



ISSUE BRIEF

No. 46

January 2015

Net Neutrality – Saving the Internet



Surya Kiran Sharma is a Research Assistant at CLAWS and he is working on cyber security and cyber warfare. Views expressed are personal.

“Net neutrality has been built into the fabric of the Internet since its creation, but it is also a principle that we cannot take for granted. We cannot allow Internet Service Providers (ISPs) to restrict the best access or to pick winners and losers in the online marketplace for services and ideas. That is why today, I am asking the Federal Communications Commission (FCC) to answer the call of almost 4 million public comments, and implement the strongest possible rules to protect net neutrality.”¹

— Barack Obama, President,
The United States of America,
November 10, 2014

Using a strong-worded and direct message to the FCC, President Obama voiced his support for the most important yet underrated concept to shape the Internet: net neutrality. The issue touched upon by President Obama is gathering steam only now but it has been present ever since the Internet was born. Few people realised the commercial potential of the Internet till companies started making money from consumers by feeding them content online. As governments struggle

Key Points

1. Net Neutrality—the principle of treating all content on the Internet equally without discrimination — has been challenged by the Internet Service Providers (ISPs).
2. A majority of Internet Service Providers being the telecommunication operators, demand a share of the revenue generated by online content in lieu of the web-based companies using their infrastructure.
3. ISPs charging the content providers could pave the way for a two-tier Internet comprising a ‘fast-lane’ and a ‘slow-lane’, depending on the access speed and charge.
4. Chile, Netherlands and Brazil provide legal protection to net neutrality. The USA has tried to enforce rules but telecommunication companies have successfully opposed them. After President Barack Obama publicly backed net neutrality, the Federal Communications Commission (FCC) is working on a compromise with the ISPs.
5. India has experienced net neutrality violations by the telecommunication companies but lack of user knowledge and regulation has pushed the issue under the carpet. The need of the hour is to spell out concrete rules for effective regulation and protection of the Internet.

The Centre for Land Warfare Studies (CLAWS), New Delhi, is an autonomous think tank dealing with national security and conceptual aspects of land warfare, including conventional and sub-conventional conflict and terrorism. CLAWS conducts research that is futuristic in outlook and policy-oriented in approach.

Net Neutrality...

to frame rules for preserving net neutrality, the ISPs, a majority of who are telecommunication companies, look for a greater say in how data is shared over the Internet and desire a share of the revenue generated. The service providers are the gatekeepers on the highway that is the Internet and desire their toll tax. Should these service providers get what they want, the Internet would be divided into a two-tier network comprising a 'fast-lane' and a 'slow-lane', with some data favoured over others and available at a higher cost for a fast data speed. This discrimination violates the concept of net neutrality, which has been the backbone of the Internet.

Net Neutrality

The term was coined by Columbia University media law professor Tim Wu in 2003 and the concept requires all data packets on the Internet to be treated equally by the ISPs and no discrimination to be made on the basis of content, origin, source or destination of the data. ISPs cannot discriminate between the data that flows through their networks nor can they impose restrictions or limitations on access to this data. Net neutrality preaches the neutral access of the Internet and to achieve this:

- All websites must be treated equally.
- There should be the same data transfer speed for all websites at the ISP level and no ISP should control the traffic that passes through its server gateways. This requires the ISP to ensure that any user can access Facebook at the same data rate as YouTube or any other website.
- Equal data cost for access to each website.

This neutral and non-discriminatory access has been the cornerstone on which the Internet was built and which allowed it to evolve into an egalitarian platform for ideas and opinions. The

idea of the Open Internet spells out the paradigm of non-differential availability of all Internet resources and the means to operate them for all individuals, companies and organisations. It includes concepts like net neutrality, open standards, lack of censorship and low barriers to entry. The philosophy behind the Open Internet has helped the Internet grow into a free and open forum that promotes innovation and competition.

Arguments For

The proponents for net neutrality point out that the Internet, since its inception, has been based on the principle of "end-to-end" which intends to give control over the information flowing through the network to the entities at the two ends of the connection transmitting and receiving the information rather than the network provider. Web users are able to connect to, and access, websites or services freely, with the ISP having no control over the content. This gives freedom to the users to share and express views on a truly global network and act as a powerful tool for the social and economic good.

