Nokia Siemens Networks

Consultation Response

Ofcom

Response to the consultation on

Future Broadband, Policy Approach to Next Generation Access

5th December 2007

Table of Contents

About Nokia Siemens Networks

Nokia Siemens Networks is a leading global enabler of communications services. The company provides a complete, well-balanced product portfolio of mobile and fixed network infrastructure solutions and addresses the growing demand for services with 20,000 service professionals worldwide. Nokia Siemens Networks is one of the largest telecommunications infrastructure companies with operations in 150 countries. The company is headquartered in Espoo, Finland.

www.nokiasiemensnetworks.com

Nokia Siemens Networks (NOKIA SIEMENS NETWORKS) appreciates the opportunity to contribute to this consultation.

1. Introduction

The world is a fast evolving place and the networks that we create increasingly shape the way we live our lives on a day to day basis.

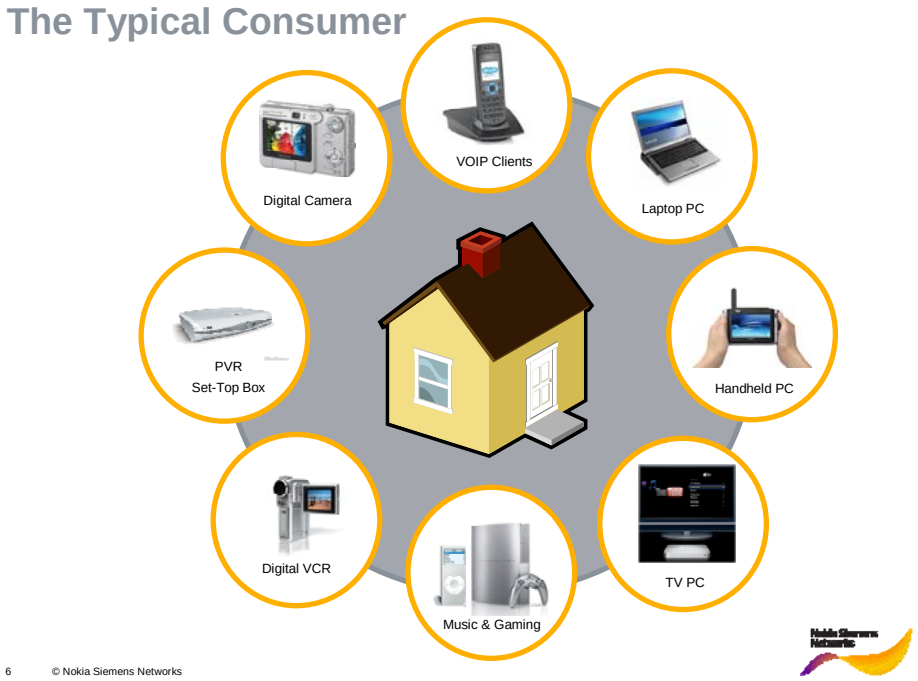
For example, the emergence of the motorway, the high speed, high throughput road network in the late 1950's & 60's changed the very fabric of our society, giving rise to major growth in the automotive industry and shifting the emphasis of our transport and distribution network from the low speed canals and expensive railways to the roads. This in turn spawned new opportunities and tremendous commercial growth as we adapted our way of life to the network. In short, the network fundamentally changed the way we live our lives.

In our own industry, the "communications marketplace" another fundamental shift is also taking place. We are once again adapting to the changing network environment and as we build out higher and higher capacity core and access networks, we in turn spurn a generation of new wave of applications that fundamentally change our relationship with the network itself.

No longer the domain of government, research or educational establishments, we have seen the internet be transformed from just an on line repository for information, into a mechanism for ebusiness, a communications Platform to allow greater flexibility and home working practice and most recently as a growing platform for social networking and entertainment. Since establishing itself in February 2005, Youtube, arguably the most famous on line content brand, had jumped from a little over 200K visits per month to over 12 million per month by May 2006. In September 2007, the number had grown again to over 72 million visitors each month accessing over 100Million videos every single day!

Internet usage continues to grow unabated as the demand for broadband the world over rises steadily. By 2011, subscribers to Broadband services will top 579 Million with Western Europe consistently continuing to lead the world year on year accounting for a little over 25% of the global broadband subscriber base. (Ovum 2005).

The next generation of internet user demands far more from their network. Today's typical household has given rise to the proliferation of digital devices in the home which in turn is building a tide of demand that promises no slow down.



