued from LLU-based competition will flow through as much as possible to retail services based on NGA –namely, lower prices, increased innovation and differentiation.

VULA product definition

- 3.16 Ofcom's set of key characteristics for its proposed VULA product are:³⁸

- *Local*: interconnection should occur locally;
- *Service agnostic*: should be able to support a multitude of services;
- *Uncontended*: dedicated capacity should be available to the end user;
- *Control of access*: sufficient control of the access connection should be made available; and
- *Control of Customer Premises Equipment ("CPE")*: sufficient control of CPE should be available.

- 3.17 These characteristics are provided within a general discussion of the objectives of a WLA product in supporting competition, particularly the objective to be flexible and capable of supporting innovation³⁹.

*"The most effective way to support the development of downstream competition would be to provide significant scope for alternative providers to innovate and differentiate in how they package and deliver services. Therefore, we consider that the benefits of VULA would be greater if it is **provided as a 'raw' product, which allows OCPs to decide key elements of their offering**, such as: the level of bandwidth on offer; QoS; pricing levels; and the range of applications available. This would replicate many of the benefits delivered to consumers through LLU regulation."* (Emphasis added)⁴⁰

- 3.18 Sky agrees with the objectives of needing to provide maximum flexibility and capability to support innovation, and finds the list of five key characteristics a useful set against which to judge specific products in meeting these objectives (albeit with improved wording and an additional sixth characteristic). We are particularly guided by the key principle articulated in the 2003 Strategic Review of Telecommunications, being:

³⁸ Ibid, paragraph 7.233

³⁹ Ibid, paragraph 7.215

⁴⁰ Ibid, paragraph 7.226

“..the principle that regulation should promote competition between competing infrastructures as deep in the network as such competition was likely to be effective and sustainable”⁴¹

- 3.19 This principle has successfully underpinned the provision of LLU, or more particularly, regulated access to MPF. In seeking to replicate LLU in the NGA world, as Ofcom states⁴², its intention is that this principle should be the yardstick against which the likes of GEA, and any product offered to deliver VULA, should be measured.
- 3.20 We consider that Ofcom’s VULA characteristics, while generally sound, could be improved with a strengthening of the wording in the fourth characteristic, *Control of access*, and the addition of a sixth characteristic.
- 3.21 In order to meet with objective of promoting effective and sustainable infrastructure competition at the deepest point in the network, our proposed wording for the first paragraph,⁴³ in the *Control of access* description would read:

*“Given the aim of realising competition benefits by allowing CPs maximum flexibility and innovation in their ability to offer differentiated products to consumers it is necessary for VULA to provide ~~a high~~ **the highest** degree of access control to the interconnecting CP **as technically and economically possible and practicable.**”* (New text in bold)

- 3.22 We also recommend the addition of a sixth characteristic to replicate the flexibility in technology and product evolution that is present in purely passive remedies but is inadequately catered for within Ofcom’s proposed characteristics:

Technology and product evolution and standards

It should be recalled that VULA provides “virtual” replication of the current LLU; a pragmatic proxy for MPF and SMPF. Additionally all recognise that FTTC and FTTP technologies are rapidly evolving. As the relevant technology evolves and new standards emerge, they may support the deployment of, or withdrawal of, features that enhance the support for competitive implementation of access. Such competitively enhancing changes in product features should be planned for and implemented as soon as practicable supported by the publishing of and commitment to a transparent technology/product road map. The product should adhere at all times to industry standards, where available.

Assessment of Generic Ethernet Access (GEA) from Openreach

- 3.23 We strongly disagree with elements of Ofcom’s assessment of Openreach’s GEA products adherence to these principles. The fact that concerns have already arisen with the product specification of GEA underlines the importance not only of Ofcom providing clarity around the VULA characteristics, but also in being thorough and rigorous in its assessment of GEA against those characteristics.

⁴¹ Ofcom, “Final statements on the Strategic review of Telecommunications and undertakings in lieu of a reference under the Enterprise Act 2002”, 22 September 2005 para 1.5

⁴² Ofcom 2010, op cit, paragraph 7.214

⁴³ Ibid, paragraph 7.243

- 3.24 Ofcom's commentary on these characteristics, as set out in the final statement on this market review, can be expected to set the framework for commercial negotiations (and any future disputes) between CPs and Openreach going forward, and therefore it is vital that expectations around product specifications are appropriately set.
- 3.25 In the remainder of this section we critique Openreach's GEA with respect to the VULA characteristics.
- 3.26 Taking each of those characteristics in turn:

Localness

- 3.27 We agree with Ofcom's assessment that both FTTC and FTTP GEA meet this requirement. The 800-1000 serving exchanges⁴⁴ from where BT proposes CPs will be able to connect NGA services to their backhaul networks broadly map to a sufficiently sizeable subset of existing local exchanges. Most LLU operators are present in these exchanges already.

