

SPECIALIZED SERVICES AND NET NEUTRALITY

Nokia Approaches Net Neutrality from a Market Value Perspective

The network neutrality discussion remains contentious because some parties frame the issue in inflexible terms. Statements that all packets must receive identical treatment to ensure an open Internet, or that no consumer safeguards are necessary are not likely to facilitate a constructive debate or result in consensus. That is why Nokia views the discussion in more practical terms. Policymakers should seek to:

- Develop a regulatory framework that will protect consumers and businesses that develop Internet-based applications and services from unreasonable abuse or restrictions on their use of networks.
- Ensure that the framework also allows network operators sufficient flexibility in pricing and service offerings to fuel innovation. Value creation everywhere in the value chain, from infrastructure vendors and network operators to application makers and consumers is key to driving innovation.

Avoiding abstract discussions is a critical component of developing a balanced plan that offers safeguards and innovation opportunities to all stakeholders in the Internet ecosystem.

Market Realities Should Frame the Net Neutrality Discussion

Mobile operators face an approximately 70 percent year-on-year growth in traffic. At the same time, in many markets the average revenue per user (ARPU) and return on capital employed (ROCEO) by the operators are flat or declining. Investment decisions are more challenging in this type of environment, which is one reason for the flat spending in the infrastructure sector the last few years. Specialized and differentiated services could allow operators to balance investment decisions with revenue expectations through improved monetization of network capacity. Improved monetization of network capacity is important to reverse the investment trend and to ensure the continuation of important research into advanced networks within the infrastructure sector. These are key market realities that must be considered as part of the net neutrality discussion.

Nokia believes that a variety of data traffic management and service level differentiation practices can be employed to improve monetization and the investment environment while still preserving an open Internet. Clearly defining limits, requiring transparency, and prohibiting discrimination against entities that do not elect differentiated treatment are sufficient safeguards to preserve openness and represent a better approach than blanket prohibitions on differentiated and prioritized services. The reality is that the mobile broadband ecosystem requires value creation at every level to continue the evolution of network capability and to enable the move to 5G. It is particularly important in the infrastructure sector where much of the research and development activity enabling advanced networks takes place.

Traffic Management and Quality of Service Differentiation

In spite of what some parties have argued in the net neutrality discussion, traffic management and differentiation of traffic treatment are not synonymous with service denial, degradation, or discrimination. Reasonable traffic management is necessary to promote network efficiency and reduce latency. Managing efficiency and latency are key to enabling networks to handle vast quantities of increasing traffic, to evolve and adapt, and to foster increasingly sophisticated services and applications. Wireless operators use quality of service differentiation to prioritize time and resource critical traffic so that the network's capacity can be used optimally and an appropriate user experience can be provided. Managing congestion and differentiating priority to guarantee an appropriate level of service quality for applications and services is not discriminatory and is in fact essential to a quality network. Fee based differentiation at the election of the end user or application/service provider, subject to limitations would therefore be consistent with these approaches. Further, such differentiation could be a tremendous source of value creation for the entire mobile broadband market.

Nokia Supports an Open Internet

Nokia believes in an open Internet and thinks that open access to all services, any time and any place, for consumers and businesses is an important policy objective. Accordingly, Nokia supports the goal of maintaining the Internet as an open platform for innovation and creativity in which consumers and businesses may:

- Communicate with any other individual or business and access the lawful content of their choice free from any blocking or throttling except in the case of reasonable network management needs, which are applied to all traffic in a consistent manner;
- Utilize applications and devices of their choice provided they do not compromise network security or integrity;

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and

- Have the freedom to choose from a range of pricing, usage, and service quality based packages from operators bearing in mind that an increasing number of services and applications require dedicated or enhanced service quality to function at optimal levels.

Nokia's Net Neutrality Vision

1. The mobile broadband ecosystem includes wireless operators, device makers, infrastructure and software vendors, and consumers. All of these benefit when value is created at every level with innovation not just in content, applications, and devices; but also in radio access technology. The current debate frequently misses this point.
2. Policymakers should consider the impact of regulation on consumers and “edge” companies, but also must consider the ability of operators to invest in the network and infrastructure vendors to support research into advanced network technologies. Rules that prohibit business models entirely will be damaging and harm the evolution to 5G. Allowing innovation and experimentation subject to reasonable safeguards is preferable.
3. Mobile operators should be permitted to transparently manage traffic and congestion, including traffic shaping, to provide managed services, to prioritize critical communications, and to transparently differentiate services offered to consumers by data volume, speed, time of day, and other criteria at the consumer's discretion.
4. Mobile operators should also be permitted to differentiate traffic treatment at the request of service and application providers where enhanced delivery is essential to reducing latency and improving quality of service (QoS). Such “specialized services” would be offered to all entities providing similar services or applications at their individual election, and at parity of treatment to all other specialized services traffic.
5. Entities whose traffic does not qualify for specialized service treatment, or that choose not to pay for enhanced QoS would similarly receive “best efforts” treatment at parity with all other non-prioritized traffic.
6. There is no contradiction between free access to information and traffic management, both to manage network conditions and to create value in the ecosystem. Transparency about pricing, quality of service, and service capabilities/limitations provide important safeguards. Additional prohibitions against discriminatory practices will also provide protection. This could include prohibitions against blocking or throttling traffic that is unrelated to legitimate efforts to ensure efficient and secure network conditions.

Nokia's Recommendations on Data and Service Oriented Differentiation

Nokia has analyzed global pricing, usage, and investment data. We found that current monetization of data is unlikely to support the level of infrastructure spending and associated research and development necessary for an evolution of 4G technology or to sustain the path to 5G. Several dimensions of differentiation directed toward the end-user customer and toward content, application, and service providers could alter this situation.

Data focused differentiation: Nokia believes that in a competitive market, policymakers should allow operators to offer data plans that transparently manage traffic and congestion on mobile networks, including traffic shaping and prioritization of critical communication. End-user customers could benefit from transparent differentiation of data volumes, speeds, or times of day among other options. These data plans should be offered on a non-discriminatory basis to all customers while preserving the ability to select a non-differentiated option.

Service focused differentiation: Operators should be allowed to transparently differentiate traffic delivery to end-user customers based on service characteristics (e.g. real-time voice, SMS, VoIP, search, music streaming, video, p2p, etc.). Nokia supports giving end-user customers the choice to opt for different service categories, matching their individual preferences and allowing operators to price based on those preferences.

Similarly, Nokia supports allowing operators to offer specialized services, or enhanced QoS traffic delivery for a fee to content, application, or over-the-top (OTT) service providers. Such services would be offered on a transparent and non-exclusive basis subject to a requirement that entities electing specialized services receive parity with all other specialized services traffic. Operators would also be prohibited from assigning a higher priority to its own competing services than it makes available through the specialized service offering.

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