More importantly, an Open Internet with neutral access to its resources has resulted in a level playing field. The creation of companies like Google and Facebook would not have been possible without the equitable availability of Internet resources. Any web user looking to start a website or provide a service over the Internet need not have much financial and logistic resources but an idea that can be disseminated over the Internet to other users. Allowing open access to the Internet has helped sustain competition and innovation in the industry with startups able to compete with the big corporations for users and revenue, and even supplant them.

Net neutrality ensures that the Internet remains open to all individuals and companies around the world, fostering democratic communication.

During the period January-March 2011, the hash tag “Egypt” had 1.4 million mentions on Twitter as social media played a crucial role in helping the people organise protests and to spread awareness about the events in the Middle East.²

Arguments Against

The principal complaint against net neutrality is that the ISPs, a majority of which are telecom providers and cable companies, are being by-passed by the Internet content providers for the revenue despite using their network and infrastructure. The investment made by the telecommunication companies to build their networks, to acquire spectrums and to improve infrastructure to synchronise with the improvements in technology is not being recouped. Bharti Airtel, which leads the telecom companies providing Internet service through wireless phones with a market share of over 27 percent, reported consolidated mobile data revenues at INR 2,204 crore for the July 2013–July 2014 period³ while BSNL, the leading service provider in India, at 60 percent of broadband subscribers, has earned revenues of INR 28,000 crore in 2013-14.⁴ Compare this to the INR 6,000 crore (USD 1 billion) that Google is expected to pocket in revenue from India in the year upto March 2015.⁵ The ISPs want a share of the income generated from online content for building the highways that the service providers use.

Another issue raised by the opponents of net neutrality is of differential bandwidth used by various content providers. Websites like YouTube that stream video content use much more network bandwidth than smaller services like messaging applications. YouTube streams as much data in three months as the original content on the world’s radio, cable and broadcast television channels in one year – 75 petabytes or 10th to the 15th power.⁶ The service providers argue that they deserve part of the revenue earned by the content provider for

building and upgrading the network infrastructure for increased bandwidth.

Global View

Chile became the first country to approve a law promoting net neutrality that seeks to forbid the service provider from discriminating content over the Internet. The Netherlands adopted net neutrality legislation in 2011 to ensure equal treatment of online content, thereby becoming the first European country to do so.⁷ The European Union, taking a cue from the Netherlands, approved legislation in April 2014 banning creation of a tiered form of Internet and asking service providers to treat all content equally, without discrimination.⁸ Brazil joined the club in 2014 by providing a legal framework for protecting net neutrality through a legislation that aims at guaranteeing equal access to the Internet and protects the privacy of its users. The law bars telecom companies from differential charging for different content while subjecting content providers like Google and Facebook to Brazilian laws and courts in cases involving information about Brazilians, even if the data is stored on servers abroad.⁹ A dynamic coalition of 35 civil society organisations from 19 countries started a website, <http://www.thisisnetneutrality.org> in November 2014 to bring more focus on, and attention to, the issue of net neutrality.¹⁰

While the aforementioned countries provide a legal backing to net neutrality, there are others that are opening the gates for the telecom companies to impose their will. The Federal Anti-Monopoly Service (FAS) in Russia, equivalent to the FCC in the USA, has hinted towards allowing ISPs to charge extra from content providers who desire prioritised service delivery.¹¹ Despite the absence of legislation, ISPs follow net neutrality by treating all traffic equally based on the bandwidth required. However, content is blocked in Russia on political grounds, which clearly violates the concept of an Open Internet.

The FAS is looking at the FCC to show the path forward on this issue.

The situation in China is even more grim as the country's Golden Shield Project, more commonly known as the Great Firewall of China, has been active since 2003 for surveillance and censorship of the Internet. The latest blocking of Gmail, Google's mail service, in December 2014 is another step towards tightening control over the Internet by the Chinese government. YouTube, Twitter and Facebook are already blocked in the country as the Golden Shield allows Beijing to restrict content that it deems provocative or inappropriate.¹²

American Experience

The Communications Act of 1934 spells out the policy of the United States of America regarding the Internet as it seeks "to promote the continued development of the Internet"¹³ and "to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation."¹⁴ The FCC was created under the aegis of the Communications Act of 1934 to look into the regulation of the Internet, amongst other media of communication.