Service agnostic

- 3.28 In FTTP GEA Openreach is proposing to include an Analogue Telephony Adaptor ("ATA") embedded in the Network Termination Equipment ("NTE") in order to support the legacy analogue voice service. By embedding an ATA in this way, Openreach is not offering a purely service agnostic product.
- 3.29 For FTTP GEA to be truly service agnostic it would be offered in a purer, more upstream form without any predetermined service functionality. However, until a wires-only option is made available, excluding an ATA would result in voice services having to be delivered either as derived voice or via an external ATA. Neither of these options is reasonable or practical at this stage.
- 3.30 Ideally, an embedded ATA should be an optional feature of any product offering and not tied to the underlying access product. Access to, and control of, the ATA is addressed below under the consideration of CPE.

Uncontended

- 3.31 Ofcom says that BT's GEA products (FTTC and FTTP) are ostensibly uncontended, i.e. there is sufficient capacity in the access network to ensure peak demands of end users can always be supported. If so,

"..the proposed GEA arrangements would seem to be compatible with our VULA requirements.." ⁴⁵

However, this assessment conflicts with BT's product documentation for FTTC GEA which states

"Within the overall Peak Information Rate for the product, a 20Mbit/s 'Prioritisation Rate' (PR) will also be applied. When a CP sends traffic at an instantaneous rate

⁴⁴ Ofcom 2010, op cit., foot note 96, page 129

⁴⁵ Ibid, paragraph 7.271

above the Prioritisation Rate, this traffic may be discarded if there is Openreach network congestion.”⁴⁶

FTTP has similar restrictions. This text may represent a contractual safety-net rather than BT’s design policy, but we encourage Ofcom to seek clarification from BT on this issue.

Control of access

- 3.32 Ofcom is proposing that VULA must provide a high degree of access control to interconnecting CPs (potentially including Quality of Service – “QoS” - parameters), so they can differentiate in type and level of service⁴⁷. Ofcom, though, concedes that control of some underlying technical elements of VULA will need to remain with BT in order to maintain network stability.
- 3.33 For FTTC, BT is currently applying dynamic line management (“DLM”) and offering three generic profiles with different line speed/stability properties. This appears to Ofcom to offer a reasonable level of control, although Ofcom would expect BT to meet reasonable requests for additional profiles or greater control. We support this principle, and consider Ofcom’s assessment of the current position to be reasonable given that it anticipates BT’s consideration of future reasonable requests.

Control of CPE

- 3.34 Ofcom notes

“..that allowing competing CPs to control the CPE is crucial in ensuring that the potential benefits of VULA are realised.”⁴⁸

We agree with this view. However, BT is proposing to include the active Ethernet components in the Network Termination Equipment (“NTE”) and to embed an ATA in the NTE for FTTP GEA.

- 3.35 A failure to allow CPs to provision and control the active elements of the NTE will impose a severe restriction on the scope for innovation, and significantly undermines the whole objective of having VULA replicate the passive characteristics of the LLU access product. A VULA-compatible product that provides the necessary CP control of CPE is commonly referred to as a “wires-only” product.

FTTC Wires-only

- 3.36 With respect to wires-only, Ofcom concludes that it remains an open question

“..whether greater consumer benefits could be realised by moving the active electronics from the NTE and into the CPE.”⁴⁹

We do not agree with this assessment.

