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Nokia Siemens Networks Response to the 2nd Public Consultation on The Draft Commission Recommendation on Regulated Access to Next Generation Access Networks (NGA)

Nokia Siemens Networks welcomes the opportunity to comment on the 2nd Public Consultation on the Draft Commission Recommendation on regulated access to Next Generation Access Networks (NGA).¹ As a technology vendor, we see the regulatory conditions for NGA as a crucial factor for promoting sustainable investments in next generation access networks in Europe. While we support some of the Commissions positions as stated in the Draft Recommendation, there are also aspects which need to be reconsidered in order to avoid a negative impact on NGA network roll-out in Europe.

Where we agree

Nokia Siemens Networks fully agrees that next generation access networks based on optical fibre require substantial investments. We also agree that regulatory certainty is key to promoting efficient investments by all operators. We support the aim for more consistency of regulatory approaches. Having a sound and forward looking European broadband strategy is valuable and important from NSN's point of view.

Fostering co-investment has a lot of merits. It should be underlined that co-investment should be strictly done on a voluntary basis.

Promoting multiple fibre topology does not serve anyone

We see that there is an area of conflict between calling for more regulatory certainty and complaining that the current document is too prescriptive.

We see the merits of the Commission's approach that multiple fibre up to the end customer's premises would solve the problem of having a bottleneck in the access network.

In order to differentiate more precisely: From the Metro PoP only a single connection to every household is necessary. If requires, unbundling can be done in the Metro PoP, so that the end user can freely choose between various service providers and competition is ensured. Multiple fiber in the feeder segment exceeding the number of households would therefore increase the cost of deploying fiber without any benefit.

Having said that we would also like to stress that both from a technology and a market perspective the multiple fibre approach is overall rather theoretical. We do not see a huge market potential for this sort of network topology.

¹ We also support the answers to the consultation that were submitted by Digital Europe, Business Europe and Bitkom.

Fostering or encouraging a network topology that has nowhere been rolled out yet and where – apart from Switzerland – no plans of rolling out exist to date as far as we know does not seem to benefit anybody. Consequently we do not share the Commission's assumption that multiple-fibre roll-out promotes efficient competition.

In-building wiring and the merits of FTTB

FTTB is another form of fibre rollout that is happening today and is in our understanding underestimated by the draft NGA recommendation. It is not even mentioned there. In FTTH deployments the human factor of people living in residential building who do not want to change their in-house wiring must not be underestimated. Apart from newly built homes, in order to lay fibre into every home, significant changes would have to be made to in-house cabling. Reluctance by property owners and also quite significant costs make the last mile deployment of FTTH a challenge. In FTTB a DSLAM is put into in the basement of the building and for the rest, the existing copper infrastructure can be used. Therefore in many cases FTTB is the ideal choice for bringing fibre to the home. It should be noted that FTTB is a logical evolution step towards FTTH and can be upgraded towards FTTH once the inhouse fiber cabling is installed.

No one size fits all

There are various technologies on the market today and the market for high speed broadband is not developed enough to decide today which of these technologies will prevail. A one size fits all approach will most probably not work.

In addition, existing differences between Member States with regard to either the chosen scenarios or the pace of migration made it implausible that a one size fits all approach could reflect the specific regulatory needs of individual country.

Technology Neutrality

Also, technological change happens very fast and future technologies might serve the intended regulatory objectives much better than today's technologies. A premature encouragement of certain technologies discourages the development and deployment of those new technologies. We would like to underline that technology neutrality thus remains necessary and is a prerequisite for fostering technological evolution.

The next technology wave will bring point to point networks on a logical layer. Next Generation Optical Access Networks (NGOA) are determined by very high, symmetric data rates as well as a simple network architecture that allows for integration of existing fibre elements. NGOA uses Dense Wavelength Division Multiplexing, DWDM. A definite wavelength is assigned to the individual subscriber („private lambda“).The assignment of one wavelength per subscriber allows a very flexible use of the access network. Parts of the optical spectrum can be allocated to different systems by using optical filter technology. These different systems can belong either to one operator or to different operators. The change of a subscriber to another operator needs only the assignment of a new wavelength. From a technical perspective the necessary procedure is very simple and requires only minimal effort from the operator. The optical filter can be located nearby the subscriber, at the central office, or in- between, e.g. in the current local office. This flexibility allows various options for access to the network.

DWDM combines the best of both PON and Ethernet Point to Point. DWDM enables point to point-like connections to be provided over a GPON-like architecture. The technology works by dividing a shared fiber into up to very high number of wavelengths that can be used to provide

dedicated connections to each customer premises. The fact that DWDM-PON provides a separate wavelength to each house means it would be easy to unbundle on the logical layer.

Conclusion of what we do not want

Nokia Siemens Networks thinks that fostering multiple fibre rollout now is both unrealistic and unnecessary as it leads to unneeded redundant infrastructure in the terminating segment.

What we want

Regulation should be technology neutral. Technologies chosen for broadband access will vary according to the market conditions, e.g. from country to country. We will see different evolution paths depending on current networks, on business models and market development, and other factors. NGA is a nascent market and has barely had time to flourish.

Regulation should only apply if there is market failure and vary depending on the competitive situation of the markets.

Today making the most of already existing broadband infrastructure by deploying VDSL2 - very high bit rate DSL - by using FTTC and FTTB architecture is the logical and adequate step in most cases. With bandwidth up to 100Mbit/s, FTTC and FTTB satisfy the bandwidth and application demands for the next few years in the most economically viable way. Operators can benefit from their current assets including existing copper infrastructure and from their proven knowledge in network operation to a maximum extent. Nokia Siemens Networks is convinced that the technological evolution - especially in times of a financial crisis - will follow an evolutionary approach from today's ADSL to FTTC and FTTB using VDSL2 technology. When consumer demand rises above 100 Mbit/s, next generation optical access technology, NGOA, will be deployed. The advantage of NGOA are cost efficiency as well as increased bandwidth, distance and coverage performance in comparison not only to VDSL but also in comparison to today's FTTH technologies.

It is important that regulation takes into account, that technology evolution of NGA is ongoing and a regulatory environment must be light and flexible enough so that innovation and investment - also in the forthcoming technology steps to next generation optical networks – are promoted.

Civil works represent a major part of the total roll-out costs for NGA and that therefore availability of (and access to) infrastructure such as ducts can reduce the overall investment significantly and can thereby facilitate NGA deployment.

Investment in infrastructure shall be done in the most economical way. Infrastructure might also be shared with other non-telco activities; e.g. renovation of sewage pipes, water, etc. Each time digging becomes necessary, fiber ducts shall be deployed.

We would like to underline that a uniform regulation may not be sensible as market conditions within Europe are very different depending on the concentration of business and private users. Therefore **we agree with the Commission that NRAs should examine the need to define geographic markets taking into account the competitive conditions created at both a national and sub-national level by the progressive roll-out of NGA networks and the status of infrastructure competition.**