



Nokia Siemens Networks' answer to the consultation on the open Internet and Net Neutrality in Europe

Nokia Siemens Networks very much welcomes this consultation on the openness of the Internet and Net Neutrality.

An open Internet and open access to services for end users is an important policy goal. NSN supports open access for end users to all services (including the Internet) any time and any place and for service providers fair and non-discriminatory access to delivery networks and customers. Open access must also include access to other people and to the content they can legally share. Justifications for this development are consumer benefits, increased innovation, openness, economic prosperity and social welfare. Consumers should have the right to demand open, non-discriminatory access to all digital services (including the Internet).

Answers to Question 1 - 15:

Question 1: Is there currently a problem of net neutrality and the openness of the internet in Europe? If so, illustrate with concrete examples. Where are the bottlenecks, if any? Is the problem such that it cannot be solved by the existing degree of competition in fixed and mobile access markets?

Nokia Siemens Networks does not think that there is currently a problem of net neutrality. The Internet has grown and developed in an open environment characterized by competition, cooperation and adaptation. It continues to have tremendous positive effects on businesses, consumers and the society at large.

We are not aware of any bottlenecks due to unfair or discriminatory behavior. Bottlenecks are more likely to result from capacity constraints the network infrastructure is facing. Due to ever increasing traffic flows, capacity constraints are more likely at peak hours today than they were in the past. In fixed networks, next generation access networks will help with meeting the demand if investment conditions are satisfactory. Compared to fixed networks, mobile networks are much more likely to face capacity constraints due to the limited nature of spectrum resources and other technical parameters.

Public policy should encourage more investment to expand access to the Internet at large. When addressing bottlenecks, we therefore suggest focusing on investment in new and increased network capacity, along with monitoring market developments.

Question 2: How might problems arise in future? Could these emerge in other parts of the internet value chain? What would the causes be?

Nokia Siemens Networks prefers not to speculate about future problems in a sector characterized by vigorous competition and innovation. Rather than legislate or regulate based on theoretical scenarios, we believe the appropriate course for policy makers is to

monitor developments across the Internet value chain and intercede only in the limited circumstances where competition or consumers are demonstrably harmed. However, Nokia Siemens Networks believes favorable market conditions fostering adequate competition practically eliminates the risk of future problems.

Question 3: Is the regulatory framework capable of dealing with the issues identified, including in relation to monitoring/assessment and subsequent enforcement?

Nokia Siemens Networks believes that the regulatory framework is perfectly capable of dealing with any future issues that may arise. See also answer to question 5.

Question 4: To what extent is traffic management necessary from an operators' point of view? How is it carried out in practice? What technologies are used to carry out such traffic management?

Nokia Siemens Networks recognizes that there are different services types and that those service types are influenced by different requirements. Generally a division can be made between managed and Internet based services. Though both services utilize the Internet Protocol (IP) they are very different in nature and use different business models.

Talking about the first category, managed services are services provided and operated by the network operator. Examples of such service are IP-TV and IP telephony services based on the IP Multimedia Subsystem (IMS). These are specific services an operator provides directly to his customers using the fact that the operator can control the technical network parameters and thus guarantee a certain user experience. Consumers have been accustomed to a certain Quality of Experience with these services as they also bear certain social importance.

Internet Access and Internet based services are another service category. Consumers are used to running multiple services at best effort at the same time.

Nokia Siemens Networks sees that these services should be seen separately and should not be confused. They operate based on different assumptions and different end-user expectations. Therefore also the network management practices used are very different. As the name already implies, managed services require a higher degree of network management than (best effort) Internet services. Managed services also drive investment and innovation, which also improves the Internet access service.

Examining more closely the Internet access service, networks have always been managed in different ways. Networks have been managed for reliability, improving user experience, and managing increasing traffic to ensure the fairness between users. As there are multiple purposes or goals for network management, there are multiple ways to perform network management.