⁴⁶ Openreach, Generic Ethernet Access (GEA) over Fibre to the Cabinet (FTTC), March 2010, <http://www.openreach.co.uk/orpg/products/nga/fttp/downloads/GEA%20over%20FTTC%20Product%20Description%20Issue%204.2.pdf>, section 2.3.2

⁴⁷ Ofcom 2010, op cit, paragraphs 7.243 to 7.245

⁴⁸ Ibid, paragraph 7.246

⁴⁹ Ibid, paragraph 7.277

- 3.37 The key issue is where the point of contractual demarcation lies. At present, BT is responsible for the VDSL modem, and the contractual network termination point (“NTP”) is therefore at the output port of the modem. In a wires-only model CPs would be responsible for the modem themselves and the NTP would move back to the faceplate on the wall (or faceplate plus filter).
- 3.38 The potential consumer benefits of wires-only can be illustrated by considering the evolution of ADSL wholesale products. The first version of IPStream launched by BT was bundled with a BT-supplied modem. When a wires-only version of IPStream was launched, competing CPs were able to bulk-buy modems directly from manufacturers and, ultimately, end users were able to purchase modems from retail suppliers themselves. This led to increased innovation and choice in the equipment available to consumers, e.g. through integration of the modem with router functionality and wireless access in a single CPE. Manufacturers now differentiate their CPE products in numerous ways including the capabilities of the router (Virtual Private Networks, firewalls, etc) and performance and standards of the wireless access link – as well as on price – with significant benefits to consumers.
- 3.39 There is no reason to suppose that opportunities for innovation and customer choice will be any less with VDSL. Indeed, the increasing integration of computing and entertainment functionality within home equipment suggests even greater scope for innovation in CPE leading to improved functionality and performance and lower prices.
- 3.40 Further, single box solutions in the home reduce the points of possible service failure, lower energy consumption and occupy less space in end-user premises. These factors provide CPs with a powerfully efficient way to manage the operation of a customers’ service with clear lines of demarcation. Conversely, should a customer require support from its ISP but a key point of service failure resides outside of the CPs domain, there is clear scope for customer service failure and delay.
- 3.41 Ofcom cites operational issues and interface standardisation as reasons why

“BT’s proposed Ethernet presentation would seem to be a sensible option at present.”⁵⁰

As explained in the Catalyst Communications Consulting technical paper⁵¹,

“...FTTC based on VDSL2 is now ready for the development and deployment of “wires-only” access products”

Thus there is no technical (or operational) reason why BT should not launch a FTTC wires-only product within the next 6-12 months.

- 3.42 We agree with Ofcom’s assessment that BT’s proposed multi-port presentation will have little benefit for consumers in a FTTC context. While voice continues to be delivered over baseband the two voice ports will be redundant, and there is unlikely to be any demand for service providers to offer parallel services via different broadband ports, given the limited overall bandwidth. Whatever the merits of multi-port presentation, the fact that BT wishes to offer it should not be a reason to reject wires-only.

⁵⁰ Ibid, paragraph 7.278

⁵¹ Catalyst Communications Consulting Limited, *op cit*, page 5

- 3.43 Sky and other CPs submitted a Statement of Requirements (“SoR”) to Openreach for a wires-only product which Openreach has subsequently rejected, stating that it is unwilling to reopen discussions around wires-only within the next *three years*. Given Ofcom’s definition of VULA as offering ‘control of CPE’ and the availability of suitable standards, we consider Openreach’s stance to be unreasonable.
- 3.44 In Sky’s view, the consumer benefits from FTTC wires-only are clear, standards are sufficiently mature and it would be reasonable for BT to engage immediately with industry with a view to discussing the wires-only product definition and launch schedule. Sky therefore considers it appropriate for Ofcom to revise its view on FTTC wires-only in its final statement.

FTTP Wires-only

- 3.45 Ofcom takes a similar stance on FTTP wires-only, though noting that the standards are less mature than for FTTC. As explained in the Catalyst Communications Consulting technical paper⁵², standards and test plans for many aspects of GPON are mature, and interoperability for these aspects has progressed well thus far. The higher layer Ethernet functionality test plans are under development in the Broadband Forum⁵³. These, together with associated ‘plugfest’ events⁵⁴, are around a year away. Hence, a wires-only approach in the UK for GPON is probably only around 18 months away.
- 3.46 There is no reason to believe that consumer benefits of wires-only (innovation, choice, value for money) for FTTP will be any less significant than for FTTC. Therefore, we consider that Ofcom’s assessment does not properly reflect the state of play in relation to standards development, nor does it fairly analyse the possible benefits of FTTP wires-only. Given the possibility of future disputes in this area, a more thorough and reasoned assessment of FTTP wires-only that takes full account of the consumer welfare benefits and standards maturity should be produced by Ofcom in its subsequent final statement.

