

The Ethics of Net Neutrality

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During the protests last January, Egyptian government shut down the internet for millions of users nationwide. Although how they were able to choke off internet access remains unknown, evidence suggests that soon after the government ordered Egypt's four biggest internet providers to halt connections, technicians at each of the ISP cleared the DNS routers of all IP addresses, thus preventing anyone from accessing them within or outside the country. As a result, approximately 93% of all Egyptian networks became unreachable to the public (Rich-
tel). This bizarre incident poses a serious question: Should anyone be allowed to restrict the internet?

The internet stands as a collection of privately owned servers and end hosts—a resource theoretically belonging to everyone. The power to shut it down, many argue, shouldn't exist in the hands of a single person or organization. But unfortunately it does. ISPs have the ability to deny their customers access to the internet, or even specific parts of it.

Now, withholding internet in Egypt is relatively easy compared to withholding internet in the U.S. For one thing, there are only four Class A ISPs in Egypt (Link Egypt, Vodafone/Raya, Telecom Egypt, and Etisalat Misr) who own the infrastructure necessary to host broadband connections. U.S. has numerous such ISPs. If anyone wanted to shut down the internet here, it would be logistically difficult to convince every ISP to comply.

But even though the internet in the U.S. will unlikely ever be shut down completely, limiting access to certain parts of it could be possible within the next few decades. This is because big cable and telephone companies, such as Comcast and AT&T, want to charge content providers for having more bandwidth and priority. They believe that content providers should pay for the privileges currently inherent in all U.S. internet services. This means those who can't bear the extra cost will have their sites load slower and their applications work less efficiently. ISPs can even go as far as to block a website entirely or slow it down so much that it's unusable.

Enter Net Neutrality

What's stopping American ISP's from discriminating against content providers today lies in a fundamental principle called *Net Neutrality*. Net neutrality says that all content and services on the internet should be treated equally. It guarantees a level playing field for all web sites and internet activities regardless of the resources funding them. It's how bloggers can compete with major newspaper corporations for readers; it's how a band no one's ever heard of can build an underground audience and eventually rise to fame; and it's why Google is able to list the sites relevant to your query and not just those who pay the most to reach you. The most redeeming quality of net neutrality is that it "[preserves] a Darwinian competition among every conceivable use of the internet so that only the best survive" (Wu 142). Promoting net neutrality is just as challenging as promoting fair evolutionary competition in any privately owned environment, be it a telephone network, operating system, or even a retail store. Government policies in such industries must not allow the short-term interest of owners to prevent the best products from becoming available to the end-users (Wu 142). Communications regulators worry that private interests of broadband providers will conflict with public interest of the competitively innovative environment of the internet. They fear in the absence of net neutrality, even though ISPs will likely be more profitable, content providers and end users will be discouraged from creating new content due to the financial burdens of a biased network (Litan and Singer 30).

Network owners, on the other hand, would be delighted to have a tiered internet, where if you pay the most you get top tier and your services run faster than everybody else's. ISPs AT&T and Verizon have argued that charging content providers for prioritization will eventually improve infrastructure and lead to faster internet service for all (Cheng, Bandyopadhyay, and Guo 4). They claim the additional money from content providers would allow for additional routers and servers to be built, which in turn will result in better service for everyone in the long run.

Opponents of prioritization and those who support net neutrality argue this is certainly not the case—in fact, placing a price on prioritizing content could very well create disincentives for expanding infrastructure. The counter-argument here is that ISPs would benefit from a congested internet where some content providers are willing to pay more for better service.

Therefore, in a non-neutral network, ISP's are unlikely to expand because profits are greater in a congested network where content providers have to pay more to avoid sitting in traffic. If the goal of public policy is to expand network availability and reduce congestion, then policy-makers must avoid any discrimination in prioritization of data packets (Cheng, Bandyopadhyay, and Guo 4).

