

BT Response to ERG Consultation on Next Generation Access

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BT RESPONSE TO ERG CONSULTATION ON NGA

General

Regulation of NGA, whether it is FTTH or FTTC, requires a fresh look at the market place and at first principles of regulation. The issues relate to providing a climate conducive to prospective network investment, rather than regulating the use of sunk investment. Regulation and regulatory policy should set out clearly how, where, and why regulation of assets will take place, in order that timely and efficient investment is facilitated. Regulation should focus on delivering benefits to end-users, both consumer and business.

This consultation starts from the premise that NGA networks are being rolled-out in member states and that the appropriate question is how NGAs should be regulated in a 'mature' state. However this ignores the reality that there is currently little prospect of a mass roll-out of NGA anywhere in Europe and hence a more appropriate question at this stage might be whether, on the assumption that the very high bandwidth services delivered over NGA are required now or in the future, regulators should and/or are able to encourage NGA investment through appropriate regulatory approaches and remedies.

Given that all operators face commercial challenges in relation to large-scale fibre roll-out, one area that requires more work is in looking at appropriate regulatory regimes and financial/funding frameworks that properly address the risk-return trade-offs and the long pay-back periods associated with such large investments. BT believes that there is scope for considering some innovative approaches, consistent with an overall approach based on access equivalence, which might encourage a faster and more comprehensive deployment of NGA across Europe. This is an area not properly addressed in the ERG consultation.

NGA deployment will be heavily influenced not just by technology and regulation, but also by physical environmental factors, such as population density and town planning choices, existing competing networks (such as cable), and existing broadcast platforms. These factors will heavily influence the timing and technology used in any NGA deployment. It is necessary to be highly cautious about making generic assumptions which do not take account of these very local factors.

NGNs and NGAs will increasingly be used to provide, not only access to electronic communication services, but also access to broadcast and information society services. In fact, NGAs would see little if any demand if the need were simply electronic communications based – though this is not to suggest that such broadcast and information society services will be new or emerging services and thus, potentially, qualify for regulatory forbearance.

It is likely that service differentiation will take place higher up the value chain (in broadcast content, or in providing a closed user group for VoIP services), rather than in the network characteristics. It will be more important that NGA network services are provided with appropriate characteristics to enable a range of services to be offered, than engineered to allow competition across a broad spectrum of technical

characteristics. Nevertheless, some variety of wholesale bitstream parameters must be offered since, as we argue later, fibre unbundling and sub-loop unbundling are unlikely to be economically viable.

A key element omitted in the ERG consultation is the need for transparent plans and open consultation by incumbents with other operators.

Q1. - Do you agree/disagree with the general (ERG) approach?

As mentioned above BT is concerned that the ERG paper takes as its starting point a presumption that some form of fibre access will inevitably be deployed across a substantial proportion of Europe in the near future. Given the currently rather poor business case for such deployment in part or all of the territory of many Member States it would be better to approach the issue by considering appropriate regulatory pricing methodologies and financial frameworks.

Furthermore, BT is concerned that the ERG seems to approach the issue by examining what could be regulated rather than asking why and where regulation might be necessary. The ERG paper also assumes that incumbent operators will normally be the first movers and/or will be the focus of regulation, when this may not be the case. All access technologies including cable, wireless, municipal networks, and broadband mobile need to be considered.

The basic business cases for VDSL or FTTH by an incumbent operator are uncertain, but the business case for metallic sub-loop unbundling by an entrant is worse. The additional costs resulting from pre-planning or pre-provisioning a sub-loop co-location facility may delay NGA deployment for many years and if incurred such costs may never be recovered. On present evidence BT believes that sub-loop unbundling is likely to be economically viable only for a few niche suppliers in very limited geographies, perhaps addressing a certain class of customer. In contrast BT agrees with the ERG that a wholesale bitstream service is likely to be even more important in the future and should be the main focus of regulatory attention.