Open ATA for FTTP VULA

- 3.47 Ofcom is proposing that the FTTP VULA product must incorporate “OpenATA” and this must be provided on an Eol basis. OpenATA is an essential capability for MPF-based LLU operators who wish to use their existing voice infrastructure in advance of the development of wires-only solutions, and requiring BT to consume it on an Eol basis is the most effective way to avoid discrimination.
- 3.48 Ofcom is seeking views on whether VoNGA is made up of an Eol OpenATA product if BT chooses not to make significant use of it for its own retail purposes. In that case, requiring Eol might result in additional costs, without providing any assurance of a

⁵² Catalyst Communications Consulting Limited, *op cit*, page 6

⁵³ Ibid, page 6, <http://www.broadband-forum.org/technical/technicalwip.php>

⁵⁴ Plugfest: A test of interoperability of network devices by actually plugging them into a running network. If you plug a device into the plugfest, it either works or it does not.

level playing field for CPs purchasing VoNGA. Ofcom states that its current inclination is to relax the Eol requirement for VoNGA in these circumstances.

- 3.49 In a recent industry briefing note, Openreach announced that it no longer plans to develop VoNGA⁵⁵. While VoNGA (or future products of a similar functionality) will no longer be offered by Openreach, it remains likely that another BT business unit (such as BT Wholesale) will offer services of this type irrespective of whether it self-supplies it downstream to BT Retail. As such, it is still pertinent to consider whether it is proportionate to require future VoNGA-like services offered by BT to consume OpenATA on an Eol basis.
- 3.50 Now that Openreach no longer intends to offer VoNGA-like services, any future supply by BT will move to business units that will be required to assemble their wholesale services using new upstream Eol products from Openreach. It is not a matter of choice. The Undertakings require Openreach to offer all its new products on an Eol basis⁵⁶.

Proposed VULA SMP conditions

Reasonable charges

- 3.51 Ofcom is proposing that BT should have full pricing flexibility over VULA products, including in terms of the absolute level of prices, geographic variations, changes over time and possibly volume discounts and tiered pricing. It is likely that the price of current generation WLA services such as LLU will initially act as a constraint on VULA pricing and so, at this early stage of market deployment, we agree that a charge control and/or cost orientation would be disproportionate.
- 3.52 However, a number of potential concerns over VULA product pricing remain, such as margin squeeze and discriminatory pricing. Given that there will be no ‘basis of charges’ (cost-orientation) condition for VULA products, we strongly support Ofcom’s decision to retain the ‘reasonable terms conditions and charges’ wording in the draft condition FAA11.2.⁵⁷
- 3.53 The current situation with VULA is akin to the WBA market in 2004; at such an early stage of market development many new issues can be expected to arise, and it is important for Ofcom to retain the flexibility to deal with them. Such issues might include:
- margin squeeze between VULA and downstream products;
 - discriminatory pricing of products which are consumed differently by BT and other CPs (including in the extreme case, constructive refusal to provide);

⁵⁵ <http://www.openreach.co.uk/orpg/news/productbriefings/nga/nga01410.do>

⁵⁶ See Section 5.46 of the Undertakings

⁵⁷ Ofcom included “reasonable charges” wording in its Wholesale Broadband Access market review of 2004 (condition EA1.2) but in the 2008 WBA review decided to drop this wording on the basis that to retain it would be at odds with its decision not to impose price regulation. Although CPs argued for the wording to be retained, Ofcom considered that they were unable to identify any compelling scenarios where it would be needed, given that the obvious issues had already been addressed.

- pricing of related services, such as migrations between CPs and between products, which are discriminatory or otherwise harmful to competition.

- 3.54 Ofcom has previously issued margin-squeeze related directions under "reasonable charges" conditions⁵⁸, and it is vital that Ofcom retains the flexibility to do so in the context of VULA, if appropriate. Sky would welcome an explicit statement from Ofcom that Condition FAA11.2 will be interpreted to preclude a margin squeeze and that Ofcom would consider issuing a decision to set a margin under this condition in future, in appropriate circumstances.
- 3.55 Finally, reasonable charges conditions have also been used before by Ofcom to set appropriate migration prices⁵⁹, and it is important that Ofcom retains the flexibility to intervene in a similar way for VULA.
- 3.56 As a final point, we note a requirement that VULA pricing is "fair and non-discriminatory"⁶⁰, but does not reference "reasonable". Sky presumes that this is an oversight on Ofcom's part (given the wording of Condition FAA11.2), and that a reference to "reasonable" will be inserted in the appropriate place in the final statement.

