



NET NEUTRALITY: DEFIANCE FOR INDIA AND AN ENTITLEMENT FOR THE WORLD

Raman Solanki¹, Biny Pal Singh², Maneet Singh³

^{1,2,3} Guru Gobind Singh Indraprastha University, (India)

ABSTRACT

The ignorance of more than a century of economic history now threatens the competitive constitution of the Internet under the cover of “net neutrality.” Net neutrality is a saying that stands for the program that the Internet and physical means of access to it should be available to all on uniform and nondiscriminatory terms. We find that if the ethics of net neutrality are abandoned, the broadband service provider definitely stands to benefit from the arrangement, as a result of eradicating the desired access fees from the content providers. The content providers are therefore left worse off, mirroring the posture of the two sides. The collective welfare spectrum expands when compared to the baseline case under net neutrality when one content provider pays for preferential treatment (better bandwidth), but remains unchanged when both content providers pay. It is also found that the consideration for the broadband service provider to expand under net neutrality is unambiguously higher than under the no net neutrality scenario. This goes against the allegation of the broadband service providers that under net neutrality, they have bounded incentive to expand [1.]

Keywords: *Broadband Service Providers, Content Providers, Consumer Welfare, Net Neutrality, Economics of Net Neutrality*

I. INTRODUCTION

In simplest terms, net neutrality can be defined as the principle that all internet traffic must be treated equivalently. The supporters of net neutrality are of view that internet service providers should not have any power on restricting certain forms of internet traffic on their respective networks. Net neutrality is sometimes referred to as the "**First Amendment of the Internet.**" The —net neutrality, as it has emerged over the last five years, is a social, political and economic argument over the public information framework known as the Internet and the responsibilities of its private carriers, which concludes of telephone and cable companies and other Internet service providers (ISPs). In the early 2000s, questions surrounding the rights and responsibilities of Internet carriers to block or slowdown certain network attachments and control access to emergent applications or content providers led to a dispute further leading to a call to protect —network neutrality. The controversy raises familiar questions for students of travel or communications infrastructure: from hundreds of years, courts and governments have hassled over the duties that carriers or telephone companies are bound to the public by virtue of their necessity to economic and civil welfare [2].

II. ADVANTAGES AND DISADVANTAGES

There have been some pros. And cons of the Net Neutrality Depending on the side we consider:

2.1 Advantages

- The big telecom companies can provide the Path but don't have any authority to direct how the people should walk on them. They cannot distinguish between the different groups.
- Net neutrality secures innovation and if big giants like Google and Netflix could pay a handsome amount to get exceptionally special treatment, large spectrum of bandwidth, faster speeds, the new start-up firms would be at a downfall.
- On the contrary it will also affect freedom of speech. In absence of net neutrality, the big companies could give priority to TV networks from videos it owns and slow down the signals from its peers.
- Net neutrality supports competitive marketplace and provides chance of growth to every firm, from big giants to small start-ups to take part in it.

2.2 Disadvantages

- Times have shifted. Presently YouTube and Netflix clog the pipes with huge amounts of data. The users download large amount of software, music and movies illegally. The changes will put a restriction.
- The various giants like Google have introduced services that allow people to make calls for free on networks in which telecom companies have invested billions to build. Net neutrality can be injustice to these companies.
- Some prioritization or restriction is essential to support the best interest of consumers as a whole.

III. SOME SURVEYS

3.1. Public Awareness

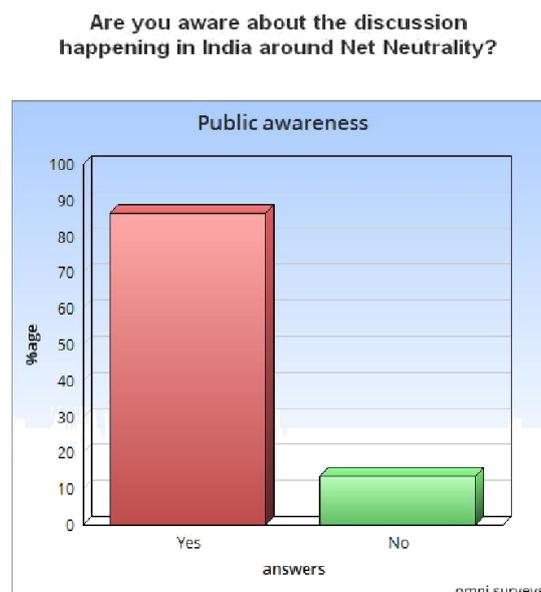


Figure 1- The Spectrum of the Above Survey is 4000 People Conducted in New Delhi.

