The Development Agency
for the North East of England

Future Broadband

policy approach to next generation access

One NorthEast response to Ofcom discussion paper:

The spirit of the Ofcom consultation seems to assume that the move towards NGA (Next Generation Access) progressively across the UK will occur in a way which parallels the evolution of competitive services since the liberalisation of the UK telecoms market. This may not turn out to be the case in practice.

Due to the very high cost of such a programme and the understandable degree of caution on the part of BT and other operators in making such an investment it is likely that other forces and other players will play a very significant role in the roll-out of NGA. At the same time, although there is widespread acceptance of the fact that there is a lack of evidence to support the role of NGA and similar initiatives as an agent for wealth generation, there is also widespread desire to invest in NGA as soon as practicable. This is admittedly an “act of faith” but those taking this view are keen to move forward in the belief that delay will reduce the social and economic value of the investment and give rise to the real risk that UK plc will be seriously disadvantaged in the international market place for knowledge industries.

Many of these proponents of early investment in NGA are regional development agencies and regeneration organisations. As such they have the power –and some funding- to make these investments happen in the areas which they control or influence. High profile developments such as the Olympic sites in East London will inevitably be equipped with fibre to the premises as will such pilots and experiments as the BT OpenReach deployment at Ebbsfleet and those which follow it.

It seems likely therefore that, irrespective of the merits of the case, there will be significant, though uncoordinated, investments in NGA throughout the UK in the next five years or so. It seems to be important to bear these trends in mind when responding to this consultation. It is also very significant that Ofcom plan to consult again on NGA in the context of new build, which is, in effect, what most of these early investments will be.

If this scenario is accepted then one very significant difference between the potential regulation of NGA and the historical regulation of the telecomms networks becomes apparent. In the latter case competitors to the ex-monopoly incumbent were faced with the situation in which BT had control over the key asset of the copper local loops and requiring regulated access to that asset by new entrants was a prerequisite of the development of a new market. It seems

more likely that, since there will be little upgrading of the existing access networks for some time, most of the NGA coming into use in the next few years will make up a “parallel” access network but one without a single owner. This suggests that a new attitude towards regulation will be needed.

It is common ground that investment for new build will prove less costly than for overbuild. One idea to be explored is that it should be made mandatory for all new build to provide open access ducting alongside provision for other utilities.

A further issue is the degree to which infrastructure competition can be encouraged. Due to the very high costs involved it is likely that the areas of highest density may have the choice of multiple NGA providers (as with the local loop at present) but that a very high proportion of users in suburban and rural areas will have no such choice. A clear framework for coordination and mutual access between many local network operators will be required.

The technology assumptions made in the consultation document should also be challenged. While we agree that it is likely that both FTTC and FTTP will be deployed during the roll-out of NGA we regard any solution largely or wholly reliant on FTTC to be a “stop gap” in that it will not ultimately have either the capacity or the flexibility required. The original copper loop was a “one size fits all” solution; experience with broadband and LLU has shown that this will increasingly not suit emerging markets and the ability to deliver the widest possible range of capabilities and speeds will be necessary, for example for advanced SOHO applications.

We believe it would be helpful for Ofcom to develop a “vision for NGA” for UK Plc. This should include FTTH with appropriate QoS and reasonable cost as the aspirational goal. The burden of proof should be more heavily weighted to the opportunity cost to UK Plc of delayed investment which we believe argues for more rapid deployment aided by intervention where necessary.

Question 1 When do you consider it would be timely and efficient for next generation access investment to take place in the UK?

Few if any technologies have had such an impact in so short a time as the World Wide Web (www). Since 1993 when the internet reached critical mass the growth in users has been phenomenal, currently standing at more than 1Bn. There have already been significant economic and social impacts and yet we are at the very early stages of development. At some point, be that 5, 10 or 20 years this question (Question 1) will in all probability be moot as there will exist by then a much more capable infrastructure. Whilst this is currently conjecture there is compelling evidence in support not the least of which is the consideration currently being given to the issue in this nation and others. This however is augmented by technological developments that are driving bandwidth growth within local networks (e.g. Gigabit Ethernet is now standard, UWB, etc.) whilst P2P traffic is rapidly consuming Internet bandwidth (above 70% in 2006; ref: New Scientist 13 October 2007). Both factors will put additional and ultimately unacceptable pressure on the “bottleneck” created by slow Internet speeds. The conjecture therefore is more akin to a projection than speculation.

The consultation document on many occasions refers to the lack of compelling evidence to warrant intervention or stimulation of the market but it also notes the circular or “chicken and egg” argument that without NGA future (and as yet undefined) services may not develop. This latter factor renders it essentially impossible to quantify the opportunity cost of not investing in NGA and the document offers little evidence to indicate otherwise. It is suggested that insufficient emphasis has been give to this opportunity cost (addressed further in the response to Question 5).

NGA of itself is not directly “transformational” any more than is plumbing or the provision of gas or electricity rather it is the use to which these are put that renders them potentially transforming. NGA carries with it a steep learning curve (more so for some than others) and therefore to gain more rapid access to the benefits various support programmes are necessary. The North East already has a number of initiatives in place but these would arguably need to be extended if the potential benefits of NGA are to be efficiently realised.

