ERG Consultation Document on
Regulatory Principles of NGA (ERG (07) 16

Response from the Broadband Stakeholder Group, UK

BSG
Broadband
Stakeholder
Group

Introduction

The BSG is the industry-government forum in the UK that is tackling strategic issues across the converging broadband value chain. It provides a neutral forum for collaboration for organisations across the converging broadband value-chain (from the telecoms and technology sectors through to content providers and rights holders) and aims to be a 'critical friend' of government and the regulator, both of whom are directly represented on the BSG in the forms of DTI, DCMS and Ofcom.

In April, the BSG published a report 'Pipe Dreams? Prospects for Next Generation Deployment in the UK' (www.broadbanduk.org).

Within his introduction to the report, the Chairman of the BSG, Kip Meek, commented as follows:

> *The specific issue the report addresses is that while the underlying demand for greater bandwidth is likely to continue to grow rapidly, a variety of factors – notably the current business models associated with broadband and the balance of risk and reward associated with investment in advanced infrastructure – mean that it is not clear that this demand will be served.*

Whilst the BSG work programme took a wider perspective in terms of the possible NGA technologies and potential barriers to investment in next generation access networks, there are many parallels with the ERG document.

In summary, the BSG aligns with the ERG view that evidence is limited in terms of both demand for future capacity and the plans for NGA roll out but agrees that it is appropriate to consider the 'deeper fibre' scenarios, i.e. FTTCab and FTTH/FTTB. The following extracts from the BSG report summarises the BSG position:

> *There is a range of technologies capable of delivering next generation broadband. Although wireless technologies will play a part, next generation broadband will require the deployment of optical fibre deeper into the local access network, either to the street cabinet or directly to the customer premises. This will require a huge capital investment. The cost of providing fibre to the home to 90 per cent of UK households has been estimated to be some €14bn.*
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> *Currently, no UK operators have indicated an intention to deploy a national NGA network. Given the high capital costs involved and the substantial commercial risk in deploying a NGA network, it is likely that, even in more densely populated areas, there will only be a limited number of scale operators providing these services.*

Because of these parallels, the BSG is responding to the questions posed in the ERG paper by including extracts from the 'Pipe Dreams' report as follows.

Economics of NGA

As indicated above, the BSG agrees that NGA deployment is likely to utilise a mixture of technologies to deliver these services depending on a number of parameters and specific local characteristics.

Furthermore, we agree that the economics of NGA networks are likely to vary across different technologies and different geographies, i.e. between Member States and even within Member States. More significantly, the BSG took the view that the gap between public and private value of next generation broadband presents a real barrier:

> *While the public value of next generation broadband for society and the economy as a whole is potentially high, the large scale of investment combined with the significant number of uncertainties surrounding the prospects for recouping that investment, mean that the potential private value available to investors is comparatively weak. This gap between public and private value becomes important when also considering that the current infrastructure, and planned investment in that infrastructure, seem unlikely to be able to support the probable (if not certain) demand for bandwidth in the medium- to long-term. If the UK wishes to be in the position to capitalise on the potential benefits of next generation broadband, and retain its position as a global knowledge economy leader, proactive steps will need to be taken to address this imbalance that encourage private investment*.

What the market might deliver

> *As demand for bandwidth continues to increase, driven by the availability of new innovative content, services and applications, broadband operators will continue to invest in new broadband access technologies. Several LLU operators are already deploying ADSL2+ technology in local exchanges and will be able to deliver peak rate access speeds up to 24 Mbps downstream and 1 Mbps upstream to residential customers. BT has also announced that it will start nationwide deployment of ADSL2+ in 2008 and will complete deployment in 2011. However, ADSL2+ performance decreases over distance, only a small number of customers living very close to their telephone exchange will be able to access these headline speeds. BT estimates that 50 per cent of users will be able to get 8 Mbps or more, with the majority receiving between 8-12Mbps downstream.*
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> *Further planned investment over the next five years in faster broadband services is likely to lead to a patchwork of availability across the UK. Unless BT or another operator accelerates the deployment of fibre or Virgin Media accelerates the deployment of DOCSIS 3.0, broadband speeds available to most residential consumers will vary between 1 and 24 Mbps, depending on location. It is likely that only a very small minority of users, on new developments will be able to access very high-speed symmetrical services.*