Non discrimination

- 3.57 Ofcom is proposing to introduce (via condition FAA11.3) a new stronger variant of the 'no undue discrimination' condition which seeks to replicate the Eol obligations contained in the Undertakings. Condition FAA11.3 requires that VULA shall be provided to third parties on an Eol basis, and BT shall not provide VULA services to itself unless it provides them to third parties at the same time on an Eol basis.
- 3.58 We agree with the principle of requiring Eol for VULA, because without it there is a danger that BT will exploit its SMP in the WLA market generally, and, in particular, its emerging power in the provision of fibre-based services, by discriminating against other CPs in the provision of VULA services.
- 3.59 However, there are likely to be a range of VULA product variants and BT could unduly favour those that are only consumed by its own downstream business, (while still offering each individual variant or combination on an Eol basis). If not all inputs are common across these different variants, BT's actions may not be fully covered by condition FAA11.3.
- 3.60 This issue of "notional" or "parallel" equivalence has become increasingly important since BT's downstream businesses decided not to consume MPF⁶¹. Now, BT's two major retail competitors (other than cable) – TalkTalk and Sky – follow a different consumption model to BT Retail and, as such, the incentive for discrimination by

⁵⁸ Ofcom, 'Direction setting the margin between IPStream and ATM Interconnect Prices', 26 August 2004.

⁵⁹ For example, in 2004, Ofcom intervened to set charges for migrations in the wholesale broadband access market using SMP Conditions EA1.1 and EA1.2. In view of the importance of migrations in facilitating competition (and the risk of discrimination in favour of BT's own downstream business), Ofcom decided that it was fair and reasonable to set the charges on a cost-oriented basis.

⁶⁰ Ofcom 2010, op cit, paragraph 7.251

⁶¹ Similar issues arose in relation to BT's Eol obligations under the Undertakings in relation to the provision of different IPStream variants which were resolved through BT's agreement to provide a new IPStream product. Sky seeks Ofcom's assurance that it will monitor closely BT's compliance with its SMP obligations to prevent any downstream BT divisions gaining an unfair advantage from the likely future provision of VULA by Openreach.

Openreach in favour of the WLR+GEA variant (compared to GEA+MPF variant) is a strong one.

3.61 Therefore, we are concerned that the proposed condition, as currently drafted, is too narrow, and will not address the problems which may arise where BT's downstream divisions and other CPs consume VULA-type products in different ways.

3.62 Examples of situations where the consumption of "notionally" equivalent inputs might give rise to discrimination include:

a) accredited install

The installation of GEA will require a visit to the customer's premise as well as possible engineering work at the street cabinet and exchange. Sky has its own engineering field force that visit customer premises to install its satellite receiving equipment etc. For improved customer experience and lower costs, the Sky engineer could be accredited to undertake the installation of the GEA service within the premise.

While, Openreach has agreed in principle to offer accredited installation, it has the scope to discriminate both in terms of price and performance in favour of the installation services consumed by BT Retail at the expense of the accredited install service. For example, the accredited install price may not adequately reflect Openreach's actual saving in not performing the home installation. Further, the process of co-ordinating Sky and Openreach installers (to home and cabinet respectively) could compare less favourably to the coordination of fully managed installations consumed by BT Retail.

If Sky were to pursue an accredited install approach, it and BT Retail would then end up actually consuming different sets of inputs. This difference could give rise to discrimination, in that Openreach would have the incentive to favour, both on price and provisioning, its own fully-delivered install.

b) Possible future variants of VULA

Openreach today offers three generic Dynamic Line Management ("DLM") profiles for FTTC-based GEA, with different line speed and stability properties. While we have accepted the practicality of this approach as reasonable today, Ofcom have noted that they would expect Openreach to meet reasonable requests for additional profiles.

Consequently in the future, CPs may be consuming inputs with different speed or QoS characteristics than those consumed by BT Retail and, as a result, there is scope for Openreach to favour the variants that are used by BT Retail.

c) Different consumption of bundles

Today, Openreach bundles baseband voice capability as either GEA+WLR or as GEA+MPF. A standalone variant of GEA without either WLR or MPF is under consideration, however, even this would not completely eradicate the scope for discrimination by BT. While a standalone product itself could be made available

either with MPF or WLR, BT still has the capability to favour one of these bundles over the other. In reality, this is already happening with GEA+WLR enjoying preferential migration paths (and commercials) compared to the MPF-variant⁶².

GEA+WLR is the product bundle that downstream BT business units consume and enables BT to earn additional call conveyance, termination and origination revenues compared to the MPF-variant.

