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RESEARCH ARTICLE

THE IMPORTANCE OF NET NEUTRALITY

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ABSTRACT

More than any other invention of our time, the Internet has unlocked possibilities we could just barely imagine a generation ago. And here's a big reason we've seen such incredible growth and innovation: Most Internet providers have treated Internet traffic equally. That's a principle known as net neutrality and it says that an entrepreneur's fledgling company should have the same chance to succeed as established corporations. For the purpose of developing open, fair, and free Internet, internet users should have the rights to go where they want, when they want on both wired and wireless.

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INTRODUCTION

The FCC (The Federal Communications Commission) has long been committed to protecting and promoting an Internet that nurtures freedom of speech and expression, supports innovation and commerce, and incentivizes expansion and investment by America’s broadband provider [web site www.fcc.gov], But, Net Neutrality has been a hot topic ever since it’s mentioning in 2008, where the news brought attention to FCC announcing plans to permit Internet Service Providers, or ISPs, to offer content providers such as Netflix, Google or Facebook to pay higher prices for faster Internet connection speeds, essentially dividing the users into those who do not decide to use the fast lanes and those willing to pay for exclusive content. The main problem with this practice was that it greatly violated the terms and rules of Net Neutrality, and this attention helped the people criticize the FCC for their ruling and convinced them to change it, with over one million responses given to the FCC during their official public comment period, and big content providers such as Vimeo and Reddit joining the side of the common people in an (successful) attempt to overturn the FCC’s ruling.

Now, more than a year has passed, and again, net neutrality is being threatened by big corporations in the form of zero-rating. In order to combat these illicit practices, we must first understand net neutrality, the conflict mentioned previously, and how to react in the face of our Internet rights being threatened.

[web site www.fcc.gov] NEWS Federal Communications Commission, IMMEDIATE RELEASE: NEWS MEDIA CONTACT: February 26, 2015, web site www.fcc.gov.

[Angele A. Gilroy, 2015] Definition on Net Neutrality

Net Neutrality is the Internet’s guiding principle: It preserves our right to communicate freely online. This is the definition of an open Internet. Net Neutrality means an Internet that enables and protects free speech. It means that ISP (Internet service providers) should provide us with open networks — and should not block or discriminate against any applications or content that ride over those networks. Net Neutrality, as defined by Wikipedia, is “the principle that Internet service providers should enable access to all content and applications regardless of the source, and without favoring or blocking particular products or websites.” The FCC regulation impose highly restrictive regulations on the Internet (“Open Internet Order”) for protecting free expression and innovation on the Internet

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and promote investment in the nation's broadband networks [web site www.fcc.gov]. The FCC has long been committed to protecting and promoting an Internet that nurtures freedom of speech and expression, supports innovation and commerce, and incentivizes expansion and investment by America's broadband providers [web site www.fcc.gov]. In Layman's terms, a user should be able to pay a monthly or yearly price to a ISP for unlimited access to the internet, the same amount of access that everybody else on the world has. Preserving the pillars of Net Neutrality are extremely important, because this unlimited access and free, open space for anyone to do anything allows users or groups of users create content on the Internet for all to witness. This ability to forge new websites and services at the frontier of the Internet is what allowed content providers to eventually become large companies, such as Facebook, a popular online social networking service that originally was restricted to members of Harvard students, but eventually grew into the multimillion-dollar company it is today. Net neutrality refers to an Internet where the infrastructure remains separate from the content it carries and all data are treated equally by the carriers that transmit it (William *et al.*; Robert Litan, 2014).