In 2005, the FCC came out with the four freedoms of the Internet in the form of guiding principles, namely¹⁵:

- Freedom to Access Content
- Freedom to Use Applications
- Freedom to Attach Personal Devices
- Freedom to Obtain Service Plan Information

The FCC was forced to codify these principles as rules in 2008 after finding Comcast, the largest broadcasting and cable company in the

country, slowing down traffic from BitTorrent, a peer-to-peer file sharing protocol.¹⁶ However, a Federal Appeals Court overturned the decision by questioning the FCC's authority to regulate Comcast's network management practices.¹⁷ Subsequent to the ruling, the FCC came out with the Open Internet Rules in 2010 as a means to preserve the openness of the Internet. The rules put forward by the FCC were:¹⁸

- **Transparency** : Service providers must disclose the network management practices, performance characteristics, and terms and conditions of their broadband services.
- **No blocking** : Fixed broadband providers may not block lawful content, applications, services, or non-harmful devices; mobile broadband providers may not block lawful websites, or block applications that compete with their voice or video telephony services.
- **No unreasonable discrimination** : Fixed broadband providers may not unreasonably discriminate in transmitting lawful network traffic.
- **Reasonable network management** : Reasonable practices to be employed by the service provider to ensure effective network management.

Criticised for being open-ended, the above rules left the creation of a tiered Internet system comprising a 'fast lane' service possible. Challenged in a US Court of Appeals by Verizon, the rules were struck down in 2014 after the mandate of the FCC to impose the net neutrality rules on service providers was found missing despite the court acknowledging the FCC's authority to regulate broadband access.¹⁹

Taking advantage of the uncertainty over net neutrality rules, Comcast slowed down its customers' connections to Netflix, an on-demand

Internet streaming media, forcing the company to pay Comcast to connect directly to the broadband network resulting in a pipeline system of access.²⁰ The FCC has decided to open the debate over net neutrality with Chairman Tom Wheeler planning to propose new rules that give the ISPs the freedom to create 'fast lanes' by entering into negotiations with certain content providers while maintaining a 'baseline level of service' to the subscribers.²¹ However, the new proposals have come under severe criticism, with US President Barack Obama voicing his support for heavy regulation to ensure a free and open Internet. Obama said, "We cannot allow Internet service providers to restrict the best access or to pick winners and losers in the online marketplace for services and ideas."²² As the debate continues, the FCC is likely to announce new net neutrality rules in early 2015²³ amid concerns of overarching effects of American regulations on the Internet in countries around the world.²⁴

Indian Context

The debate over net neutrality rules in India started in 2006 when the Telecom Regulatory Authority of India (TRAI) sent out a consultation paper to various telecom companies and other stakeholders seeking recommendations on Internet services.²⁵ No formal rules have been notified by TRAI about the regulation of Internet content and net neutrality, while the absence of a legal framework leaves the implementation of the principle open to the whims of the service provider. The first demand for revenue sharing between telecom companies and content providers came from Bharti Airtel Chairman Sunil Mittal, who talked about imposing an Internet tax analogous to the tax on the highways. Speaking at the Mobile World Congress in Barcelona, Spain, in February 2012, Mittal said, "If we have to build the highways, there has got to be a tax on highways. You cannot have automobiles running on these highways which are paying nothing. We need to open up a debate for the right model."²⁶

Over the years, Indian service providers have flouted net neutrality rules but the absence of efficient regulations and lack of consumer knowledge has helped them push the issue under the carpet.