3.63 Accordingly, given the likelihood that there will be different variants and product combinations consumed by CPs, we request that Ofcom provide stakeholders with the necessary safeguards and clarification in the final statement that draft Condition FA11.3 will cover the “notional” or “parallel” equivalence type issues identified above. In relation to the wording of the SMP Conditions we consider that there are two options:

- Condition FAA11 – Requirement to provide Virtual Unbundled Local Access – we propose strengthening the definition of “Equivalence of Inputs” provided in FAA11.5 by amending the second sentence commencing with the words “*The Dominant Provider*” by inserting the following after the words “*unless the provision*”:

“..of Virtual Unbundled Local Access (irrespective of any variants of Virtual Unbundled Local Access and/or whether different products are consumed by Third Parties with Virtual Unbundled Local Access)...”

- Reinstate the general non-discrimination obligation in relation to VULA, which would act as a “fall back” to the stricter Eol obligation. This would require the wording of FAA11.3 to be extended to include the broader non-discrimination provisions of FAA3, or by deleting condition FAA3.3 so that VULA is no longer excluded. In this regard, it would also be prudent to indicate that the more precise Eol obligation is without prejudice to the generality of the broader non-discrimination obligation.

3.64 The important issue, however, is that clarification will be provided to stakeholders, through the WLA statement, that BT will not be able to place its own downstream businesses at a competitive advantage compared with other CPs through such conduct (i.e., “notional” or “parallel” equivalence.)

3.65 Moreover, we consider that it would provide additional comfort to stakeholders if Ofcom confirm in the final statement that, in appropriate circumstances, Ofcom would be willing to issue a direction pursuant to Condition FAA 11.4 to address any concerns that may arise, with particular reference to Eol, in the provision of VULA by BT. This is, of course, without prejudice to Ofcom’s ability to take appropriate enforcement action.

⁶² We understand that Openreach have proposed simultaneous provision of WLR and GEA while this option is not available for GEA+MPF (there is a time lag between GEA and MPF going live).

SLA/SLG – the need for an explicit provision

- 3.66 Ofcom says that it considers the general principles in the March 2008 SLA/SLG statement should apply to PIA⁶³ but makes no mention of VULA. Given that VULA is likely to be the most important basis for the provision of next generation broadband for the foreseeable future and the incentive on BT to discriminate on, amongst other things, service level performance, we consider these SLA/SLG conditions should apply equally to VULA and request that Ofcom clarify how this will be reflected in the SMP conditions.

WDM and wavelength unbundling as alternative/successor to VULA

- 3.67 Ofcom concludes⁶⁴ that wavelength unbundling (where each CP has a separate wavelength) may support an effective access remedy in future, but standards are at a very early stage and technology will not be available within the timescale of the current review.
- 3.68 Sky agrees with this assessment, but notes that the lead times for migrating to a wavelength unbundling model will potentially be long, and it will be important for Ofcom to provide as much clarity as possible over future evolution of the remedies. Given the rapid pace of technology change, there may be merit in Ofcom updating its assessment at an interim point, rather than waiting for the next market review.