Who is the advocate on Network Neutrality

Net Neutrality also allows for freedom of speech to flourish within the Internet, as governments are unable to discriminate or change information to their own liking. The FCC should ensure the general principles that owners of the networks that compose and provide access to the Internet should not control how consumers lawfully use that network, and they should not be able to discriminate against content provider access to that network (Angele A. Gilroy, 2015). A closed Internet, which violates the terms set by Net Neutrality, would create an enclosed space where the ISP, the government, or any other powers that be can favor certain users and content providers over others. It also opens the door for propaganda and manipulation of media to run rampant throughout the Internet, the place often heralded as the "final frontier" of communications. With other mediums such as newspapers, textbooks and the media in general being manipulated by larger powers, it become in our best interests to ensure that the Internet stays free from regulation. It is big concern over whether the current framework is sufficient for the FCC to enable ISP take the necessary steps to ensure access to the Internet for content, services, and applications providers, as well as consumers (Angele A. Gilroy, 2015). Most experts do not agree that existing laws and policies are sufficient to deal with potential anti-competitive behavior and that additional regulations would have negative effects on the expansion and future development of the Internet (Angele A. Gilroy, 2015).

Angele A. Gilroy, Access to Broadband Networks: The Net Neutrality Debate, 2015, Congressional Research Service, 7-5700, www.crs.gov.

Who is an Attacker on Network Neutrality

During the next decade, there were many conflicts between the interests of broadband providers and the public's interest in competitive innovation environment on the open internet (<http://dx.doi.org/10.2139/ssrn.388863>). In the case of the 2014 FCC ruling, telecom companies and ISPs wanted to gain more money by carving up states in the US like gang territories, avoiding each other's regions in an effort to reduce competition and raise prices for the same amount of Internet

access people had been used to before. Then, by promising "fast lanes" and "hyper-speed lanes", telecom companies used their exclusive applications such as Amazon Prime Streaming or HBO NOW from companies to offered to pay large sums of money to force users into abandoning applications they had been used to and revert to their own, exclusive services. These practices, no matter what justifications ISPs may provide, seem very selfish and monetary, restricting the access of media and denying people of their Net Neutrality rights. If it wasn't for the help of media outlets and none-profit protest groups, rich companies would have had their way with what was presented to the people, doing it all for the money. Although the broadband industry such as ISPs is a competitive industry marked by dynamic changes and quickly evolving technology, they Aim To Dominate broadband Market (William *et al.*).

More being stronger dominance in the broadband service industry, it could soon pose serious threats to Net Neutrality (William *et al.*). Tim Wu, Network Neutrality, Broadband Discrimination, Journal of Telecommunications and High Technology Law, Vol. 2, p. 141, 2003, <http://dx.doi.org/10.2139/ssrn.388863> (William *et al.*) WILLIAM G. LAXTON, JTHE END OF NET NEUTRALITY, 2006, DUKE LAW & TECHNOLOGY REVIEW No. 15.

What is the Real Goal of Network Neutrality

The first looks at how profit-motivated decisions by the ISPs work against customers' preferences for fast Internet speeds at low prices; it also predicted the rise of paid peering, which plays a central role in today's net neutrality debate (<http://www.cs.columbia.edu/2014/net-neutrality/>). Understanding the economics of the Internet is crucial to understanding how best to maintain a free and open Internet—the stated goal of net neutrality (<http://www.cs.columbia.edu/2014/net-neutrality/>). Internet economics have changed considerably in recent years with the rise of behemoth for-profit content providers such as Facebook, Google, Amazon, and Netflix. At the same time, The ISPs themselves were changing and becoming more specialized (<http://www.cs.columbia.edu/2014/net-neutrality/>). Each ISP adopts its pricing policies to maximize profit, and these pricing policies play a role in how ISPs cooperate with one another, or don't cooperate. Profit-seeking and cost-reduction objectives often induce selfish behaviors in routing. Paid-peering : the practice in which ISPs charge those providers a premium for a direct interconnection with their networks is one ISP strategy is charged higher prices by creating a premium class of service with faster speeds to gain profits (<http://www.cs.columbia.edu/2014/net-neutrality/>). Creating Paid-peering is currently prohibited by network neutrality. The ISPs that provide decent-speed service, for all intents and purposes are monopolies (<http://www.cs.columbia.edu/2014/net-neutrality/>). Content providers like Netflix are in a much weaker position than the eyeball ISPs with power positions. The monopolistic power of the eyeball ISPs may soon be made stronger.