- In 2010, MTS MBlaze allowed its users in Jharkhand free Internet browsing of certain websites. Similarly, Tata Docomo offered free access to websites like Facebook and Twitter.²⁷
- Bharti Airtel and BSNL throttled or intentionally slowed the traffic on BitTorrent to keep the traffic flowing on their own networks. In the first quarter of 2012, Airtel blocked up to 33 percent of BitTorrent traffic.²⁸
- Airtel in 2013 partnered with Wikimedia Foundation to offer free access to Wikipedia to its subscribers. The move was accompanied by Reliance Communications giving unlimited live streaming to its users of the ICC Champions Trophy on the Star Sports mobile website. The same year saw Airtel partner with Google to provide free access to Google services.²⁹
- In the most recent case of net neutrality violation, Airtel in December 2014 excluded Voice over Internet Protocol (VoIP) from its data packs and started charging for all incoming and outgoing VoIP calls through applications like Skype and Viber.³⁰ However, the telecom operator decided to rollback its plans just days later.³¹

This latest move by Airtel is in clear violation of a TRAI proposal to not subject Over-The-Top (OTT) companies like WhatsApp and Skype to regulation. Indian telecom operators approached TRAI earlier in 2014, looking to bring Internet-based messaging and voice applications like WhatsApp and Skype under some jurisdiction³² but the regulator has instead circulated a consultation paper seeking recommendations on

regulating similar content providers while looking into the falling revenues of telecom companies. It is estimated that Indian telecom operators stand to lose more than USD 3 billion in SMS revenues due to the emergence of messaging and texting applications.³³ TRAI is also examining Airtel's deal with Facebook and WhatsApp after the operator gave access to these companies at fixed but nominal amounts as the regulator determines whether this amounts to equal access to other content providers on the network.³⁴

To make matters complex, the Department of Telecommunications (DoT) has sought further clarification on delinking the licences of networks from delivery of services by way of Virtual Network Operators (VNOs). A VNO is a service provider who does not own the underlying network(s) but relies on the network and support of the infrastructure providers and telecommunications operators for providing telecom services to end users/customers. The notable point to come out of the pre-consultation paper is whether the OTT operators would need to apply for licences for providing the services upon implementation of the proposed delinking model.³⁵ This attains greater significance when

taking into consideration the inability of smaller OTT companies to compete with their more financially endowed counterparts while keeping in view equal opportunity to all as enshrined in the net neutrality principle. Facebook was inducted in the Cellular Operators Association of India (COAI) as an associate member in August 2014; now the American major looks to strengthen its hold in the Indian market.³⁶

Future Course of Action

As service providers continue to lobby with governments for granting them greater share in the revenue earned by the content providers, it remains crucial that all future decisions be made without compromising the free and open nature of the Internet. Net neutrality continues to divide opinion around the world but it is the one single most important concept that has helped the Internet evolve into the medium it is today. India needs a comprehensive and lucid regulatory and legal framework to protect net neutrality as the telecom operators prey on the users' lack of knowledge on the subject. India can only look towards Chile, Netherlands and Brazil for inspiration.

Notes

1. "Obama Backs Net Neutrality Plan", Al Jazeera, November 10, 2014, <http://www.aljazeera.com/news/americas/2014/11/obama-backs-net-neutrality-plan-2014111102829392764.html>. Accessed on December 31, 2014.
2. "Facebook and Twitter Key to Arab Spring Uprisings: Report", *The National*, June 6, 2011, <http://www.thenational.ae/news/uae-news/facebook-and-twitter-key-to-arab-spring-uprisings-report>. Accessed on December 27, 2014.
3. "Airtel : 39.32 Million Mobile Internet Subscribers, Mobile Data Revenue Grows By 73.9%", NextBigWhat, July 30, 2014, <http://www.nextbigwhat.com/airtel-mobile-internet-data-297/>. Accessed on December 28, 2014.
4. "BSNL Revenue Stands at `28,000 Crore", *The Pioneer*, November 20, 2014, <http://www.dailypioneer.com/state-editions/dehradun/bsnl-revenue-stands-at-28000-crore.html>. Accessed on December 28, 2014.
5. "Google on its Way to Surpass \$1 Billion in Revenue from India in FY15", *The Economic Times*, October 9, 2014, <http://economictimes.indiatimes.com/tech/internet/google-on-its-way-to-surpass-1-billion-in-revenue-from-india-in-fy15/articleshow/44731171.cms>. Accessed on December 28, 2014.
6. "The Coming Exaflood", Discovery Institute, January 20, 2007, <http://www.discovery.org/a/3869>. Accessed on December 28, 2014.