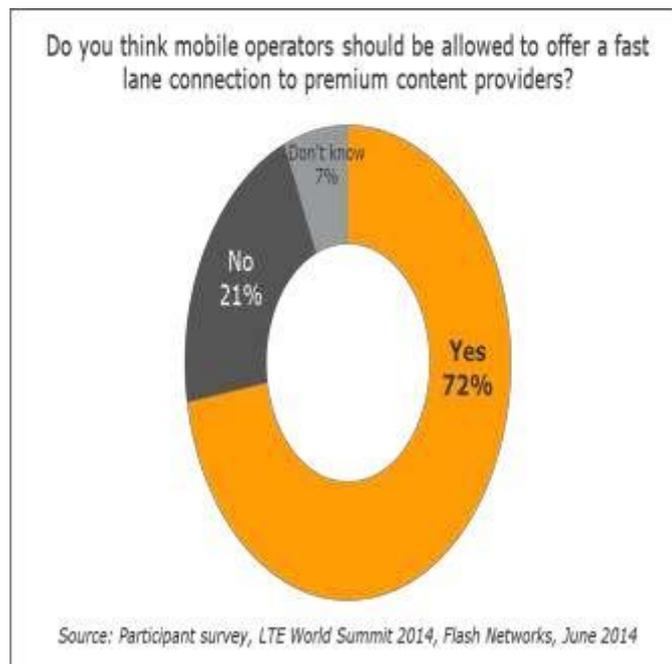


Figure 2- Public Opinion

IF YOUR ISP STARTED TO BLOCK OR CHARGE EXTRA TO USE HIGH-BANDWIDTH INTERNET SERVICES, HOW WOULD YOU RESPOND?

(Respondents with home Internet service)

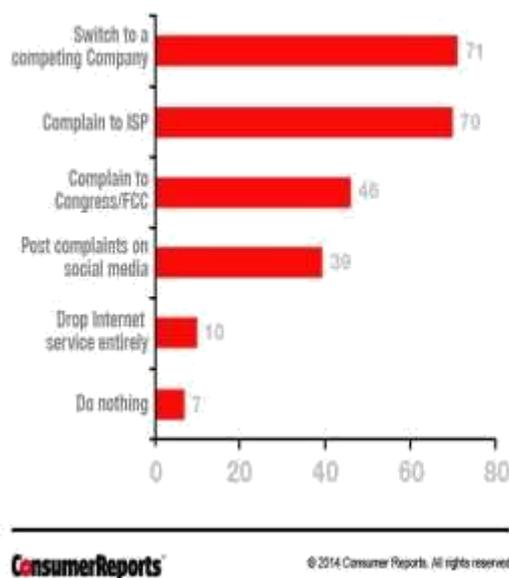


Figure 3- Public Opinion on the ISP Directing the Bandwidth According to Their Preference

IV. PRINCIPLES RELATED TO NET NEUTRALITY

4.1 End-to-end principle

The end-to-end principle is a principle of the network design, first laid out explicitly in the 1981 End-to-end arguments in system conception by Jerome H. Saltzer, David P. Reed, and David D. Clark. The principle expresses that, whenever accessible, communications protocol operations ought to be defined to develop at the end-points of a communications system, or as near as possible to the resource being controlled. In accordance with the end-to-end principle, protocol features are only justified in the lower layers of any system if they are a performance optimization; hence, TCP retransmission for reliability is still justified, but the efforts to improve Transfer Control Protocol (TCP) reliability should not start after peak performance has been achieved. They argued that reliable systems tend to require end-to-end processing to operate faultlessly, in addition to any processing in intermediate system. Jerome H. Saltzer, David P. Reed, and David D. Clark expressed out that most features in the lowest level of a communications system have costs for all higher-layer clients, even if the clients do not need these features, and are dispensable if the clients have to re-implement the features on an end-to-end basis. This vanguards to the model of a minimal dumb network with smart terminals, a completely different model from the precursory paradigm of the smart network with dumb terminals. Because the end-to-end principle is one of the central design principles of Internet, and because the practical means for implementing data discrimination violates end-to-end principle, principle often enters discussions about net neutrality. The end-to-end principle is closely related, and sometimes seen as a direct pre-cursor to the principle of net neutrality [3][4].

