

NET NEUTRALITY

Net neutrality denotes the neutral transmission of data via the Internet, i.e., every packet of data, regardless of its content, origin and the application that created it, is treated the same way and the best effort should always be made to forward it. This concept is often regarded as a fundamental characteristic of the Internet. However, the amount of data that is transported via the Internet is increasing rapidly, especially because of applications like music and video downloads, Internet TV, and Internet telephony. All these applications require large capacities. This may lead to a capacity overload and delays of data transmissions. The current technological state allows for assigning different priorities to different data packets. Therefore, the discussion has emerged whether network operators should be allowed to treat different data packets differently, e.g., time sensitive data transmission like Internet telephony or video streaming differently than less time sensitive data transmission like e-mails. One possible scenario would then be that network providers demand a higher price for fast data transmission.

Proponents of net neutrality demand net neutrality to be legally enforced. They claim that otherwise the free exchange of information that makes the Internet the most democratic medium is at risk. They fear that if net neutrality is not maintained, this may lead to a two-class system and even to censorship and blocking of inopportune websites. Further it is argued that net neutrality ensures the innovativeness of the Internet sector, by allowing the free transmission of content, products and services, which is of special importance for small and new firms.

In contrast, opponents of strict net neutrality rules are mainly network operators that make investments to roll out broadband networks. They argue that net neutrality allows other firms to use their network capacities extensively without compensating adequately for them. Network operators therefore claim that they should be allowed to charge for extensive usage and high speed transmission within their networks. Otherwise further investments in the network infrastructure would not be profitable and further roll out of high speed networks would not be undertaken.

In the US there is currently a debate whether net neutrality should be regulated by law, following a lawsuit between the Federal Communications Commission (FCC) and Comcast, the second largest net-

work operator. In October 2007, Comcast was accused of secretly deploying filtering technologies to manage its network in order to keep some peer-to-peer traffic from overloading its network and hence affecting the accessing speeds of its other Internet subscribers. The FCC deemed it unreasonable for Comcast to discriminate against particular Internet applications and not to disclose its practice adequately to its customers and therefore ruled against Comcast's practices of throttling Internet traffic and delaying peer-to-peer traffic. Comcast appealed to the US Court of Appeals, claiming that no legally enforceable standards or rules on the matter existed. In April 2010 the federal appeals court ruled that the FCC had limited power over Internet traffic under current law. This decision allows network operators to block or slow specific sites and charge sites to deliver their content faster to users. In the EU in contrast, near consensus was reached on the importance of preserving the openness of the Internet at the public consultation held on "The Open Internet and Net Neutrality in Europe" in 2010. The need for further EU legislation was not seen, but expectations were voiced that additional guidance may be needed in the future.

Instead of imposing net neutrality by regulatory interventions, two other means are currently preferred to ensure net neutrality: competition and transparency. Competition between network providers and free customer choice of ISP (Internet service provider) are expected to ensure net neutrality. However, to support this process, transparency over the traffic management practices of network operators is needed. Several countries, e.g., Canada, Japan and the UK, have understood this need and issued rulings that require network operators to disclose all network management practices.

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Table

Net neutrality

Country	Previous Developments	Current Situation/Discussion
Australia	Volumetric pricing of internet by ISPs: Internet use is currently capped and usage above monthly plans is throttled or charged at a pre-determined rate. It is argued that this practice reduces incentives for ISPs to block or throttle content unaffiliated to the ISP or generated by users, and encourages them to promote extra use of content from any source.	The ACCC decided against imposing a net neutrality ruling in 2004, arguing that enforcing certain net neutrality rules would negatively affect competition in the market. To address the issue of lack of equal access to infrastructure, the Australian government announced in 2009 that it would establish a new, government-controlled entity to build, own and operate a new high speed national broadband network.
Canada	The principle of "common carriage" requires communication networks to provide non-discriminatory treatment of data and neutral access to other networks. This principle originates from railways and was then also applied to telegraph and telephone networks. The Telecommunications Act of 1993 stated: "No Canadian carrier shall, in relation to the provision of a telecommunications service or the charging of a rate for it, unjustly discriminate or give undue or unreasonable preference toward any person, including itself, or subject any person to an undue or unreasonable disadvantage."	Although the common carriage regulation was intended for telephone services, the principle now serves as a basis for regulation of new technologies and services, including broadband Internet access. After several violations of the principle of net neutrality such as traffic shaping, bandwidth throttling and blocking of websites, the CRTC issued an internet traffic ruling requiring ISPs to disclose all network management practices.
EU		As part of the 2009 Telecoms Reform Package, the EU Commission committed itself to scrutinising the open and neutral nature of the Internet and reporting on the current state to the European Parliament and the EU's Council of Ministers. The public consultation on "The Open Internet and Net Neutrality in Europe" ran for 3 months in 2010, as part of the Commission's preparations for the report. There was near consensus on the importance of preserving the openness of the internet. The need for further EU legislation was not seen, but it is expected that additional guidance may be needed in the future.
France	The principle of net neutrality is not codified in legislation but the best-effort practices that have developed over the past several years are chiefly the result of unwritten rules. The current legal framework requires "neutrality with respect to the content of transmitted messages"; however, this notion pertains primarily to non-discrimination between users and provides a rather limited basis for regulatory intervention.	ARCEP believes that it is in everyone's interest for the principle of net neutrality to continue to exist, for technical, economic and social reasons. In September 2010, ARCEP published ten proposals on the Internet and network neutrality. Network neutrality can only be achieved if Internet access is neutral with regard to the type of content, service, application, device or the address of the stream's origin or destination. Furthermore, transparency and the monitoring of traffic management techniques are necessary.
Germany	In 2009, the coalition agreement between the CDU, CSU and FDP stated that competition currently ensures net neutrality. However, the continued development will have to be observed closely and, if necessary, countermeasures taken to preserve net neutrality. In March 2010, a committee of enquiry on the Internet and the digital society was set up to investigate, among other things, the current state of net neutrality.	The EU Telecoms Reform Package and the draft for the new German telecommunication law allow for the national regulators to define a minimum quality. This addresses the concern that prioritisation of certain services may significantly slow down other services. The German regulator Bundesnetzagentur is considering this option. It further states that discrimination is present two service providers offering the same services are treated differently. This kind of discrimination can already be counteracted by the existing competition or telecommunication law. However, different treatment of different services, e.g., services that require a certain quality, is not considered to be discrimination as long as all providers of that service are treated equally and in a transparent manner.