Taking these comments together we submit that the emphasis of this question should be to determine how quickly the UK can invest in NGA and support programmes in order to create competitive edge features for business and improvements to society.

Question 2 Do you agree with the principles outlined for regulating next generation access?

It may be that in the context of nationwide deployment of NGA the notion of “efficient and timely” investment is appropriate but this presupposes that the essential lessons have been learnt and understood.

We would prefer that the two underlying principles defined convey the need for a greater sense of urgency in the deployment of NGA rather than the notion of “efficient and timely” as this presupposes by Ofcom knowledge of what benefits investment will bring and an ability to assess the opportunity cost of not investing or of delayed investment. We have no evidence that either is true.

It would also be useful for Ofcom to be more specific with respect to what constitutes NGA and in particular to set an aspirational goal. We submit that the goal should be FTTH (or future technological equivalent) at an acceptable end user cost. There is certainly a place for other approaches such as FTTC but only as a stop gap or intermediary measure. The aspirational goal should also define appropriate QoS attributes.

We are particularly concerned that insufficient emphasis has been given to the need for “synchronous” bandwidth provision (the term synchronous is not to be interpreted here literally but rather could also refer to an appropriately high upload speed). We believe slow upload speed is a barrier to a range of potential new services.

We are very concerned by Ofcom’s view that it is premature to consider specific policies to address digital divide issues (DD). DD is a function of both infrastructure and social issues and it is important to address both together. It could be argued that failing to deal with the DD at an early stage will have significant adverse consequences. There is evidence to support this view but perhaps not conclusive. It is possible however to identify potential improvement that would result if the DD were properly addressed e.g. via education, health, economic enablement, etc. The social and economic benefits potentially far outweigh the cost of provision. The challenge is in defining a creative way of aligning the mismatch in burden between those gaining the benefit (e.g. a local council reduce cost and or provide a better service to citizens) and those paying for the infrastructure.

Question 3 How should Ofcom reflect risk in regulated access terms?

We note Ofcom’s reservation that a policy focussed on contestability could result in “inefficient” investment e.g. the choice of FTTH by a provider in order to limit competition due to the inherent difficulty of unbundling. Equally a FTTC alternative whilst potentially promoting competition would be suboptimal in terms

of the nature of the NGA provided. We believe there is a need to weight the regulation towards the "aspirational goal" i.e. FTTH albeit with safeguards to protect end users from unreasonable costs.

We note Ofcom's concern with respect to reflecting risk and in particular selecting the wrong "risk factor" however we also note that the Private sector has not always been good at making such judgements and in some instances expectations of returns have been disastrously wrong e.g. the price paid for 3G. More recently it seems likely that BT initially underestimated the revenues from the roll-out of ADSL. Be that as it may the downside is that incremental investment (a possible consequence) could lead to a piecemeal network that may not be in UK Plc's best interest. The risk could arguably be reduced via Public sector aggregation to provide an "anchor tenant" thus facilitating Private sector availability of NGA.

There is a history of investors getting the pricing structure wrong. It can be argued that BT's initial approach to ADSL pricing restricted early take-up because the price point was wrong. The same could be said with respect to SDSL. In the North East this is not directly a question of investment risk as enabled exchanges are already fully SDSL capable. BT has chosen not to make the service available or available at reasonable prices (perhaps to defend existing products). Such price flexibility cannot be in the ultimate interest of UK plc and it would be helpful if regulation guarded against it.

It is accepted that risk is a complex issue. The approach to risk however might be different if Ofcom were prepared to define a desired "aspirational goal" as suggested above.

We believe that, as NGA develops in the longer term, the equivalent of local loop unbundling will be necessary. The alternative would seem to be unnecessarily strict regulation of NGA "owners" to provide a reasonably uniform set of wholesale services.

Incremental investment by numerous, uncoordinated network owners is likely to lead to a piecemeal NGA network that may not be in UK plc's best interest. The risk could arguably be reduced via public sector aggregation and regional coordination to provide a small number of "anchor tenants" thus encouraging private sector investment and the more general availability of NGA.

It is important that the current situation with LLU is not repeated with NGA. There are claims that BT Wholesale / Open Reach pricing discourages competitors unduly. The inherent multiservice characteristics of NGA mean that wide choice of solutions becomes more vital and the pricing of an equivalent offering from (possibly many) NGA operators to a new entrant planning widespread provision of an innovative service could be critical in ensuring its viability.

Question 4 Do you agree with the need for both passive and active access remedies to promote competition?

It is agreed that FTTC and FTTH will form the basis of NGA. As mentioned they are not of course equal. In particular it is likely that any solution largely or wholly reliant on FTTC will be a "stop gap" i.e. it will not ultimately have the capacity required.

We endorse the view (expressed later in the consultation document) that investment for new build will prove less costly. Ideally it should be mandated that all new build should have FTTH provision via installed fibre or as a minimum accessible ducting.

We recognise notwithstanding certain limitations that FTTC would present a valuable step forward relative to current ADSL offerings however the large number of cabinets to be converted suggests that those in the most populous areas will be converted first and others late or not at all, i.e. a similar pattern to ADSL exchange enablement. This would be undesirable on a number of levels and should be mitigated through regulation or other means.