Digital Images, Digital Video, Music downloads, peer to peer gaming and increased flexibility in internet access devices together with the prevalence of wireless broadband is shaping the way we use the internet and fuelling the appetite for greater bandwidth.

Most recently the advent of IP Television with High Definition TV (HDTV) hot on it's heels already pushes the required bandwidth in the home up to 30MBs particularly where two HDTV channels are being streamed at once.

One could of course deduce that the Pay-TV marketplace is already dominated by satellite and cable in the UK but as cable operators in Europe look to FTTH as the next logical step on from HFC networks in order to reduce the operational cost burden of managing multitudes of street cabinets, IPTV itself gives rise to an alternative broadcast medium and allows new and disruptive entrants to the Pay-TV market which will have the effect of driving down consumer costs and increase penetration of IPTV in the broadband subscriber market.

The outlook for IPTV continues to look promising but equally sets alarm bells ringing for Network operators. As the drive to retain and grow the user base and increase ARPU through the delivery of applications such as IPTV continues, standards are also continuing to move on in TV devices. The recently approved (2006) ITU-T standard for LSDI (Large Screen Digital Imagery) requires between 40MBs and 160MBs per channel compared to 10MBs per channel for HDTV today. Ultimately, the device will drive the bandwidth requirement and device manufacturers will only manufacture to the latest standards to ensure constant churn in the consumer home. In years to come it is likely that HDTV sets will at some point be superseded by newer 2D super or Ultra models.

It is clear that today we sit on the precipice of an explosion in demand for available bandwidth in the consumer and business space. The applications we can see today are already likely to swallow the bandwidth that the next jump in Copper based DSL technology to ADSL2+ in the UK can deliver.

VDSL2+ offers a further prolongation of life for the last 500 metres of the copper network at a price. Deploying large numbers of street cabinets will only increase operational costs in the short and medium term and could further complicate the practicalities of sub local loop unbundling at street cabinet level.

As the demand for access speeds continues and the market place becomes increasingly competitive, copper networks will no longer be able to support the reductions in operational expense required to maintain profitability for the operator.

At Nokia Siemens Networks we firmly believe that moving to FTTH is inevitable and we are embarked on a strategy that enables our customers to roll out solutions today that allow hybrid deployments of fibre and copper based technologies within the same architecture. We believe in a gradual migration and evolution to FTTH at a point where it makes good commercial sense with minimum disruption and replacement of platforms.

2. Nokia Siemens Networks Response to Consultation Paper Questions

The Ofcom consultation clearly reflects the specific market situation in the UK.

Already the 12th implementation report from the European Commission indicates the differences in the respective Member States regarding broadband access. Due to the undertakings of BT and the creation of Openreach the differences may even be more visible. This is evident from several statements included in the consultation document. Inevitably, subtleties will exist that create variances between what is good for the UK market and what is recommended in the ERG consultation paper and it should be recognized that our responses are pertinent to the UK only.

Nokia Siemens Networks is aware that this consultation follows the discussion resulting from the public discussion document on Regulatory Challenges Posed by Next Generation Access Networks, issued by Ofcom on 23. November 2006.

We appreciate that Ofcom understand the need for innovation and investment at the right time and in an efficient manner, pointing to the risks associated with such investments. This of course leaves us with the question of how far should regulation go to try and shape new and future markets. And indeed, how much should be left to market forces themselves to determine?

We note with interest the statements

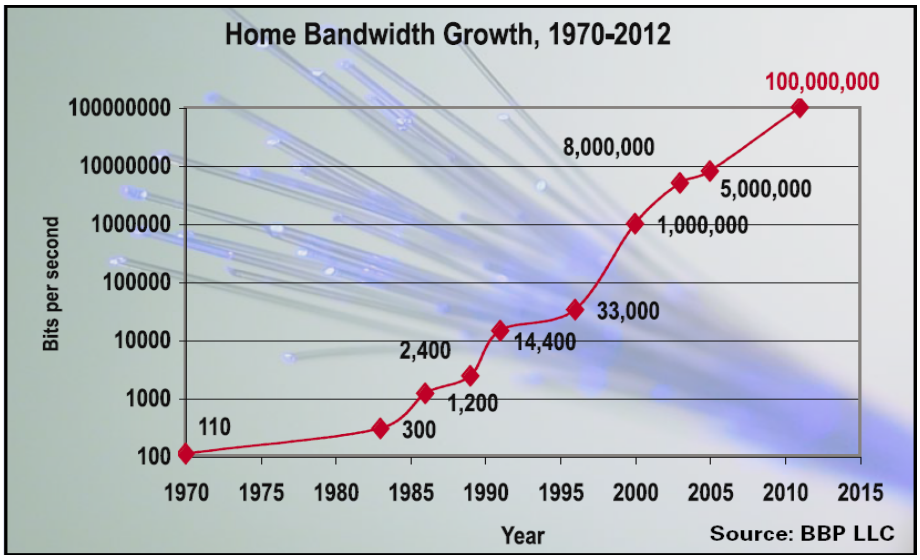
- that the role of regulation essentially is to reduce incentives for anti-competitive behaviour while retaining incentives for efficient investment;
- that currently no evidence of market failure is seen
- that Ofcom does not think there is a case for withdrawing all regulation from NGA.