Although BT favours a technologically neutral approach to market definition, and thus would agree that fibre should be included in assessing SMP or bottlenecks in Market 11, BT believes that technology, operational, and proportionality considerations applied to realistic PON and DWDM systems will generally preclude fibre or wavelength unbundling as a remedy (including unbundling at the passive optical splitter). In addition the extra customer service benefits of soft-switching that an Ethernet based wholesale product would provide would greatly reduce barriers to switching, and allow potentially innovative network services to be deployed.

BT notes that the ERG has developed its arguments principally in the context of mass-market consumer deployment – though we do not believe that sub-loop or fibre unbundling will make economic sense even in these circumstances. If Europe is to achieve the goals set out in i2010 it will be critically important to ensure the competitive supply of broadband services to business customers. The density of such customers is sufficiently low to make unbundling a highly non-viable strategy in most situations and thus to require a good non-discriminatory wholesale bitstream offer,

with levels of service appropriate for business needs, coupled with technologically neutral wholesale leased circuit facilities.

The ERG raises the question of duct sharing but fails to address the practical realities which have meant little interest to date, from incumbents or entrants, in sharing typical telecommunications duct. There is no doubt that the fault rate in the local access network is proportional to the number of interventions in the duct/cable and that duct sharing will lead to a significant increase in faults with considerable problems in attributing liability. Furthermore, spare duct space may only be available in part of a relevant area and, where ducts are full, ongoing metallic loop unbundling regulations may make it impossible to remove obsolescent metallic cables. Other problems are that unexpected deterioration may have occurred in the duct network or that the records may not reflect the true occupancy position. It would be extremely difficult to develop codes of practice or regulations that would ensure equivalence of access for other operators, and proper commercial payment arrangements for use and maintenance, while allowing the original owner the legitimate freedom to use its own assets in the future. This analysis may, however, be different for duct which takes the form of large bore tunnels or sewers, where access or sharing may be easier and give rise to fewer problems. Thus the debate should not be limited to “ducts used for electronic communications services” and indeed may be better focussed on duct-like facilities that are not currently so used.

The considerations applicable to in-building wiring where there are multiple tenancies/owners are also very different and some form of regulatory intervention may be needed.

BT believes that if an NRA decides to mandate facility sharing, the obligations should apply equally to all operators controlling such a facility. To avoid the need to analyse very small geographical markets it may be appropriate to use either Art 12 of the Framework Directive or Article 5 of the Access Directive (covering end-to-end interoperability).

Q2. - Do the scenarios describe the relevant roll-out alternatives for NGA?

The scenarios are reasonably comprehensive for fibre but neglect alternative wireless and cable scenarios. BT believes that a technologically neutral analysis should include these.

The bit-rate statements on page 8 of the document, though qualified by a footnote, seem optimistic and do not fully reflect the difficulty of achieving the “headline” bandwidths mentioned.

Q3. - Do you agree/disagree with regard to the conclusions on economics and business case studies?

As we have expressed in other answers above BT believes that the economics of NGA deployment and the associated business cases are subject to large variations due to local factors. On the supply side, population density (e.g. multi-occupancy buildings),

availability of suitable infrastructure (e.g. large scale of Parisian sewers making duct sharing straightforward), and technological developments (e.g. small scale VDSL equipment that could significantly reduce the costs of a focussed FTTC deployment) are significant. On the demand side, the level of competition in broadcast content, and penetration of pay TV etc, are also important. As a result any attempt to draw general policy conclusions from individual studies is fraught with difficulty.

The specific questions addressed in the studies that, for example, seek to define market levels achievable with and without duct access, to assess the viability of VDSL vs FTTH, or to estimate the additional costs of a particular fibre deployment strategy are therefore unlikely to be valid outside the specific conditions of that study. Although they may be illustrative of particular problems they are not likely to form a positive base for general policy or regulatory conclusions.

An exception to this however is the case of sub-loop unbundling where BT believes that this is not an approach which supports competition at the deepest sustainable level of investment in NGA networks. Our response on this topic to a recent Ofcom consultation is attached as Annex 1.