The need for both passive and active remedies appears logical. We would pose the question however as to whether it would be beneficial to design remedies to promote technology solutions most likely to achieve the "aspirational goal." This would not prohibit for example FTTC but it would recognise it as an intermediary solution. Equally there is some concern that Ethernet solutions may in due course be superseded by GPON which appears to be a superior technology although it is accepted that this is a fine point of distinction. Technologies considered "sub aspirational" thus deployed would need to demonstrate an offsetting benefit such as lower end user cost or rapid deployment. Further they should carry with them an implicit need for upgrade at some reasonable future point, a factor that would have implications for the lifetime cost.

Question 5 Do you consider there to be a role of direct regulatory or public policy intervention to create artificial incentives for earlier investment in next generation access

As suggested above we believe that there is a case for a public policy initiative in order that the problem of the "missing evidence" be addressed as soon as possible; the downside implicit in the worse case scenario in which competitiveness is impaired is too great for risks to be taken in this area.

A specific example in the North East is the proposed consideration of a software services grid linking a number of the Region's major projects with a view to providing participating organisations with an important competitive edge. This is typical of the type of initiative which needs to be enabled, encouraged and supported if testbeds of a valid scale are to be created.

We are concerned that the development of NGA in the absence of appropriate intervention will not be homogeneous and will take place over a protracted timescale. We see this as ultimately detrimental to the interests of UK plc and are very concerned that it would impose a particular disadvantage on certain Regions including t In our view there is a clear need for appropriate intervention and whilst there are obviously risks and concerns the downside to UK Plc of not being prepared to intervene is too great to ignore. As suggested it is highly likely that there will come a point where the Nation has NGA our clear view is that it would be better for that to be sooner rather than later. Deploying FTTH is an estimated investment cost of £15Bn, clearly a significant sum (albeit less than the price paid for 3G) however in reality what is arguably more important is the amortisation cost over say 20 years which at 6% interest amounts to £1.3Bn per year. At this value break even would be achieved through for example:

- An average of 72,000 new jobs over the period at just over £18K per year per job or
- Social care savings delivered through webcam / active sensors etc of £1.2K per year for 1.1M people or
- Savings of less than 1% of the NHS budget or
- 5.5M subscribers paying £20 per month or
- 500,000 special needs pupils supported at a cost of £2.6K per year or
- Some combination of the above.

The above does not take into account factors such as increased inward investment, the benefits to the environment and transport infrastructure (e.g.

reduced congestion) through the potential for increased “home working” coupled with an increase in realistic virtual meetings. These factors taken together suggest that the “break-even” level should easily be exceeded and perhaps substantially so.

We acknowledge that it is difficult to predict the specific benefits that would derive distinctly from NGA as compared for example to more effective use of ADSL. No amount of conviction however strongly held amounts to proof. A number of opportunities however can be indicated that would benefit from NGA, a few examples include:

- Significantly more effective remote communication via point to point (or point to multipoint) “video” web conferencing. As suggested this has compelling advantages for more effective methods of home/remote working and indeed offers many opportunities for business in terms of interaction with customers, suppliers, employees and others.
- The growing impact of “Wikinomics” i.e. the development and application of new and powerful business models.
- A dramatic growth in the development of a wide range of ASPs and web applications.
- An increase in the use of virtualisation and in particular increased accessibility for smaller companies to such technologies.

A more specific example in the North East is the proposed consideration of a software services grid linking a number of the Region’s major projects with a view to providing participating organisations with an important competitive edge.

Whilst it is not immediately possible to define the economic value inherent in the above examples we believe that it will be substantial. In addition it is likely over time that services such as HD (or above) on demand IPTV will provide a more conventional demand that users (albeit in more populated areas) will be prepared to fund.

The implication from the above is that the opportunity cost of delayed investment should be given significantly more weight.

Based on the evidence of the initial ADSL roll-out and the approach to LLU it is likely that the “market” will deliver sub optimal NGA in particular it will not provide full coverage but will target those exchanges covering (approximately) 65% of the population. This will serve to exacerbate the digital divide and will also have a detrimental effect on the development of web “services” as designers will have to cater in effect for a two speed Internet. A particular consequence is that a limited proportion of the potential benefits (e.g. more sophisticated home care for the elderly) will prove attainable. It is also likely that the time scale for NGA investment will be longer than desired as market incumbents seek to protect their investment in existing products or simply miscalculate the inherent risk.

There are market drivers present to a limited degree today and it seems likely that they will have increased impact in the future e.g. IPTV on demand services (including next generation HD and ultimately 3D TV). Further there are a number of Public sector drivers e.g. arising from Heath care and Education that may well emerge as powerful factors. The most efficient approach therefore could be to harness that demand through a series of structured Public and Private sector finance initiatives.

We are concerned that the development of NGA in the absence of appropriate intervention will not be homogeneous and will take place over a protracted

timescale. We see this as ultimately detrimental to the interests of UK plc and are very concerned that it would impose a particular disadvantage on certain Regions including the North East.