Network Neutrality is supported by ensuring freedom of access to anyone through Denying the monopolistic power of the eyeball ISPs. (<http://www.cs.columbia.edu/2014/net-neutrality/>) Vishal Misra, Net neutrality is all good and fine; the real problem is elsewhere, the Department of Computer Science at Columbia University, 2015, url: <http://www.cs.columbia.edu/2014/net-neutrality/>

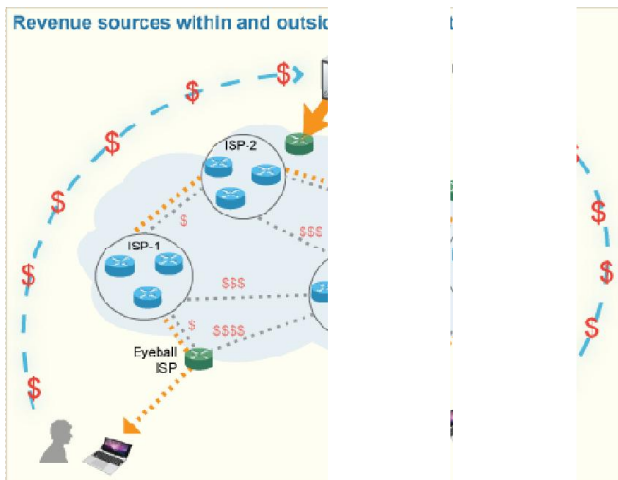


Figure 1. The Internet is operated by thousands of interconnected ISPs Cited from : reference 5

Which are violations of Network Neutrality

Open Internet Order by FCC establish rules to govern the network management practices of broadband Internet access providers, and intend to maintain network neutrality by establishing three rules covering transparency, no blocking, and no unreasonable discrimination (Angele A. Gilroy, 2015). The FCC's 2010 Open Internet rules protect consumers no matter how they access the Internet, whether on a desktop computer or a mobile device (Angele A. Gilroy, 2015). The first three rules ban practices that are known to harm the Open Internet are as below, (1) No Blocking: broadband providers may not block access to legal content, applications, services, or non-harmful devices. (2) No Throttling: broadband providers may not impair or degrade lawful Internet traffic on the basis of content, applications, services, or non-harmful devices. (3) No Paid Prioritization: broadband providers may not favor some lawful Internet traffic over other lawful traffic in exchange for consideration of any kind—in other words, no “fast lanes.” This rule also bans ISPs from prioritizing content and services of their affiliates [web site www.fcc.gov]. Fixed broadband providers could not engage in “unreasonable discrimination” in transmitting network traffic over a consumer’s broadband Internet access service (subject to network management). Consumers could be charged based on usage, but edge providers probably could not be charged for priority service on the public Internet (<http://blogs.lse.ac.uk/usappblog/2014/01/17/net-neutrality-ruling/>).

The basic premise of “net neutrality” is that all traffic on the Internet should be treated the same (<http://www.cs.columbia.edu/2014/net-neutrality/>). The FCC always has authority that would justify its order to compel broadband providers to adhere to open network management practices (<http://www.cs.columbia.edu/2014/net-neutrality/>). The anti-discrimination obligation imposed on fixed broadband providers is required broadband providers to serve all edge providers without “unreasonable discrimination,” this rule by its very terms compels those providers to hold themselves out “to serve the public indiscriminately (<http://www.cs.columbia.edu/2014/net-neutrality/>). No one has been clear on what “reasonable network management” entails and net neutrality advocates feared it was a huge loophole in the Open Internet Order (<http://blogs.lse.ac.uk/usappblog/2014/01/17/net-neutrality-ruling/>) [Barbara van Schewick, 2015]. But, It should be interpreted that network management means

such a narrow category of activity, limited to preventing harm to the network. (<http://blogs.lse.ac.uk/usappblog/2014/01/17/net-neutrality-ruling/>) Ellen Goodman, This week’s ruling on net neutrality may lead to fundamental changes to the internet as we know it, url: <http://blogs.lse.ac.uk/usappblog/2014/01/17/net-neutrality-ruling/>