The difficulties presented by existing commercial models

> *The 'all you can eat' pricing models that are common today create incentives for providers to limit broadband usage growth rather than invest to support it. These incentives, while rational for broadband operators, are likely to be damaging for users and other upstream value-chain participants, as they will break the broadband virtuous circle.*

In order for operators to have more confidence in their ability to recoup investment, business models need to align interests across the value chain by enabling monetization of usage that imposes costs on providers. Solutions that achieve this alignment will produce the revenues necessary to support ongoing operator investments, enabling innovation and growth to continue in all parts of the value chain.

How should the market for NGA be defined?

A NGA business case may depend upon an operator's ability to:

- *gain a price premium for next generation broadband access service (versus current generation products)*
- *gain a price premium for next generation access (versus current broadband access)*
- *provide new Value Added Services*
- *increase market share at wholesale or retail level*
- *gain revenue for carriage from application or content providers.*

This suggests that the market should not be defined too narrowly. More market players will need to be taken into account when assessing next generation market. In determining a regulatory framework for NGA, Ofcom needs to take account of the impact of its approach on these business case drivers.

Will NGA constitute an enduring economic bottleneck?

Wireline networks have traditionally been viewed as enduring economic bottlenecks and have been regulated accordingly in order to enable competition in the delivery of services at retail and wholesale level. The extent to which this continues to be the case for next generation access has yet to be determined. However, because of the high cost of the civil works required it seems likely that NGA infrastructure could become a non-replicable asset in the long-term.

While next generation access networks may have the potential to become an enduring economic bottleneck, initial NGA deployment is likely to be small scale and experimental, and national NGA deployment will take time. In the short term, if an NGA network co-exists with current generation access networks, it may not necessarily constitute a bottleneck. Regulators could take a relatively relaxed view on wholesale access obligations and retail pricing while operators are exploring options and testing possibilities. We should not assume the existence of enduring economic bottlenecks prematurely.

In some countries, overhead distribution or alternative wayleaves (such as canals, sewers and other utilities) have lowered the civil works part of the overall capital costs. This suggests that enduring economic bottlenecks may not be the network as a whole but may actually be a component of the network, i.e., the civil component. However, such options seem limited in the UK (see below) and so the underground duct network is likely to remain a non-replicable asset.

Nevertheless, any determination of Significant Market Power (SMP) will ultimately depend upon the market definition employed. As described above, narrowly defined market definitions will make a finding of SMP more likely.

Alternative wayleaves or infrastructure deployment may reduce the bottleneck

Civil works can constitute up to 70 per cent of the capital cost of deploying next generation networks. Any opportunity to mitigate these costs will have a significant impact on the business case for NGA, as the Iliad example demonstrates. Operators are likely to explore all options for alternative wayleaves, duct sharing and new ducting technologies on a case-by-case basis.

As outlined above, achieving infrastructure competition may not require replication of every element. If open access civil infrastructure was more readily available to new entrants, it is possible that more alternative access infrastructure would be provided. However, given the condition of the existing UK duct network, it is not clear that regulated solutions, such as obligations imposing duct sharing being considered in France would be practicable, as much of the existing duct infrastructure is old, congested and, in many cases, poorly mapped.

The BSG has previously explored the potential for new civil infrastructure utilities to emerge that would provide open access for operators to deploy their own 'active' network. This remains a compelling concept and various companies are known to have explored potential business models in this area. However, as yet few have been able to develop a business case that does not depend, to some extent, on an element of public sector support. Nevertheless, this is a concept that should be reviewed in the course of work on NGA.

Implications for regulation

Any new regulatory framework will need to strike the right balance between incentivising efficient investment and ensuring sustainable competition. Given the high capital cost and the high degree of commercial uncertainty and risk, simply extending the current regulatory framework to next generation access (NGA) would not achieve this balance.