Prioritization of network traffic is used to make sure certain priority traffic passes the network unhindered despite of network congestion. The quality and reliability of prioritized traffic is not affected by lower priority bulk traffic such as low priority file download. This is often called Quality of Service. End-users tend to consider e.g. Voice over IP (VoIP) to be higher in priority than bulk data transfer. Therefore prioritization can be used to enhance the user's Quality of Experience. There are multiple technical standards defined by different Standards Development Organizations than can be used to achieve Quality of Service. It is foreseen that new, innovative services can be achieved using these technologies (e.g. emergency services, HD videoconferencing, remote health monitoring etc.).

Another form of network management is securing and protecting the network and the end user from unwanted and/or harmful traffic such as spam and malware. Network operators may also need to manage traffic especially in case of unexpected network congestion.

Especially in mobile networks there can be several different levels of traffic priority classes. In addition to real-time and best effort classes, large data quantities such as e.g. bulk files (movies) could be downloaded as background traffic. Allowing appropriate and consistent prioritization throughout the network background traffic does not disturb real-time or interactive traffic.

Intelligent traffic management became an important tool in the operator's toolbox allowing them for instance harnessing unused, but otherwise available, network resources which provides better capacity utilization of the overall network, increases cost efficiency and provide users with better quality of experience.

Nokia Siemens Networks believes that in the light of this subset of examples it becomes clear that network management is a core principle in network operations, necessary for efficient and reliable performance of individual services. Reasonable network management helps Communication Service Providers (CSP) to prioritize time and resource critical traffic so that their networks are used optimally for the benefit of the end user.

Notably, emerging vertical market applications also are likely to benefit from such capabilities, including remote and home medical monitoring, smart energy and home automation and education applications.

Question 5: To what extent will net neutrality concerns be allayed by the provision of transparent information to end users, which distinguishes between managed services on the one hand and services offering access to the public internet on a 'best efforts' basis, on the other?

The revised EU Telecoms Framework is very well-suited to respond to the question of the openness of the Internet. The framework's transparency provisions are capable of addressing hypothetical issues around network management and quality of service differentiation. Nokia Siemens Networks sees that the framework and its transparency provisions as perfectly able to allay net neutrality concerns.

Nokia Siemens Networks is of the opinion that especially the provisions in the Universal Service Directive are sufficient to address transparency requirements. In particular Art 20 (b) gives end users the right to “information on any procedures put in place by the undertaking to measure and shape traffic so as to avoid filling or overfilling a network link, and information on how those procedures could impact on service quality”. Art 21 (3) d which gives national regulatory authorities the possibility to oblige undertakings providing public electronic communications networks and/or publicly available electronic communications services to “provide information on any procedures put in place by the provider to measure and shape traffic so as to avoid filling or overfilling a network link, and on how those procedures could impact on service quality”. Both provisions provide a clear legal basis for transparency.

As reflected in our response to Question 4, a wide variety of existing and emerging Internet-based services and applications require network management techniques and QoS guarantees. “Managed services” clearly bring numerous consumer benefits, and can be considered as additional services rather than replacements for “best effort” Internet access services. Nokia Siemens Networks anticipates that both types of services will continue to be offered by network operators. The Framework’s transparency provisions will serve to inform end users of the specifics regarding the services to which they subscribe.

Additionally Nokia Siemens Networks believes transparency in service offering is key. When users are informed about the nature of different services – either managed or Internet access – they are able to make intelligent decisions on which service is the right one for the user. However, due to the distributed nature of the Internet the network operator might be able to control only partly the service and the experience of the service. This distributed nature of the Internet has to be taken into account.

Question 6: Should the principles governing traffic management be the same for fixed and mobile networks?

There are technical differences between fixed and mobile, largely reflecting the architecture of the access networks. Mobile access networks depend amongst others on the frequency range used, the available capacity in that frequency band and the number of other users that share the medium at the same time.

Also the geographic location cannot be left unconsidered. Where it is very well possible to get a 5Mbit/s mobile connection in an urban area, this might not be the case in the countryside.

In mobile networks congestion may occur at a point of time when a large number of users happen to be in the same location using the network the same time. Thus, even in well designed and dimensioned networks the bandwidth cannot be guaranteed not only due to changing radio conditions.

In fixed networks, the capacity constraints are different and even when shared, there is generally more available bandwidth that is almost constant over time for a given deployment and therefore the network planning can be done more accurately.