⁶³ Ofcom 2010, op cit, paragraph A11.7

⁶⁴ Ibid, paragraphs 7.45 to 7.47 and 8.19

SECTION 4. NEXT GENERATION ACCESS PASSIVE REMEDIES – PIA

Passive access to BT's ducts and poles is justified

- 4.1 As discussed above, an active VULA product can emulate many of the characteristics that are normally associated with purely passive products. However, the product is still an active one whereby BT exerts a level of constraint and control that would not be present with a purely passive product.
- 4.2 In addition to the presence of VULA, the availability of purely passive access to BT's network could make the market more contestable by proving, in certain circumstances, to be the deepest point in the network from where competition is economically sustainable. In a similar vein to LLU, passive access could foster innovation, differentiation and price competition to the ultimate benefit of consumers.
- 4.3 To date, only BT and Virgin Media have rolled out super-fast broadband infrastructure in any scale but, just as there was with LLU, there remains the prospect of a further wave of investment by the private sector as well as other parties such as community or regional schemes and public initiatives. This second wave, in turn, could expand NGA coverage and result in further retail product innovation.
- 4.4 The success of NGA in retail markets is the first step. A demonstration of the extent of market opportunity will help de-risk such business cases. So too will the availability of scalable, robust, fit-for-purpose passive wholesale products from BT.
- 4.5 Ofcom adheres to the principle that regulation should promote competition between competing infrastructures as deep in the network as such competition was likely to be effective and sustainable. While VULA is likely to be that point for most CPs today, it is also likely that purely passive access to BT's access infrastructure will be viable and practicable in certain cases.
- 4.6 Therefore, given the non-replicability of its access infrastructure, it is appropriate to require BT to offer PIA should sufficient interest materialise. Equally, it is too early and disproportionate for Ofcom to be overly prescriptive as to the nature of these products. We think Ofcom has struck the right balance in requiring BT to produce reference offers for duct and pole access. If there is sufficient interest in taking the PIA products, BT should then be required to launch productised passive services.
- 4.7 While it is too early to be overly prescriptive, it is important that some high level passive remedies are imposed during this market review. This is because;
 - There is a likelihood that demand for passive inputs will materialise over the next four years (the period under consideration of the Wholesale Local Access Market Review) as demand for NGA based services develops and operators build up their GEA customer bases;
 - It will take a long time to industrialise the required products and processes (as experienced with LLU where the initial bow wave process started in 2001 but workable, industrialised processes took a further 5 years to develop);

- Identifying the requirements now for wholesale passive inputs will reduce the risk that Openreach's roll out of its own NGA forecloses competition based on passive inputs.

PIA Design Objectives need to be fair

- 4.8 In terms of Ofcom's proposed design principles⁶⁵, we agree PIA should promote the efficient use of the access network. This is particularly pertinent now as there will be increased demand for finite duct resource due to Openreach's own FTTC and FTTP roll out plans.
- 4.9 The allocation of this resource needs to be a fair one. As such, it is important that CPs and BT are able to reserve capacity on a non-discriminatory basis. Two of Ofcom's design objectives reinforce this expectation;

"Promote efficient usage of the existing access network physical infrastructure avoiding capacity reservation or usage rules that unnecessarily 'sterilise' spare capacity."

And

"allow BT and CPs to reserve spare capacity in existing infrastructure on an equal basis."

- 4.10 However, these objectives appear to be undermined by the requirement to ...

"Not unduly hamper BT's NGA Network roll-out, for instance by preventing it from reserving spare capacity for its own NGA programme..."

Ofcom should make it clear that there should be no preferential treatment of BT's fibre roll-out over any other CP's plans to access BT's ducts and poles.

- 4.11 Further, and perhaps more importantly for now, BT's NGA roll out plans cannot be allowed to affect detrimentally the provision of existing Openreach services like provision of co-mingling and LLU backhaul. BT has an existing set of obligations with respect to the supply of copper-based products like LLU. If BT wishes to roll out fibre as well, then it is free to do so but, if necessary, it should do so out of incremental resource. It is not acceptable for performance levels to drop for existing services because resources are being re-diverted to BT's own NGA project.

- 4.12 We note Ofcom's public commitment to

"continue to provide protection to current generation broadband consumers as appropriate".

⁶⁵ Ibid, paragraph 7.147

In this regard, Sky urges Ofcom to keep a watchful eye and maintain its

“..focus on local loop unbundling”

to ensure that BT’s NGA roll-out does not adversely impact its LLU provision in accordance with its ongoing SMP obligations.⁶⁶

A PIA remedy is practicable

- 4.13 We consider industrialising the PIA products to be realistic for BT. There is precedent in how BT delivers fibre to premises today as part of its existing leased line portfolio. Further, BT is now deploying its own NGA in scale. The internal processes that BT has developed to deliver these fibre-based services can act as a starting point for mapping out a future template for PIA product processes. Any PIA product should also build on the experiences of overseas NGA deployments such as those in France and Portugal.
- 4.14 While productising passive remedies like duct access will present challenges, they are by no means insurmountable. Many of the issues envisioned today are very similar to those raised prior to the launch of LLU. Issues of health and safety, security, training and records were all cited as reasons why LLU would prove unworkable but, now, LLU is an established and successful product with, by and large, reliable and practicable processes.
- 4.15 In fact, some of these processes could form a basis for PIA. For example, many CPs wishing to access BT’s ducts would expect to leverage their existing unbundled infrastructure. This means that existing co-mingling space (or Access Locate) would be used for the hosting of FTTx-related equipment such as Optical Distribution Frames (ODFs).
- 4.16 Outside the exchange, CPs will want to aggregate their fibres entering the exchange from the primary distribution network⁶⁷ before running a cable into their dedicated spaces. Aggregation will normally be executed within a cable chamber immediately outside the exchange building. This type of requirement is not new. BT already offers similar services today through Cablelink and In-Span Handover (ISH).
- 4.17 CPs wanting to plan their deployment of fibre in BT’s ducts will want access to BT’s duct records and maps. Ideally, these would be made available to CPs in electronic format through an online portal in much the same way as they are in France. BT’s records may not be accurate but there is still considerable value in undertaking a desktop survey prior to a site survey. This is common practice at BT itself when it provisions existing fibre access products for businesses and CPs.
- 4.18 CPs could then plan a fibre route (perhaps augmenting sections of the route with their own FTTx build) and dispatch their own surveyors to assess the viability of their plans. Again, this is not so different to existing BT processes where a site survey follows a desktop survey. The difference being that it is the CP (or its contractors) who conduct the survey rather than BT itself.