4.2 Traffic Shaping

The true delineation of Traffic Shaping is the control of computer network traffic in order to guarantee or optimize performance, better latency, and/or increment the usable bandwidth by delaying packets that meet a certain criteria. More concretely, traffic shaping is any action on a set of packets (often called a stream or a flow) which imposes additional delay on those packets such that they accommodate to some pre-determined constraint (a contract or traffic profile). Traffic shaping furnishes a means to control the volume of traffic being sent into any network in a specified period (bandwidth strangulate) or the maximal rate at which the traffic is shared (rate limiting) or more complex criteria such as generic cell rate [5][6].

4.3 Dumb Pipe

Since the early 1900s, the concept of dumb network made up of dumb pipes has been around. The idea of a dumb network is that the end-points of a network are generally where the intelligence lies; and that the network itself generally leaves the operation of communication and management to the end users. In 2013 the software company MetroTech Net, Inc. (MTN) expressed the term Dumb Wave which is the modern application of the Dumb Pipe concept to the ubiquitous wireless network. If wireless carriers do not provide value-added and unique services; they will be relegated to the dumb pipe category where they can't retain customers or charge a premium [7].

V. THE CONCLUSION

5.1 Would Favoring Some Content Improve the Internet Services?

We believe caching agreements with Internet service providers and services provided by distribution networks do not impinge on content provision because these services are available to all content providers and content providers that do not use these services are still accessible by consumers. Although these services do improve the performance of certain content providers' visa-versa for others, the services are only worthwhile for content providers with significant traffic and bandwidth demands; for new entrants with low bandwidth requirements, such services provide little benefit and are a nonissue.

5.2 End of Line

At its broadest, the net neutrality in INDIA and around the world is a reincarnation of an age-old debate about the duties of firms that supply infrastructure services essential to the economy, or—in the old common law phrase— firms —affected with the public interest. In the nineteenth century, trains and canals were the focus; in the twentieth century, it was the telephone and the electric systems; and in the twenty-first century, the Internet has seized center stage. That's Because The Internet has grown at an exceptional pace since its inception in the early 1990's, and this extraordinary growth is largely due to the freedoms and protections that net neutrality offers. Groundbreaking ideas and novel products like YouTube, Google, eBay and torrents have reached to where they are because of net neutrality. There are thousands of new online stores, start-ups, and simple ecommerce sites that hope to make big every day. Net neutrality promotes creative expression.

REFERENCES

- [1]. Tim Wu (2003). "Network Neutrality, Broadband Discrimination" (PDF). Journal on telecom and high tech law. Retrieved 23 Apr 2014.
- [2]. Krämer, J; Wiewiorra, L. & Weinhardt,C. (2013): "Net Neutrality: A progress report". Telecommunications Policy 37(9), 794–813.
- [3]. "Net Neutrality: This is serious. *timbl's blog*. Retrieved 26 December 2008.
- [4]. Staff. "A Guide to Net Neutrality for Google Users". Google Archived from the original on 1 September 2008. Retrieved 7 December 2008.
- [5]. Peter Svensson (19 October 2007). "Comcast Blocks some Subscriber Internet Traffic, AP Testing shows". Associated Press. Retrieved 25 October 2009.
- [6]. Bauer, Johannes; Obar, Jonathan A. (2014). "Reconciling political and economic goals in the net neutrality debate". *Information Policy* 30 (1): 1–19.
- [7]. Honan, Matthew (12 February 2008). "Inside Net Neutrality: Is your ISP filtering content?". *MacWorld*. Retrieved 26 December 2008.
- [8]. Wu, Tim "Network Neutrality FAQ". Retrieved 26 December 2008.
- [9]. Hagai Bar-El (19 Aug 2014). "Protecting Network Neutrality: Both Important and Hard". Retrieved 19 Aug 2014.

- [10]. Mathew Ingram (23 Mar 2012). "Open vs. closed: What kind of internet do we want?". GigaOm. Retrieved 8 Jun 2014.
- [11]. "About the Open Internet". European Commission. Retrieved 23 Apr 2014.
- [12]. Alexis C. Madrigal and Adrienne LaFrance (25 Apr 2014). "Net Neutrality: A Guide to (and History of) a Contested Idea". The Atlantic. Retrieved 5 Jun 2014. This idea of net neutrality...[Lawrence Lessig] used to call the principle e2e, for end to end
- [13]. IETF RFC 2475 "An Architecture for Differentiated Services" section 2.3.3.3 – definition of "Shaper"