We expect this implies that current regulation is not simply extended to the new markets in this context but that regulation should evolve to induce investment in new technology. Failure to achieve this may result in a reduced desire to invest on the part of new or existing operators. This can be evidenced in areas of mainland Europe where recent intent to impose regulation may stifle ongoing investment.

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

It is mentioned that one reason for this consultation is the need to more intensively promote high broadband penetration in the UK in order to be competitive with other countries; this would imply that the timing for making the investments is “as soon as possible”.

The truth is that it is extremely difficult to forecast with accuracy the intercept point where our existing copper infrastructure in the UK would no longer sustain consumer or business expectations. If we believe that HDTV is the catalyst for increased competition in the pay TV markets then to achieve “multi-room” TV and have the flexibility of more than one channel we are already at the point where bandwidth in excess of 30MB/s is required. Most analyst projections and forecasts indicate that consumer bandwidth requirements would go beyond 50MB/s by around 2012 (FTTH Council)



As mentioned in our introduction, advancing TV Broadcast standards themselves will force further demands on access networks. This will inevitably push us beyond copper and into fibre territory. In a recent article in “Broadband properties” it was projected that a “low end” consumer would need in excess of 558MB/s by 2020.

It is clear therefore that investment decisions and technology selection need to happen now if operators are to build and complete a roll out at least to selected metropolitan or regional areas. In our experience deployment of access based solutions are complex and time consuming by nature. When and if civil engineering is also a major factor in the deployment it is of paramount importance to plan well in advance of anticipated service launch dates.

But if investment shall be made efficiently and “market led”, the influence of market forces has to be recognized: market players have to get the appropriate return on investment; the return depends on the opportunities for business with new services or new packages run on the improved access networks. It is a kind of “chicken and egg” question, as is mentioned in the impact assessment annex 5: evolution of new businesses depends on infrastructure with increased capability; investment in

infrastructure depends on timely return created by new businesses. Investment in both, infrastructure and services, implies high risk, therefore needs incentives by a friendly, stable and predictable regulatory environment.

The timing can only be decided by the respective market players based on their assessment of the markets. It is their task to decide on where to invest, when, where they expect demand, and how to market and price the services. Too early investment is sunk cost; too late investment is lost competitiveness.

Nevertheless it is our opinion that all players need to consider investment in NGA rather soon, in particular investment in optical fibre infrastructure, not only for high bandwidth but also for the supportive features provided by the new access infrastructure for new services.

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

Nokia Siemens Networks agree with the underlying principles as stated in paragraph 4.6, i.e. to promote investment while imposing rules in favour of sustainable competition. In particular the principle iv) in paragraph 4.7 is important for us, i.e. to promote a favourable climate for efficient and timely investment and stimulate innovation. Accordingly, the principles in paragraphs 4.12 to 4.17 are seen as appropriate

We also agree with the statement not simply to roll-over the existing regulatory approach (4.9).

Within the principles for promoting competition (paragraphs 4.18 to 4.25) we acknowledge the difficulty of handling the risk of future evolution given the fact that the future seems to be not sufficiently clear. Whilst it is important to achieve equivalence and ensure ultimately that services are spread to as many UK consumers and businesses as possible, we believe that a less regulated market environment at least in the investment period would stimulate investment itself and encourage innovation and entrepreneurial flair, all of which should be good for the consumer and business alike.

The difficulties highlighted in paragraph 4.26 reflect the problem of defining a new regulatory approach while not being in a position to start from an unregulated environment.

If we consider the statement in paragraph 4.13, that competition is one of the most effective drivers of investment, it may be difficult to understand the last statement in section 4.26: does functional separation constitute such a driver?