Ofcom must ensure that potential efficient investment is not undermined by regulatory uncertainty. While enduring economic bottlenecks may emerge in the long term, we should not assume that any NGA operator will quickly achieve a position of Significant Market Power (SMP). In a converged market, there may be many other partial competitors able to exert influence over the actions of an NGA operator. Market definitions should therefore not be set too narrowly.

Given that competition between value added service providers is likely to be intense, there may be commercial incentives that will encourage NGA operators to look for wholesale as well as retail revenues. Even if SMP is identified in some geographic markets, we should be very cautious about whether rate of return regulation should be imposed. Any such obligations could be self-fulfilling as they tend to have a negative indirect effect on the business models of other operators. Behavioural remedies based on functional separation are likely to be more benign.

If NGA networks are broadly deployed, the provision of wholesale access should be encouraged, and if necessary required, from all those operating at scale or with the benefit of public sector contributions. If wholesale products are available, then retail markets should not need regulation, especially where innovation in new products and applications, which exploit increased bandwidth is to be encouraged from multiple parties.

Meanwhile, open access to alternative wayleaves and passive network elements can mitigate a significant amount of the total capital cost of NGA deployment. These should form the basis of any public sector interventions that might be considered appropriate in time.

Deregulation

The most developed next generation broadband markets tend to be those where, as a result of legacy regulation and investment, there is a high degree of competition for high-speed broadband access from cable. In several such markets, recognising the need to incentivise investment, regulators have decided that the existence of platform competition enables them to take a laissez-faire approach to the regulation of new access networks, thus increasing the incentive for incumbent operators to invest in NGA deployment. Examples of countries taking a deregulatory approach include the US, Canada and Hong Kong.

In the US, investments in local access fibre infrastructures are completely exempt from regulation and obligations requiring incumbents to grant competitors access to existing copper infrastructure have been largely reduced. This decision by the FCC was justified by the existence of extensive competition from cable; a belief that the negative consequences of regulation would outweigh the negative consequences of dominance; and an assumption that market forces and technology would reduce the market power of dominant players over time.

In Canada, a Regulatory Review Panel was set up to explore regulatory approaches to infrastructure provision. Again, with extensive competition from cable the panel recommended that the regulatory framework should focus on encouraging facilities-based competition and move away from unbundling (based on the ladder of investment principle), because, it was argued, it could undermine the achievement of facilities-based competition.

In Hong Kong, the regulator has scaled back the more prescriptive ex-ante regulation and is progressively replacing it with ex-post competition law where possible. Unbundling obligations on FTTx are being phased out on the grounds that new network investments will only be made if operators are allowed to achieve returns commensurate with the risks involved. Once again, strong cable competition was critical in allowing the regulator to take such a laissez-faire approach.

In all three cases, this deregulatory approach has had the desired effect of accelerating NGA investment decisions. A 2006 study by the LSE concluded that incumbents' investments in deregulated markets in the USA and Canada exceed investments in the EU's more regulated environment.

Deregulation clearly works as a way of increasing the regulatory incentives to bring forward NGA investment. However, as the German example shows, it is much more difficult for regulators to take this approach in markets where there is limited competition from another fixed access platform (cable), as it risks undoing the benefits delivered by the legacy approach of ex ante regulation, and effectively handing back monopoly power to the incumbent.

The ladder of investment

A more sophisticated and nuanced regulatory approach is, therefore, required in markets with limited infrastructure competition. The approach taken in Europe has been based on the ladder of investment concept. This was introduced as the theoretical basis to argue that alternative operators would move up the infrastructure ladder on the basis of five regulated forms of competition, including DSL resale, Bitstream, shared access, LLU, and naked DSL. This concept foresaw that the five options would offer scope for service differentiation giving altnets an incentive to move up the next rung of the ladder and finally roll out their own infrastructure. So far, the only example of an altnet moving up to the deployment of fibre is Iliad in France, which announced its intention to deploy FTTH in Paris in 2006.