While we agree that there are technical differences between mobile and fixed networks, we very much believe in the pragmatic approach of technology neutrality in the EU's regulatory framework for electronic communications. Thus differentiating policy principles according to technology might seem slightly contradictory. On the other hand, varying implementations of common high-level principles that apply to both types of platforms very well may be justified due to the considerations described above.

Question 7: What other forms of prioritization are taking place? Do content and application providers also try to prioritize their services? If so, how – and how does this prioritization affect other players in the value chain?

No answer.

Question 8: In the case of managed services, should the same quality of service conditions and parameters be available to all content/application/online service providers which are in the same situation? May exclusive agreements between network operators and content/application/online service providers create problems for achieving that objective?

No answer.

Question 9: If the objective referred to in Question 8 is retained, are additional measures needed to achieve it? If so, should such measures have a voluntary nature (such as, for example, an industry code of conduct) or a regulatory one?

No answer.

Question 10: Are the commercial arrangements that currently govern the provision of access to the internet adequate, in order to ensure that the internet remains open and that infrastructure investment is maintained? If not, how should they change?

No answer.

Question 11: What instances could trigger intervention by national regulatory authorities in setting minimum quality of service requirements on an undertaking or undertakings providing public communications services?

Question 12: How should quality of service requirements be determined, and how could they be monitored?

Question 13: In the case where NRAs find it necessary to intervene to impose minimum quality of service requirements, what form should they take, and to what extent should there be co-operation between NRAs to arrive at a common approach?

Combined answer for Questions 11-13:

We do not think that there is a need to legislate or regulate in the domain of net neutrality. Legislating minimum quality of service levels or mandating nondiscriminatory treatment of network traffic would reduce innovation and ultimately consumer choice at all levels of the internet. The market should be allowed to continue to develop, particularly in the absence of demonstrated harm to consumers and competition.

A variety of factors influence the actual experience a consumer of Internet-based services receives. In fact, the majority of such services are delivered on a “best effort” basis. While service providers rightfully should inform consumers about the characteristics of the services they are receiving, including speeds that can be expected, this is different than mandating a specific speed or quality of service performance.

Should such requirements nonetheless be contemplated, they must go hand-in-hand with significant allowances for network management by service providers. Attempting to provide a quality of experience for all consumers on a network requires the use of a variety of tools, as explained throughout this document. While such tools do not guarantee an optimal experience for all, it is reasonably certain that prohibiting or severely restricting their use would hamper or prevent a service provider from ensuring that adequate network resources are available at all times across its subscriber base. Excessive use of bandwidth intensive applications by even a limited number of network users can impact the performance of services delivered to other subscribers. This is especially true in access network architectures in which network capacity is shared between subscribers.

Question 14: What should transparency for consumers consist of? Should the standards currently applied be further improved?

Free access to information and transparency are and should remain key principles of an open Internet. End users need to be clearly informed of their service capabilities and uses and level of service quality that they should expect. Businesses and consumers should be able to access any content on the Internet and run any application and device that they choose.

There is no contradiction between free access to information and network management as long as there is transparency about quality of service and service capabilities and/or limitations. In a competitive environment, transparency obligations secure that consumers can make well informed decisions.

Reliability of network and service delivery, network and service performance as well as congestion-handling need to go hand in hand with providing the user with all information necessary for choosing service products that fulfill their communications requirements.

Question 15: Besides the traffic management issues discussed above, are there any other concerns affecting freedom of expression, media pluralism and cultural diversity on the internet? If so, what further measures would be needed to safeguard those values?

Nokia Siemens Networks shares the widely held view that the Internet, and adequate access to it, is critically important for freedom of expression, media pluralism and cultural diversity. It is transforming lives and societies across the globe.

Nokia Siemens Networks believes that the Internet and associated broadband technologies are powerful tools that promote global freedom and human rights. The Internet and the services it enables are enabling access to information and bringing a voice to the oppressed in different parts of the world.

We believe that it is very important that all governments work together to steadfastly promote the Internet as a medium that fosters freedom of expression and furthers human rights, and conversely should hold those accountable that intentionally misuse these technologies to infringe upon such rights. With the rapid pace of innovation and widespread availability of communications technologies, these difficult questions require political solutions as much, if not more, than technological ones.