⁶⁶ Ibid, paragraphs 2.42 and 2.43

⁶⁷ E-side, between the local exchange and the primary cross-connect point (PCP, typically located in the street cabinet)

- 4.19 There will need to be a set of common engineering standards to which all CPs should comply when planning and installing fibre in BT's ducts (France Telecom has established a set of standards to which all CPs work in France). These standards and the processes that support the duct sharing remedy would need to be the same for all CPs and downstream BT business units in order to avoid discrimination.
- 4.20 It is important to note that BT has been planning and installing fibre into ducts in the access network for a long time. Wholesale Ethernet Services (WES) circuits which involve fibre termination at the customer premise have been installed in their tens of thousands in the last few years. There is a well-established process for planning, surveying and installing these services. A duct sharing remedy would mean that some parts of the process could be conducted by other CPs and their contractors as opposed to other parts of BT. In fact, BT outsources some of these functions to third party contractors already.
- 4.21 As demand for access to an incumbent's civils infrastructure increases, one would expect processes to evolve. This was certainly the case with the roll out of LLU in the U.K. The initial bow wave processes that characterised the product in 2001 were very different to those that were in place when the major roll out of LLU occurred between 2004 and 2008.

PIA prices for existing assets should be cost oriented with no risk premia

- 4.22 We agree that PIA should be supplied at cost oriented prices. As already discussed, today the case for investment by CPs based on access to passive network elements is risky. Without any assurance that BT would be subject to some form of regulatory pricing constraint (that allows a reasonable rate of return) it is unlikely that investment will be forthcoming.
- 4.23 Where there is existing spare capacity in BT's access network, providing PIA would be at low risk to BT because the original infrastructure investment has already been made and was put in place to meet the demand for existing, low risk access services. In fact, all users of the existing ducting infrastructure would benefit from the scale and scope economies that flow from filling up spare duct. Therefore, in these circumstances, prices should be cost oriented without applying any risk premium at all.

Who should pay for additional build?

- 4.24 However, any new build passive infrastructure required could be subject to increased risk to BT. For example, there is a risk that the requesting communications provider could potentially become insolvent before then, leaving BT with under-utilised ducts. Furthermore, BT's access network is not expected to be capacity constrained forever. It is highly likely that, once fibre-based access services have become established and widespread, BT will move to switch off and remove its copper access network. This process will free up duct space (albeit this is not expected to a significant extent during the course of this review period).
- 4.25 These two factors means that the building of new duct infrastructure carries some risk to BT and, as such, it may be appropriate to allow BT to recover this risk through some

form of pricing premium. While the principle may be reasonable, applying a risk premium in practice may be impractical.

- 4.26 Any access-seeker wishing to deploy fibre using BT's PIA product in any scale is likely to require BT to deploy at least some new build because research shows that, for many end-to-end fibre routes in BT's network, there is no duct capacity. From a practical point of view, it will be difficult to apply disaggregated risk profiles to different types of PIA deployment based on whether any new build was required or not.
- 4.27 Therefore, it may be more practicable for BT to announce its new duct deployment plans and invite other CPs to pay for additional capacity. The charge that CPs pay should reflect the incremental cost of BT deploying the multi-chamber ducts that would be required to support the CP(s)' requirements. CPs would then have the option to use this capacity for their fibre, paying a share of the full cost of the duct at the point that they take up the option.
- 4.28 It is the pricing of this option that could more practically allow BT to cover any increased risk. Any ongoing pricing thereafter would be the same as other PIA provided in existing ducts and poles without any risk premium being built-in.

Sky

June 2010