BT is also sceptical about models which assume significant increases in ARPU. The “build it and they will come” approach to new revenues has not been a great success in, for example, 3G mobile networks to date.

Q4. - What is your opinion on the regulatory implications and on the evolution of the ladder of investment? Additionally please provide more specific comments regarding the issue of multicast capabilities and their regulatory treatment.

BT believes that sub-loop unbundling and Layer 1 access to the physical layer in the access network is unlikely to be economically feasible and that ladder of investment policy should not encourage operators down this route for either mass market broadband or business customer connectivity. BT also notes that the Ladder of Investment philosophy needs to be considered both in terms of mass market communications providers and specialist B2B communications providers. The latter will rarely have the density of customers to justify access investment and will need regulated access to any bottlenecks. For B2B providers, the ladder of investment approach is of limited application and regulated tariffs should not attempt to incentivise local access investment that will almost invariably be unjustifiable with the B2B business model.

Ladder of investment theory was developed in the context of existing network technologies and topologies. Given the different technological and economic aspects of fibre deployment the ladder approach may not be applicable in the case of access and backhaul technologies using fibre.

Multicast technologies and standards are still evolving so it is premature to open a debate on regulatory treatments. The extent to which multicast capabilities will be embedded in the access network as opposed to the core network will be a complicated function of backhaul costs and the requirement for duplicated bitstreams near the edges of the network.

Q5. - Do you agree/disagree with the conclusions?

BT agrees that the most effective strategy for NGA deployment will utilise a mixture of technologies and that developments are likely to reinforce the importance of scale and scope economies, thereby reducing the degree of replicability.

BT agrees that in the case of imposing obligations on an SMP operator rolling out NGA the overall “package” of existing and additional (or amended) remedies must be proportional in order to avoid overregulation.

Although BT supports a technologically neutral definition of Market 11, it does not believe that the implied comprehensive Layer 1 unbundling proposals for fibre, for backhaul from the cabinet, for duct sharing, or for Layer 1 access to metallic sub-loops, are required or would be proportionate. BT does not believe that duct sharing should be considered as an ancillary service to Market 11. The additional costs associated with such obligations risk seriously delaying NGA investment. BT does not believe that there is any requirement for quality of service differentials in the mass consumer market that would drive a requirement for NGA Layer 1 unbundling or even a significant range of diverse bitstream access products.

BT notes that there may be advantages to the consumer from a common (e.g. Ethernet) presentation so that terminating equipment can work with different CP systems and in different locations.

BT agrees that Market 12 already comprises all kinds of wholesale broadband access products but would welcome further clarification from the ERG that this is the case. BT believes that Bitstream access will (not “may”) become more important in future and BT agrees that “wholesale bitstream offers may have to be enhanced to allow for the provision of high quality services and adapted to changes in the SMP party’s network”. Wholesale bitstream services will need to offer a business level of QoS (inc. provision, repair and availability).

The ERG paper suggests that sub-loop and fibre unbundling may be required in order for communications providers to obtain the quality and control levels they need. But in practice a greater focus on the details of wholesale bitstream offers may be a better way to resolve the issue.

As regards the ladder of investment, BT does not believe that sub-loop unbundling is the next step beyond LLU, as it attempts to drive competition beyond the deepest sustainable level of investment. This means that NRA policy should promote service competition at this bottleneck level – until alternative technologies remove the bottleneck – rather than mandate costly efforts to make the sub-loop model viable.

Annex 1 – BT’s comments to Ofcom on Sub-Loop Unbundling / Co-location of Equipment at the Cabinet.

BT does not view a “multiple SLUO” model as one which supports competition at the deepest sustainable level of investment in NGA networks. In our opinion, the creation of an EOI “layer 2” product which is able to benefit from reduced engineering costs through aggregation of multiple CP bandwidth requirements probably offers the best opportunity for efficient and sustainable investment in an NGA network. Such a product would also represent a natural development of the competition model which exists today.

