

Definition: **Net Neutrality** from *Dictionary of Information Science and Technology*

the stance taken by many in the technology field that pricing of broadband service should be free of use restrictions and that content and content providers should not be regulated (Barthold & McNutt, 2010)

Summary Article: **Net Neutrality**

from *The SAGE Encyclopedia of the Internet*

Net neutrality is a movement within the technology community that seeks to establish and preserve fair and open network accessibility for all end users, content providers, and technology protocols. It is the idea that the Internet—comprising many protocols such as hypertext transfer protocol, File Transfer Protocol, email (Internet Message Access Protocol, Post Office Protocol, Simple Mail Transfer Protocol), and many others—should be equally accessible for all users. Furthermore, it is the idea that all publishers (e.g., websites, bloggers, social media sites) and networked services (e.g., Netflix, Spotify, Hulu) should be equally available to all paying customers. More basically, perhaps, many see net neutrality as the fundamental principle of a networked society. It is the ability for everyone to communicate freely online with whomever, through whichever channel they choose. The term *net neutrality* is generally attributed to Columbia University law professor Tim Wu. Wu used the term in his 2003 article “Network Neutrality, Broadband Discrimination.”

Central to the discussion about net neutrality is the role of the U.S. federal government, and specifically the Federal Communications Commission (FCC), in regulating what Internet service providers (ISPs) can and cannot do in their critical roles providing network connectivity. There are important social, economic, and technological considerations on both sides of the net neutrality discussion, each with significant ramifications for the future of the networked world. This entry discusses the arguments for and against net neutrality, the technology of net neutrality, and economic, social, legal, and political considerations.

Arguments for Net Neutrality

Proponents of a fair and open public network believe that this neutrality could be jeopardized by large corporations and ISPs working to give preferential treatment to some parts of the Internet over others. The practical neutrality of the network has already been put to the test as major telecommunications providers and ISPs have begun to develop plans to throttle network bandwidth or provide “fast lane” access for websites and services willing and able to pay for it. For example, a major online content provider could negotiate with an ISP to give its users a faster connection to its content. When these large conglomerates provide preferential treatment to certain sites, other content producers may struggle to get their content to the public.

When bandwidth is throttled by the ISPs, not all customers experience the same Internet. In some extreme cases, ISPs could even decide which websites users are allowed to access within their networks (a practice known as *data discrimination*). Defenders of a neutral network believe that the government has a duty to create regulations that prevent the gatekeeper ISPs from making decisions based on their corporate interests rather than the interests of their customers.

Many advocates of net neutrality believe that access to the Internet is quickly becoming (if it is not

already) a fundamental human right. As more critical services rely on the Internet, the public must be able to access these services freely and with reliable uptime and speed.

Arguments Against Net Neutrality

Principal opponents of the net neutrality movement suggest that ISPs should be allowed to conduct business without the interference of government regulation. These corporations—ISPs, telecommunication conglomerates, and supportive infrastructure providers—have argued that government regulation would be detrimental to corporate profitability and would eventually cause higher prices for consumers. One tangible benefit often cited by ISPs is that the practice of zero-rating certain services for mobile customers actually increases accessibility for some who may not be able to afford an expensive broadband connection package. An average mobile phone customer pays for a monthly service plan that includes 2 gigabytes of data transfer. Customers use data when, for instance, they visit a website or scroll through a social media app on their mobile device. Zero rating is a feature that allows consumers to access certain sites or services without using up any of their mobile data allocation; in essence, that data comes at a zero rate, since it does not count against the customer's paid plan. In this way, telecom companies can provide access to popular websites (e.g., Facebook, Wikipedia, Google) for free or at a very low cost for consumers in emerging markets.