7. "Netherlands Makes Net Neutrality a Law", BBC, June 23, 2011, <http://www.bbc.com/news/technology-13886440>. Accessed on December 28, 2014.
8. "EU Votes to Protect Google and Netflix From Telecoms Charges", *The Telegraph*, April 3, 2014, <http://www.telegraph.co.uk/finance/newsbysector/mediatechnologyandtelecoms/telecoms/10742251/EU-votes-to-protect-Google-and-Netflix-from-telecoms-charges.html>. Accessed on December 29, 2014.
9. "Net Neutrality Wins in Brazil's Internet Constitution", Al Jazeera America, March 26, 2014, <http://america.aljazeera.com/articles/2014/3/26/brazil-internet-constitution.html>. Accessed on December 29, 2014.
10. "Global Coalition Launches International Net Neutrality Website", ThisIsNetNeutrality.Org, November 25, 2014, https://s3.amazonaws.com/access.3cdn.net/6fe13024e81dc2d55c_3gm6iir98.pdf. Accessed on December 31, 2014.
11. "Building an Internet Fast Lane in Russia Could Be a Great Way to Stifle Independent Media", Global Voices Online, October 17, 2014, <http://globalvoicesonline.org/2014/10/17/building-an-internet-fast-lane-in-russia-could-be-a-great-way-to-stifle-independent-media/>. Accessed on December 31, 2014.
12. "The Great Firewall of China is Nearly Complete", CNN Money, December 30, 2014, <http://money.cnn.com/2014/12/30/technology/china-internet-firewall-google/>. Accessed on December 31, 2014.
13. "47 U.S. Code § 230 (b)(1)", <http://www.law.cornell.edu/uscode/text/47/230>. Accessed on December 28, 2014.
14. "47 U.S. Code § 230 (b)(2)", <http://www.law.cornell.edu/uscode/text/47/230>. Accessed on December 28, 2014.
15. "The Four 'Net Freedoms in Chairman Powell's Own Words", ISEN.blog, August 18, 2005, <http://isen.com/blog/2005/08/four-net-freedoms-in-chairman-powells.html>. Accessed Google cached copy on December 28, 2014.
16. "FCC Rules Against Comcast for BitTorrent Blocking", Eletronc Frontier Foundation, August 3, 2008, <https://www.eff.org/deeplinks/2008/08/fcc-rules-against-comcast-bit-torrent-blocking>. Accessed on December 28, 2014.
17. "U.S. Court Curbs F.C.C. Authority on Web Traffic", *The New York Times*, April 6, 2010, http://www.nytimes.com/2010/04/07/technology/07net.html?pagewanted=all&_r=0. Accessed on December 28, 2014.
18. "Open Internet Rules, FCC", December 21, 2010, https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-201A1_Rcd.pdf, Accessed on December 28, 2010.
19. "U.S. Appeals Court Strikes Down FCC Net Neutrality Rules", Reuters, January 14, 2014, <http://www.reuters.com/article/2014/01/14/us-usa-court-netneutrality-idUSBREA0D11420140114>. Accessed on December 28, 2014.
20. "Slow Comcast Speeds were Costing Netflix Customers", CNN Money, August 29, 2014, <http://money.cnn.com/2014/08/29/technology/netflix-comcast/>. Accessed on December 28, 2014.
21. "Regulators Pave way for Internet 'Fast Lane' with Net Neutrality Rules", CNN Money, April 23, 2014, <http://money.cnn.com/2014/04/23/technology/open-internet/index.html?iid=EL>. Accessed on December 28, 2014.
22. "Obama Puts Foot Down: No Internet Fast Lanes", CNN Money, November 10, 2014, <http://money.cnn.com/2014/11/10/technology/obama-internet-regulation/>. Accessed on December 28, 2014.
23. "Net Neutrality Decision to Be Made in Early 2015", *Tech Times*, December 28, 2014, <http://www.techtimes.com/articles/23210/20141228/net-neutrality-decision-made-early-2015.htm>. Accessed on December 28, 2014.
24. "US Net Neutrality Campaign Enables Foreign Governments' Internet Control", *The Hill*, December 22, 2014, <http://thehill.com/blogs/pundits-blog/technology/227827-us-net-neutrality-campaign-enables-foreign-governments-internet>. Accessed on December 28, 2014.
25. Consultation Paper on "Review of Internet Service", TRAI, December 27, 2006, <http://www.trai.gov.in/WriteReaddata/ConsultationPaper/Document/consultation27dec06.pdf>, Accessed Google cached copy on December 29, 2014 at <http://webcache.googleusercontent.com/search?q=cache:bnL3S5nxunwJ:www.trai.gov.in/WriteReaddata/ConsultationPaper/Document/consultation27dec06.pdf+&cd=1&hl=en&ct=clnk&gl=in>
26. "Mobile Operators: Stop Picking on us, or Else," CNET, 28 February 2012, <http://www.cnet.com/news/mobile-operators-stop-picking-on-us-or-else/>. Accessed on December 24, 2014.