It should also be noted that BT was obliged to provide unbundling at the cabinet in 2000 by Oftel, yet, except for a few trials, very little interest has been shown in the product to date. There are a number of reasons for this, but primarily it is one of scale and economics. For example a major UK operator (and Openreach customer) has estimated that the unit cost of delivery of service via cabinet level SLU is approximately four times that of exchange based LLU. In addition, when compared to the roll-out plans of exchange based LLU operators today, the challenge facing potential SLUOs looks daunting. Currently LLUOs plan to unbundle approximately 1,200 exchanges out of a population of approximately 5,500, because a minimum target volume of customers (thought to be generally about 300 lines) is required for the deployment to be economically viable. There are approximately 90,000 cabinets in the UK and each has of the order of 300 lines connected to it. The economic threshold can rarely be realised at smaller exchanges or cabinets where the breakeven point is potentially even higher due to lower customer densities and utilisation and higher deployment costs. The challenging economics facing SLU have been confirmed by the recent Analysys report for OPTA on the business case for sub loop unbundling in the Netherlands.

In addition there are a number of technical, operational and planning issues to consider with SLU:

- The current SLU model requires an operator to build an alternative cabinet within a short distance of the Openreach cabinet (100m maximum but in practical terms this is reduced by up to 50% depending on the type of equipment in the cabinet (VDSL or ADSL2+) and the number of other operators also unbundling the cabinet).
- There is also a time based aspect. A CP who chooses to unbundle a cabinet may find that their equipment does not function to the initial standard at a future point in time due to other competitors also choosing to unbundle at the same cabinet. In this sense the SLU product design may not be inherently stable.
- After the SLU operator has gained access to the unbundled sub loop, and has placed xDSL equipment in their cabinet there are service restrictions. Because of the potential cross talk issues each cabinet has a maximum power level that can be used within the ANFP (Access Network Frequency Plan). The ANFP is designed to protect the services being provided over copper cables in the cabinet from either another SLU operator or from the exchange.

- The final engineering component, other than street mains power which can be difficult to provide, is to connect the SLU operator's cabinet to a point where they can connect to their backhaul network. This is often the local BT exchange.
- Additionally, whilst there are published prices for the tie cable that Openreach provides between the SLU operator's cabinet and a new cross connect frame built within the existing BT cabinet, many of the additional costs are based on charges for civil engineering works and therefore are priced per installation due to localised variations in costs, which makes build or buy decisions more complex for an investing CP.

The economics of backhaul between an alternative SLU cabinet and an SLU operators' POP are challenging. Whereas a single provider of an EOI bitstream product can offer the benefits of aggregation to all CPs who have customers connected to a cabinet, the opportunity for a single competing CP to efficiently aggregate traffic is very low. In this respect, it is also worth noting that Ofcom currently regard backhaul, even at a local exchange level, to be an economic bottleneck. In fact, BT is finding that the financial case for SLU still appears challenging, even with assumptions of substantial CP traffic aggregation built in, and therefore we are led to the conclusion that there are few realistic business opportunities available to CPs unless a more integrated wholesale product is developed.

In summary a regulatory model for SLU which is intended to support multiple self build SLU operators looks to have a number of challenges:

- It may be expensive in both capital and operational terms.
- It may have uncertain technical performance parameters which vary over time and may be potentially fault prone.
- There is potential for congestion and multiple street-corner cabinets in targeted areas, with issues of "land grab" and monopolisation of limited space in others.
- National network design and interconnection may become increasingly fragmented and increasingly uneconomic, leading to duplicated and ultimately redundant investment. Such fragmentation could also prevent FTTC becoming a "stepping stone" in an integrated plan for FTTP deployment at a later stage in network development.
- Even with the most optimistic assumptions, a multiple SLUO model only looks to be economic in very small regions of the UK (perhaps at a single cabinet level).
- There is also little logic to suggest that a multiple SLUO model is the best route to major service innovation for end users.
- For all the reasons given above, efficient investment at a more appropriate level in the network will make high bandwidth wholesale services available to all CPs, without the need for duplicated investment, allowing funds to be invested in product and customer service innovation and differentiation.