Laws enforcing net neutrality are laid out by the Federal Communications Commission (FCC) and Congress. One rule pertaining to non-discrimination says that: If a broadband provider offers enhanced quality of service (QoS) to one content provider, it must offer the same enhanced QoS to all content providers for free (Litan and Singer, 4). This policy forces all efforts towards enhanced QoS to occur between the ISP and end user as oppose to the ISP and content provider.

House bill H.R. 5273 protects net neutrality by demanding access providers “not block, impair, degrade, discriminate against, or interfere with the ability of any person to utilize their broadband service.” They must deliver all content “at least equal to the speed and quality of service that the operator’s content, applications, or service is accessed and offered, and without interference or surcharges on the basis of such content, applications, or services.” Furthermore, content providers are required “not to discriminate in favor of itself in the allocation, use, or quality of broadband services or interconnection with other broadband networks” (Litan and Singer 4). Clearly, the FCC does not want content providers to eliminate their competitors simply by buying off their ISPs. Proponents of net neutrality agree any additional charges for enhanced QoS would only hurt those content providers who are unable to financially compete against fellow network giants; therefore, equal treatment of all content providers is the only way to ensure competition between internet services and ultimately preserve an innovative environment.

Hahn and Wallsten argue that the current structure of the internet allows for its rapid expansion (Hahn and Wallsten 3). Although net neutrality favors big companies, such as Google and Youtube, and allows them nearly unrestricted freedoms in hosting web content, it also gives start-ups and developers a chance to put their products on the market at reasonably low costs. The current system grants equal opportunity for users to openly interact with one

another, allowing for freedom of expression. Thanks to that reason, we have an environment which promotes innovations and development of new technologies. Without net neutrality there will be fewer start-ups due to the cost of purchasing prioritized connections in a biased network, which will likely result in less innovation and fewer new technologies. But on the other hand, developers in the absence of net neutrality will better consider the bandwidth-usage of their applications (Hahn and Wallsten 3). They are more likely to take into account connection factors and network usage while creating their applications that otherwise would have been overlooked. Nevertheless, even though there would be more motivation to produce applications that accommodates a biased network, it's highly unlikely that improvements in efficiency of the application will outweigh the financial stress of content providers who lack the necessary funding.

Net Neutrality Flaws

Net neutrality regulations make it illegal for broadband providers to offer “fast lanes” to those who are willing to pay extra. It ensures everyone has a fair share of the bandwidth, but it neglects cases in which “fast-lanes” can help save lives. An example of this is telemedicine, which is not yet practiced because no one wants to risk remote surgery when video streams can be congested by other online activities (Hahn and Wallsten 2). A Japanese study suggests that real-time remote surgical collaboration is possible with a dedicated internet link; however, with net neutrality laws in play, such collaboration are futile (Hahn and Wallsten 4).

Another ongoing debate about net neutrality is whether pricing of services should be regulated. It seems reasonable to standardize broadband service pricing, but the issue is that it can become extremely complex. Hahn and Wallsten used natural gas regulation as an example. At first, gas prices were divided into five tiers, each had a regulated price depending on when and where the gas was being sold. But by the time the Natural Gas Policy Act was passed in 1978, there were twenty-eight different categories of gas pricings. Finally, they concluded that it is hard to developed a reasonable pricing system, and those regulations might greatly affect welfare of the economy. From such a homogenous resource such as natural gas, so many

categories were developed. It's hard to imagine how complex a pricing mechanism for internet access would be considering the different types of broadband technologies available today.

Here is another great example of why net neutrality can be harmful. Google offer "free" Wi-Fi internet in downtown San Francisco to users at the cost of agreeing to watch Google-powered advertisements. While a few would rather not, most are more than willing to see those ads for free internet access (Hahn and Wallsten 5). Companies pay Google to have those advertisements delivered to users, and users get free internet access, so it is win-win situation for Google, users, and those content providers that have their ads delivered. However, it is possible that net neutrality advocates will demand such innovations illegal fearing that Google may have too much control of how content moves between the internet and its users. In which case, not only will consumers lose a valuable resource, but Google and the content providers would also forfeit a lot of potential customers.