As the paragraphs 4.27 to 4.31 on digital divide clearly explain, it is seen as premature to apply public intervention in such an early stage in this respect.

It is certainly important to agree on the principles, which Nokia Siemens Networks basically does, but finally it is their implementation that counts. It is noted that the list of principles varies slightly throughout the document.

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

As the question indicates, the risk of investing in next generation access, a not yet clearly visible market in all detail is seen as the fundamental difference to traditional markets. It is therefore a good approach to consider new concepts for regulation and not only extend the current practice to the new environment, as the consultation document suggests.

Nokia Siemens Networks agree that the three principles of contestability, reflecting risk, and regulatory certainty should be applied.

We note that the headline links contestability with incentives for investment, and providing such incentives in our view is the most important task of policy and regulation in this context.

We appreciate that mandating or influencing the next generation access network design or technology selection is not the choice of Ofcom. However the regulator must provide a clear and stable basis upon which sound investment decisions can be made to allow business to flourish. Investments will only be made where returns can be achieved in a reasonable timeframe after all.

As is mentioned in the document, the transition from today's regulatory environment to a future regulatory model is one of the critical items. Having this in mind, it is seen as reasonable to select from the three main options indicated in paragraph 5.26 the anchor product pricing as the preferred one. It is certainly the decisive question, how the anchor products can be defined, as indicated.

We read with interest the rather strong indication in paragraph 5.35 that "once any risk incurred in next generation access deployments has been paid back, it may be appropriate to transition to a more traditional approach to regulation." In principle we agree however as the market is relatively immature with no clear indication of which applications other than IPTV/HDTV will really drive bandwidth requirements our preference is to adopt a suitable "lower touch regulatory model at the outset that can be sustained throughout a significant period of investment and innovation.

2.4 Question 4 - Do you agree with both passive and active access remedies to promote competition?

Nokia Siemens Networks shares the view that in the long term, the highest potential for differentiation is necessary for the operators and service providers. We think regulation concerning elements where little or no potential for differentiation is visible is certainly reasonable. As true differentiation based on ducts is not possible, the access to ducts is certainly a viable means to reduce entry cost. It should be encouraged.

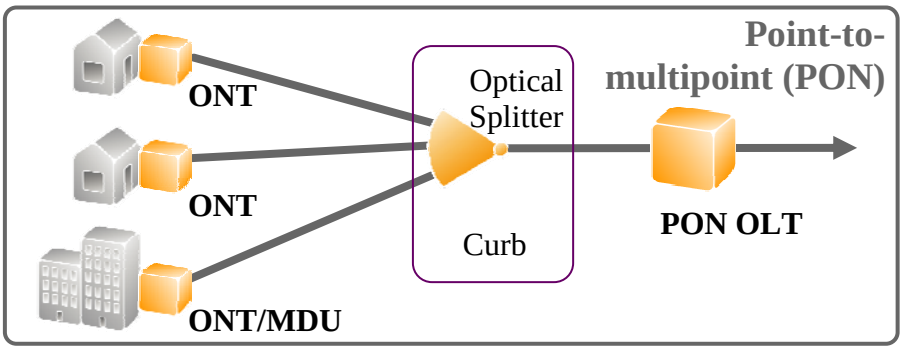
The means of deployment and technology choice depends very much on the situation and business plans of market players, never the less the technical choices that we see today bring with them their own set of challenges in relation to passive unbundling.

In many ways “traditional” passive unbundling at the sub local loop (or at street cabinet level) is technically feasible however socially unacceptable due to amount of equipment needed in residential areas to make the solution work. For these reasons FTTC deployments are seen as somewhat more challenging where regulatory pressure forces the issue of competition in deployed areas.

We certainly do not see unbundling based on wavelength as a practical possibility at this time.

Passive Unbundling

PON FTTH/FTTB

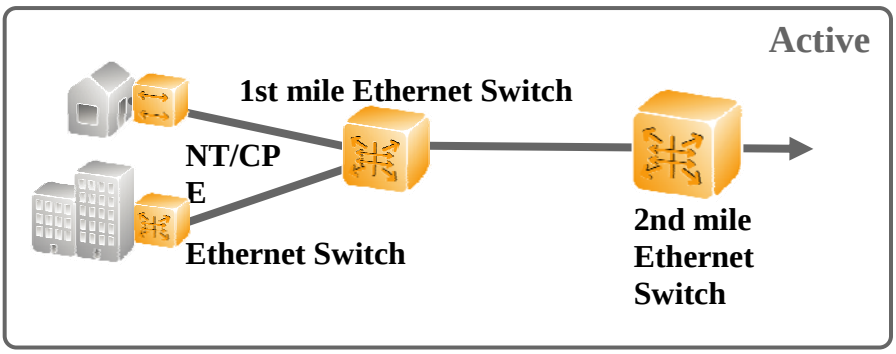


Local Loop unbundling could be done by moving the last mile fibre from the splitter of one operator to another. This Might be cumbersome especially if the Splitter is buried into the ground.