...Saving the Internet

27. "MTS MBlaze, Tata Docomo and the Neutrality of Wireless Internet Access in India", Medianama, April 7, 2010, <http://www.medianama.com/2010/04/223-mts-mblaze-net-neutrality-mobile-internet/>. Accessed on December 29, 2014.
28. "ISPs Slam Brakes on Bit Torrent Speeds", *The Hindu*, August 10, 2012, <http://www.thehindu.com/sci-tech/technology/internet/isps-slam-brakes-on-bittorrent-speeds/article3751310.ece>. Accessed on December 29, 2014.
29. "Wikipedia Partners Aircel To Offer Free Access", Medianama, July 26, 2013, <http://www.medianama.com/2013/07/223-wikipedia-partners-aircel-to-offer-free-access/>. Accessed on December 29, 2014.
30. "Exclusive: Airtel Starts Charging for VoIP Data on 2G and 3G, Calls on Viber and Skype not to be Covered by Data Packs, Telecom Talk, December 26, 2014, <http://telecomtalk.info/airtel-starts-charging-for-voip-data-viber-skype-charges/128118/>. Accessed on December 29, 2014.
31. "Airtel Drops Plans to Charge Extra for Internet Voice Calls", *The Hindu*, December 30, 2014, <http://www.thehindu.com/business/Industry/airtel-will-not-charge-extra-for-internet-voice-calls-via-skype-viber/article6735030.ece>. Accessed on December 30, 2014.
32. "Instant Messaging App Firms Should be Regulated: Airtel CEO", *The Hindu*, February 27, 2014, <http://www.thehindu.com/business/Industry/instant-messaging-app-firms-should-be-regulated-airtel-ceo/article5732465.ece>. Accessed on December 29, 2014.
33. "Trai Resists as Telcos Seek Regulation of WhatsApp, Skype", *Financial Express*, August 18, 2014, <http://archive.financialexpress.com/news/trai-resists-as-telcos-seek-regulation-of-whatsapp-skype/1280243>. Accessed on December 29, 2014.
34. "Trai Examining Bharti Airtel's Special Deals on Facebook and WhatsApp", *The Economic Times*, November 25, 2014, http://articles.economictimes.indiatimes.com/2014-11-25/news/56455517_1_net-neutrality-mobile-data-services-uninor. Accessed on December 29, 2014.
35. "Pre-Consultation Paper on 'Delinking of License for Networks from Delivery of Service by way of Virtual Network Operators' (Pt. 28), TRAI, September 3, 2014. Accessed Google cached copy on December 29, 2014 at <http://webcache.googleusercontent.com/search?q=cache:9BvOqyA4mmoJ:www.trai.gov.in/WriteReaddata/ConsultationPaper/Document/final-Pre%2520consultation%2520paper%2520on%2520Delinking%2520of%2520licence%252003.09.2014.pdf+&cd=1&hl=en&ct=clnk&gl=in>
36. "Facebook Joins COAI as an Associate Member", *The Hindu*, August 6, 2014, <http://www.thehindu.com/business/Industry/facebook-joins-coai-as-an-associate-member/article6287463.ece>. Accessed on December 29, 2014.

The contents of this Issue Brief are based on the analysis of material accessed from open sources and are the personal views of the author. It may not be quoted as representing the views or policy of the Government of India or Integrated Headquarters of MoD (Army).



CENTRE FOR LAND WARFARE STUDIES (CLAWS)

RPSO Complex, Parade Road, Delhi Cantt, New Delhi 110010

Tel.: +91-11-25691308, Fax: +91-11-25692347, Email: landwarfare@gmail.com

Website: www.claws.in