Throttling and Targeting

There are several ways in which ISPs and telecom providers can manipulate Internet traffic. One of the more common ways is through *throttling*, or limiting the bandwidth of connections on the network. In the past, some ISPs have targeted peer-to-peer networks and file sharing services and essentially put a cap on the amount of data and speed with which those users can transfer files. Bandwidth throttling is a technique ISPs use to combat network congestion, but net neutrality advocates say that it places too much control in the hands of the ISP's engineers. This is also an example of *protocol targeting*, a practice in which ISPs can identify and manipulate certain types of connections. For example, most email traffic over the Internet uses Post Office Protocol, Internet Message Access Protocol, and/or Simple Mail Transfer Protocol for transmitting messages. In contrast, File Transfer Protocol and hypertext transfer protocol serve different purposes (transferring files and browsing the Internet, respectively).

Targeting protocols allows ISPs to privilege or restrict certain types of connections. Protocol targeting is one technical example of how ISPs could work with content providers to both improve service and create potentially lucrative contracts. This is also what many net neutrality advocates fear, as it places a great deal of power (and money) in the hands of a small group of interested parties.

Economic and Social Considerations

Undoubtedly, the Internet has had a profound impact on contemporary society. Because connection to the Internet in all its forms is now so vital, the issue of net neutrality has far reaching implications for the global economy and society at large.

Opponents of net neutrality suggest that government regulation of ISPs would be detrimental to things like infrastructure investment, job creation, and quality of service. Under government regulations, ISPs may find it more difficult to build new physical networks or to update existing ones in order to improve their product offerings, and thus, profits. With what amounts to a perceived cap on profits, ISPs may not have the additional capital needed for expanding to new markets, hiring new employees, and continuing their investment in research and development.

Conversely, net neutrality defenders argue that the small number of viable ISPs operating today have sufficiently high profits and control a near monopoly in most markets. In some areas, customers only have one or two ISPs to choose from. This economic dominance, coupled with unrestricted control over the content flowing through their networks, leads many open Internet advocates to call for the government to temper the power of major telecoms by way of federal regulations.

Legal and Political Considerations

Among the earliest laws dealing with the Internet and net neutrality was the United States Telecommunications Act of 1996, signed into law by President Bill Clinton. This act was designed to address many of the concerns that had arisen since the adoption of its predecessor, the Communications Act of 1934. The 1996 regulations sought to deregulate the changing telecommunication industry and stimulate open market competition among new service providers. Critical to this act was the distinction drawn between telecommunication services and information services. Whereas telecommunication services are offered directly to the public, information services require an intermediary to provide specific information services through a telecommunications network. These two classes of services are regulated differently, and the distinction has led to much of the controversy surrounding net neutrality in the years since 1996.

Several regulative structures have been proposed and debated in legislative bodies around the world. In the United States, the mid-2000s saw the introduction of several unsuccessful measures. In 2010, the FCC approved the Open Internet Order, establishing a set of rules that would preserve net neutrality. The FCC's authority was challenged, and ultimately tightened, in a 2014 case involving Verizon Wireless. As a result of this case, several new measures have been introduced that attempt to clarify how telecom and information providers are classified, and the role of the federal government in regulating the industry. In 2015, under President Barack Obama, the FCC voted to regulate broadband Internet service under Title II of the Communications Act and adopted rules to make sure that ISPs did not block lawful content or prioritize certain content providers for a fee. In December 2017, the FCC led by the chair appointed by Donald Trump, Ajit Pai, voted to dismantle the rules governing how companies connect customers to the Internet.

Looking Ahead

The idea of a fair and open Internet is complex and difficult to implement. There are many parties involved in a debate that has far-reaching implications for the economy, government, and society at large. Abundant corporate profits could be gained or lost, depending on the neutrality of the Internet, and at the same time, individual freedoms, privacy, and perhaps human rights may be in jeopardy without intervention from governments or regulating bodies. Both advocates and opponents of net neutrality will undoubtedly continue working for their cause, and the debate will take on new dimensions as technology and digital economics grow and change.

See also Broadband Internet; Deep Packet Inspection; Geoblocking; Internet Censorship; Internet Law; Internet Service Providers; Right to Internet Access

Further Readings

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James T. Jarc

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