To move a complete PON from the OLT of one Operator to the OLT of another Operator also is not possible, as there are too many subscribers affected.

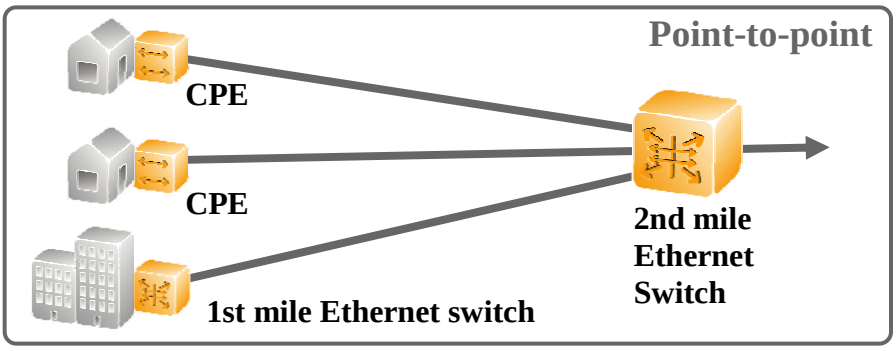
Thus for PON Deployment, passive unbundling is not an option.

Active Ethernet FTTC



For FTTC Solutions, passive unbundling would imply that a competitor needs to install active equipment at the curbside. This is possible by either installing very large cabinets or putting several cabinets to the curbside. This seems both economically and socially unacceptable.

Point 2 Point Fibre to the Home/Office



Passive Unbundling is similar to ADSL unbundling and done via collocation in the local/central office. For an investor it strongly reduces the attractiveness of rolling out this kind of solution as there is a danger to be forced to give away the access to the subscriber. Thus we do not recommend forcing passive unbundling for newly invested fibre access, regardless of what fibre access architecture is selected by a potential investor.

Active Unbundling

Active unbundling offers several advantages both to customers and network operators. For subscribers it opens the ability to simultaneously access different service providers. Network operators can speed up their return on investment, when other service providers also acquire customers to connect to the fibre access network. We see tendencies in the market especially from smaller network operators to offer active unbundling without being forced by regulation.

The marketplace is currently working to establish an effective and workable solution for this method of unbundling.

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

As stated in our answer to question 1 above, we see early deployment as an opportunity for the market players and the whole economy in the UK. Maintaining the UK's competitive edge in attracting outside investment is dependent on us having an up to date and progressive infrastructure across the whole country. In many areas of the world and in Western Europe we see other countries already investing heavily in next generation access technology predominantly at this stage in Fibre to the Curb scenarios.

But at the same time we state that the decision on investment and its timing has to be made by the market players, based on assessment of their respective business models and their need to act in advance or react to competitive threat.

Inline with other statements, we regard as little as possible intervention as the right way, not only in regulation, but also in the area of state aid, however it is true to say that in many areas of the world the two key drivers that have forced investment decisions and network build are "competitive threat" and "public funding" to some extent. In areas such as the City of Amsterdam we have of course seen "Citynet" deploy a metro fibre network through a collaborative approach with a consortium of companies including ING Real Estate, five housing corporations and the City of Amsterdam itself.

We share the risk analysis in section 7 and in paragraph A5.16 including table 4 which finally leads to the conclusion that intervention would be too early at this stage. This is true also with regard to the aspects of a potential digital divide.

Nokia Siemens Networks share the view of paragraph A5.17 that the framework provided by the state should give the right incentives to the market. We do believe that market considerations concerning opportunities for new services and businesses together with an assessment of the competitive risk will lead to timely investment.

3. Conclusion

With these answers Nokia Siemens Networks would like to contribute to the considerations on how to shape the start of NGA. Some of the aspects are closely linked to choice of technology based on the individual situation of different players in the markets. We would be happy to answer potentially more detailed technical questions directly.