(Table continued)

Country	Previous Developments	Current Situation/Discussion
Japan	Several pre-existing conditions, such as service- and facilities-based competition, have created an environment in which net neutrality discordances are less likely to occur. However, after a warning given by the Fair Trade Commission in 2000 about the treatment of the incumbent NTT, the MIC forced NTT to lease out its unused fibre optic infrastructure ("dark fibre") at low prices to competitors and to grant access to its local "last-mile" infrastructure. Another step taken by the MIC was to define transparency as a guiding principle for broadband services and net neutrality.	Broadband internet is growing rapidly, especially as a result of an increase in peer-to-peer file sharing, which is affecting the speed of the network as a whole. Therefore, traffic management practices have become an important issue for ISPs, regulatory bodies, and the public at large. In 2007, the MIC formulated packet-shaping guidelines and ways to prevent discriminatory behaviour: packet shaping was deemed reasonable under certain circumstances. In 2008, four associations of telecommunications providers elaborated guidelines such that some restriction of traffic in the case of excessive bandwidth demand was allowed. No blocking of high-bandwidth applications or users was permitted, however. Furthermore, ISPs should disclose all traffic shaping policies to users in advance and make this information publicly available online.
United Kingdom	Ofcom mandated the incumbent British Telecom to separate its retail internet access services from its wholesale arm. As a result, since 2006, wholesale Internet has been provided by Openreach on an open access basis. Since Openreach ensures that last-mile infrastructure is neutrally available to other ISPs, there is less incentive for BT, as well as competing ISPs, to participate in discriminatory practices.	In 2010, Ofcom began examining the traffic management practices of ISPs, as media companies had raised concerns about net neutrality and the ISPs' traffic management practices. Ofcom is reluctant to undertake any regulatory interventions, arguing that net neutrality legislation would be harmful to investment and growth. Rather, Ofcom supports transparency and the responsibility of consumers by giving them information about ISPs' traffic management practices and enabling a straightforward process to change ISPs.
United States	In 2005, the FCC published the Broadband Policy Statement which states that in order to encourage broadband deployment and preserve and promote the open and interconnected nature of the public internet, it would adhere to the following pro-consumer principles in its ongoing policymaking activities: (a) consumers are entitled to access the lawful Internet content of their choice; (b) consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement; (c) consumers are entitled to connect their choice of legal devices that do not harm the network; and (d) consumers are entitled to competition among network providers, application and service providers, and content providers.	In October 2007 it was reported that Comcast Corporation, the largest cable television operator and the second largest ISP, secretly deployed filtering technologies to manage its network in order to keep some peer-to-peer protocol traffic from overloading its network and hence affecting the access speeds of its other internet subscribers. The FCC deemed it unreasonable for Comcast to discriminate against particular internet applications and not to disclose its practice adequately to its customers. In July 2008, the FCC condemned Comcast's practices of throttling Internet traffic and delaying peer-to-peer traffic. However, the FCC was overruled by the US Court of Appeals on the basis that current legislation does not give authority to stop violations of net neutrality. In December 2010 the FCC adopted new guidelines for net neutrality that impose neutrality also for mobile networks and transparency for network management.
Abbreviations: ISP: Internet Service Provider; – ACCC: Australian Competition and Consumer Commission; – CRTC: Canadian Radio-television and Telecommunications Commission; – ARCEP: Autorité de régulation des communications électroniques et des postes; – NTT: Nippon Telegraph and Telephone; – MIC: Japan Ministry of Internal Affairs and Communications; – OFCOM: Office of Communications; – FCC: Federal Communications Commission		

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