However, this is the only country where altnets are climbing the ladder of investment to NGA deployment and, in the vast majority of cases across Europe, alternative operators are designing their businesses around one of the existing five options and appear to have expressed little interest in moving higher up the ladder. The consequence of this is that competition predominantly takes place on the existing infrastructure platform. Many observers argue that the ladder of investment will only encourage altnets to deploy NGA in a very limited number of situations where other market factors and incentives are particularly strong, as in the case in Iliad's announcement.

Can *ex ante* regulation create sufficient incentives to enable efficient investment?

This situation presents a challenge for Ofcom. Simply extending the current regulatory framework to next generation access would fail to take full account of the commercial uncertainty and risk currently associated with NGA and could kill the business case for any investment altogether. However, failure to impose any access obligations in the long-term could mean a return to a situation where an NGA operator could impose monopoly rents for both access and carriage. Competition at retail and wholesale level has been critical to the success of the broadband market and there is little appetite for a return to monopoly provision of communications services. Ofcom's challenge is to balance the need to provide sufficient incentive to enable efficient investment in new services with the need to ensure effective competition.

Given the commercial challenges involved, it is clear that there are significant commercial risks for any entity contemplating any NGA investment, which would have to be taken into account by the regulatory framework.

If NGA networks are broadly deployed, the provision of wholesale access should be encouraged, and if necessary required, from all those operating at scale or with the benefit of public sector contributions. If wholesale products are available, then retail markets should not need regulation, especially where

innovation in new products and applications which exploit increased bandwidth is to be encouraged from multiple parties.

As explained above, there may be a commercial case for a cable operator to voluntarily provide wholesale products on normal non-discriminatory commercial terms, without the regulator having to intervene to set wholesale terms and conditions.

The future of legacy wholesale products following NGA deployment

Existing LLU operators need clarity about how the regulatory framework will evolve following NGA deployment, and the implications for their businesses, given their dependence upon access to first generation assets. Given the length of time it will take to deploy any large-scale NGA networks, current generation services will be required to co-exist and compete with NGA for sometime to come. However, it would not be appropriate to expect them to be supported indefinitely. It should be possible for the regulator to signal to the market the likely time horizons for the termination of legacy network elements, without fettering its discretion, so that operators have a consistent approach that provides a reasonable level of regulatory certainty.

Functional separation

In 2005, Ofcom agreed a new regulatory settlement with BT that led to a voluntary agreement to implement a functional separation of its wholesale and retail operations. BT agreed with Ofcom that it would establish in internal organisational structure called Openreach to guarantee operational separation and provision of equivalent (wholesale) products to itself and its wholesale customers in order to maintain an adequate level of competition. The decision to institutionalise regulatory obligations through an independent organisation within BT Group, with its own profit and loss account, has been seen as an innovative incentive-based regulatory approach to stimulating investment in current generation broadband in markets where there is relatively weak infrastructure competition, and the European Commission has advocated the potential benefits of similar approach in its discussions on the revision of the EU telecommunications framework.

Functional separation is also finding support in the financial community. Bear Sterns argued in 2006 that functional separation was a positive development for telecoms operators:

'The separation of wireline incumbents' 'last mile' (e.g. BT's Openreach) is widely regarded as another regulatory burden. On the contrary, we believe it delivers significant benefits: first, it provides relief on retail asset regulation; second, it encourages the market to re-rate the 'last mile' assets to a higher utility multiple (for example 22% for BT); and third, it can produce a significant release of capital (we estimate as much as €123 billion across Europe).

As mentioned above, given the extent of competition for value added service revenues, such as IPTV in the UK market, it seems unlikely that an operator will be able to build a business case for NGA deployment solely on a vertically integrated business model. Both wholesale and retail revenues are, therefore, likely to be critical to any NGA business case. This suggests that there may be a commercial imperative for operators of NGAs to provide wholesale

services, which could avoid the need to pursue premature wholesale ex-ante regulation. This should be encouraged.

Meanwhile, open access to alternative wayleaves and passive network elements can mitigate a significant amount of the total capital cost of NGA deployment. These should form the basis of any public sector interventions that might be considered appropriate in time.

We trust that these selected extracts from the BSG report will be of value to the ERG in determining its recommendations following this consultation. We would be willing to provide further reactions if required.

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