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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 appearance of web pages and services.
- b) Complete non-discrimination with regard to platform and application, already covered in the TRAI's Prohibition of Discriminatory Tariffs for Data Services, 2016.
- c) Complete non-discrimination with regard to protocol. ISPs should be restricted from throttling or blocking protocols such as VoIP, P2P etc
- d) Separation of business interests on and off the internet. Non-internet based businesses/services should not impede upon internet based services. It should be the onus of the TSPs to compete with internet based services or products with products of similar offering instead of anti-trust practices or activities.
- e) "Dumb pipes" are a must, i.e., the TSP must not shape or discriminate upon the traffic basis of the information residing in the traffic itself. Thus any sort of discrimination on the basis of origin/destination, usage/frequency etc should be barred. Emergency based services could be a possible exception against this and have preferential treatment or for enterprise services built for a specific purpose only available in a CECN.

Lack of comprehensive regulatory precedent for robust net neutrality has already allowed TSPs across the world to violate Net Neutrality:

• In the US despite 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. Similarly Comcast offers Xfinity services for its users which is in direct competition with internet based companies such as Netflix but is treated exempt from data charges.

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 Edge: 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 program 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. Lack of such a regulatory framework will ensure that it will be impossible to create similar companies in India unless they too have sufficient capital to take on the burden of peering.

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.

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.

With the rise of End to End encryption, ISPs have limited ability to monitor or assess the data being transmitted through them apart from the origin or destination for the packet being sent across. However, in case a user has failed to enable End to End encryption, ISPs should not use packet inspection to modify the

behavior of the network or to log this information.

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,
Amit Ambasta