Why Zero Rating poison

The success of the Internet until recently has been based on openness and non-discrimination, no regulation. Recently, the abolition of net neutrality such as Zero-Rating by ISPs would radically change pricing on the Internet [Charles M. Davidson, 2010]. These changes are likely to hurt consumers and diminish innovative activities in complementary sectors such as computer applications and content dissemination, and to raise a variety of significant anti-competitive concerns. Zero-rating with a strong discriminatory effect violates network neutrality, It would be banned harmful price discrimination practices such as zero-rating from point in the net neutrality. Zero-rating, the practice of not counting the traffic generated by ISPs’ own or their partners’ services against the end-users’ monthly volume (gigabyte) caps, has spread rapidly in 2014 from the emerging markets to Europe and North America (Antonios Drossos, 2015; Barbara van Schewick, 2015). Zero-rated traffic is blunt anti-competitive price discrimination designed to favour mobile operators’ own or their partners’ services while placing competing internet services at a disadvantage (Antonios Drossos, 2015). Zero -Rating does' not mean perfect free, but free to selected applications within a class to the exclusion of others, even if there is no payment involved”, Above all, it is paid-for ISPs by edge providers. Net Neutrality is a principle which dictates that Internet data should be treated equally by service providers, Zero-rating allows mobile operators and Internet Service providers to “favor some applications over others and causes the same problems as technical forms of differential treatment,” like slowing down or blocking certain forms of data (Ariel Futter and Alison Gillwald , 2015). Zero-rating and other harmful forms of price discrimination are eating away the neutrality of the internet. Zero-rating in exchange for edge-provider payment harms the start-up innovation ecosystem and free speech, Application providers will have to recoup the costs of zero- rating (ex: through higher prices or more advertising on the site.), Users will ultimately pay the price.

NICHOLAS ECONOMIDE, Net Neutrality,” Non-Discrimination and Digital Distribution of Content Through the Internet, A JOURNAL OF LAW AND POLICY, Vol.4 No.2 : 209-233

(Antonios Drossos, 2015) Antonios Drossos, The real threat to the open Internet is zero-rated content, REWHEEL 2015, www.rewheel.fi (Ariel Futter and Alison Gillwald, 2015) Ariel Futter and Alison Gillwald , Zero-rated internet services: What is to be done ?, POLICY PAPER 1, 2015: BROADBAND 4 AFRICA (Antonios Drossos, 2015) Expansion on Network Neutrality Network neutrality rules protect the vision of the Internet as a space where all people have an equal opportunity to express themselves, organize politically, and connect with one another [<https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf>]. They foster a space where everyday people, independent musicians and filmmakers, educators, activists, non-profits, and faith groups can speak and be heard

online, creating an alternative to commercial mass media. Just as net neutrality rules don't allow ISPs to pick winners and losers among competing applications, they don't allow them to pick winners and losers among different kinds of speakers or different types of speech [<https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf>].

Nowadays, Google and Apple do dominate the smartphone market. Many other applications providers similarly offer service only to iPhone and Android users. This dynamic has created a two-tiered wireless broadband ecosystem, in which iPhone and Android users are able to access far more content and applications than customers using devices running other operating systems. In near future, App market neutrality comes closer to net neutrality for the start-up innovation. Barbara van Schewick, T-Mobile's Binge On Violates Key Net Neutrality Principles, 2016, url; [https:// cyberlaw.stanford.edu/ downloads/vanSchewick-2016-Binge-On-Report.pdf](https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf)

Conclusion

We seek comment on the current role of the Internet's openness in facilitating innovation, economic growth, free expression, civic engagement, competition, and broadband investment and deployment. Particularly, we seek comment on the role the open Internet rules have had in investment in the broadband marketplace—networks and edge providers alike. We are similarly interested in understanding the role that the open Internet may play in the promotion of competition or in identifying barriers to infrastructure investment that an open Internet may eliminate or lessen.

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