

Robert J Ravi
Advisor (QoS)
Telecom Regulatory Authority of India
Mahanagar Door Sanchar Bhawan
JL Nehru Marg, New Delhi—11002
India

Sir,

I thank you for the opportunity to respond to this pre-consultation paper on net neutrality. At the outset, I request that my email ID not be disclosed on the TRAI website.

Please find below my response to the questions posed in the paper.

Q1. What should be regarded as the core principles of net neutrality in the Indian context? What are the key issues that are required to be considered so that the principles of net neutrality are ensured?

The ideal core principles are as follow:

- a) Complete non-discrimination on TSP's part with regard to pricing, speed, or appearance¹ of web pages and services.
- b) Complete non-discrimination with regard to platform and application. This is already covered in the TRAI's Prohibition of Discriminatory Tariffs for Data Services, 2016.
- c) Complete non-discrimination with regard to **protocol**. This was not included in the Prohibition passed earlier this year. It leaves open for TSPs the ability to throttle or block VoIP, P2P, or other protocols that are detrimental to their business or contribute to network congestion.
- d) No compromise in the above principles in response to business interest of TSPs. The onus should be on the TSP to provide services that compete with those available on the internet.
- e) "Dumb pipes" are a must, i.e., the TSP must not shape traffic based on internet consumption patterns to the detriment of any service or website (traditional traffic management, which only wants equal QoS across websites/services should be allowed). Legal requirements of logging unencrypted data may be explored under existing laws.

The only acceptable exceptions to the above principles must be i) access exclusively to a billing website and payment gateway when the user has run out of their data plan, or when their internet connection's billing cycle ends, and ii) for enterprise connections built for a specific purpose using CEEN. The latter is already covered by the Prohibition mentioned earlier.

The key issue that must be considered is the **lack of comprehensive regulatory precedent for robust net neutrality**. Examples of this are mentioned below.

- In the US, although there are some net neutrality regulations, the American TSP T-Mobile maintains a scheme named "Binge-On", where subscribers can access services like Netflix, YouTube, and HBO in 480p video quality for free, whereas other internet traffic is metered regularly. The US lacks the regulatory instruments to stop this discriminatory practice.

¹ An example of violating appearance neutrality is modifying the contents of a page by changing the packets in transit, or adding new information. BSNL and MTNL, for example, insert ads into regular HTTP pages as a popup.

- In Japan, the Guideline for Packet Shaping gives ISPs the power to penalize or discriminate users who use a lot of data. This is a dangerous power to give ISPs. In India, the issue of network congestion by a minority of broadband users has been resolved with data caps, which won't be needed, hopefully, in the future as network infrastructure expands to accommodate all levels of usage.
- In Brazil, traffic shaping is allowed under "extreme circumstances" of technical requirement, which TSPs may themselves determine. This potentially allows ISPs to throttle websites, services, or protocols (specifically P2P).
- The European Union's regulations allow member states to permit zero-rating.

Therefore, India has the opportunity to be a **regulatory pioneer** by adopting comprehensive net neutrality laws that are forward-looking and fair.

Q2. What are the reasonable traffic management practices that may need to be followed by TSPs while providing Internet access services and in what manner could these be misused? Are there any other current or potential practices in India that may give rise to concerns about net neutrality?

Traditional traffic management practices that ensure equal quality of service for all websites, services, applications, platforms, and protocols must be the only type that is allowed. Any practice that artificially modifies the performance, speed, or appearance of the mentioned factors must not be allowed.

Around the world, large internet companies that account for a significant percentage of internet traffic are often burdened to work with ISPs to ensure fair quality of service for consumers. Google, for example, has Google Edge², a peering network that ISPs can use to connect directly with Google's data centres. Netflix, the world's largest internet TV network, also maintains an Open Connect program³ in which they give out free copies of their entire video catalogue to ISPs, so that the latter don't have to bear the cost of downloading video streams from Netflix's servers.

As video consumption grows in India, as mentioned in the consultation paper, it must be emphasized that internet providers, not internet companies, must bear the brunt of maintaining equal quality of service. Otherwise, it may become standard for large internet companies to resort to partnerships with ISPs to ensure adequate quality of service.

A current (undeclared) practice of violating net neutrality is practiced by Airtel. After a data plan runs out on a prepaid mobile connection, WhatsApp continues to work, even as the rest of the internet redirects to Airtel's billing page. This must be stopped.

Q3. What should be India's policy and/or regulatory approach in dealing with issues relating to net neutrality? Please comment with justifications.

Since a violation of net neutrality threatens the very foundations of the Internet, delicensing of an ISP must be the only regulatory response to repeat violators.

Due to the decentralized nature of ISPs, network administrators at various levels might use traffic management techniques that violate net neutrality. Having delicensing as retaliation for this will ensure organizational discipline at all levels to respect net neutrality.

² <https://peering.google.com/>

³ <https://openconnect.netflix.com/en/>

Q4. What precautions must be taken with respect to the activities of TSPs and content providers to ensure that national security interests are preserved? Please comment with justification.

While there needs to be a balance between individual privacy and national security, aside from obtaining legal warrants for specific connections under suspicion, there must be minimal state intervention. Since VPNs and messengers with end-to-end encryptions are widely available and continue to proliferate, a “blanket” of requirements to TSPs (such as logging websites visited by consumers) is both undesirable and unlikely to succeed.

As for content providers, existing laws and reporting systems exist to block access to websites.

Q5. What precautions must be taken with respect to the activities of TSPs and content providers to maintain customer privacy? Please comment with justification.

Dumb pipes must be maintained, with the exception of knowing which subscriber an IP address corresponds to.

Logging of internet activity must be avoided as far as possible, for reasons mentioned in the answer to the previous question.

Q6. What further issues should be considered for a comprehensive policy framework for defining the relationship between TSPs and OTT content providers?

It is not far-fetched to say that most calling and text communication will happen over the internet within the next decade. This transition is currently underway. As VoLTE is supported by an increasing number of handsets, it is important that net neutrality laws with regard to VoIP are forward-looking, and not concerned with the immediate business concerns of telecom companies.⁴

By yielding to these complaints, the Regulator might risk slowing down the penetration of internet and the evolution of network infrastructure. This is entirely undesirable, considering the hitherto slow evolution of ISPs’ quality of service. And seeing how the growth of the internet is inextricably linked to the growth of the economy, net neutrality laws must be robust. OTT services must therefore not be limited in any way to accommodate TSPs.

Thanking you,

Aroon Deep

⁴ A possible area of regulation, however, for VoIP, is when a VoIP device calls a traditional telephone over landline or wireless calling networks. This issue needs a consultation paper of its own.