Furthermore, Litan and Singer argue that by requiring non-discrimination in the provision of QoS, network neutrality proposals would destroy the social benefits associated with tierd QoS offerings (Litan and Singer 24). Consumers voluntarily spend more money on enhanced QoS because the value created through this feature outweighs its incremental price. The consumer welfare lost by eliminating enhanced QoS is equal to the welfare enjoyed by customers of enhanced QoS. In economic terms, the difference between a customer's willingness to pay for a product and its price is called consumer surplus. Without QoS, companies such as Sony and Blizzard can not provide a high quality gaming experience for its players, and thus players value the game less and consumer surplus decreases. Similarly, other applications such as video streaming and music would suffer for the same reasons (Litan and Singer 23).

Litan and Singer also argue that, not only would the quality of applications diminished under net neutrality, but the cost per customer of providing basic internet would increase significantly if access providers are prohibited from using intelligent traffic control, including QoS, to meet the demand for internet traffic (Litan and Singer 27). They estimate the monthly cost of providing broadband would increase twelve dollars just to accommodate "power" users. Since obviously not everyone uses the same bandwidth online, those who only use their connections to check email and chat would suffer the hidden costs of those who incessantly download

and cause traffic. Litan and Singer call this “blended QoS”, where some users are misled to pay more than they have to. Likewise, if every content provider must acquire the same QoS, content providers who do not value those services will be unambiguously worse off.

Should We Uphold Net Neutrality?

The internet today is growing exponentially. It’s become a diverse web of many backbone networks and end hosts tightly connected to each other. Due to current net neutrality laws, these interconnecting networks can send and receive data to each other free from additional costs. Without net neutrality, that will not be the case. Network operators would regulate traffic more closely and focus on making money out of each other rather than providing reliable service. While net neutrality introduces some problems for content-providers and end-users, we believe the benefits outweigh those problems. Net neutrality offers new developers the opportunity to share their ideas with the world by not crippling them financially. While the abolishment of net neutrality benefits broadband providers, it would bring harm to a lot of content providers and it could drastically stifle how the internet operates, as well as the economies that rely on its services. The technology industry is developing so fast today, it’s impossible to say what is best for the future. But one thing’s for sure: abolishing net neutrality will change the internet profoundly—for better or worse. Hahn and Wallsten says “Hands off the internet’ was a good policy when the internet was brand new, and it’s good policy now (Hahn and Wallsten 6). And as they suggest, we believe it’s best to leave the internet the way it currently is.

Works Cited

- Cheng, H. Kenneth, Bandyopadhyay, Subhajyoti and Guo, Hong. "The Debate on Net Neutrality: A Policy Perspective" 25 Jun 2008. Information Systems Research, Forthcoming. Available at: <<http://net.educause.edu/ir/library/pdf/CSD4854.pdf>>
- Hahn, Robert W. and Wallsten, Scott. "The Economics of Net Neutrality." *The Economists' Voice*: Vol. 3: Iss. 6, Article 8. The Berkeley Electronic Press 2006. 20 Nov. 2011. <<http://www.bepress.com/ev/vol3/iss6/art8/>>
- Litan, Robert and Hal Singer. "Unintended Consequences of Net Neutrality Regulations." *Journal on Telecommunications & High Technology Law*, 2007. Available at: <http://www.naviganteconomics.com/docs/Litan,Singer_Unintended_Consequences_Net_Neutrality.pdf>
- Richtel, Matt. "Egypt Cuts Off Most Internet and Cell Service." *The New York Times*. 28 Jan. 2011. 20 Nov 2011. <<http://www.nytimes.com/2011/01/29/technology/internet/29cutoff.html>>
- Wu, Tim. "Network Neutrality, Broadband Discrimination". *Journal of Telecommunications and High Technology Law*, Vol. 2, p. 141, 2003. Available at: <<http://campus.murraystate.edu/faculty/mark.wattier/Wu2003.pdf>>