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Shri Asit Kadyan
Advisor (QoS)
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Mahanagar Doorsanchar Bhawan
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Dear Sir,

Subject: Cisco response to Consultation Paper on Traffic Management Practices (TMPs) and Multi-Stakeholder Body for Net Neutrality

At the outset, we would like to thank TRAI for undertaking consultation on Traffic Management Practices (TMPs) and Multi-Stakeholder Body for Net Neutrality. With landmark innovations in communications, including infrastructure and service delivery, it is essential to identify a framework for how internet traffic is managed, especially in the current state of the industry.

We at Cisco, welcome this opportunity and are providing inputs based on our experience as the world's largest manufacturer of networking equipment and a market leader in the provision of network management solutions and applications.

Please find enclosed our detailed submission on TRAI consultation paper. Look forward to your kind consideration of our inputs and opportunity to discuss further.

Thank You.

Best Regards,

A handwritten signature in blue ink, appearing to be "MK", with a horizontal line underneath.

Harish Krishnan



Response to TRAI Consultation Paper on Traffic Management Practices (TMPs) and Multi-Stakeholder Body for Net Neutrality

January 2, 2020

Cisco Systems, the world's largest manufacturer of networking equipment and a market leader in the provision of network management solutions and applications. Cisco has monitored and contributed to the discussions around this issue in many different jurisdictions and welcomes this opportunity to provide feedback to TRAI as it explores opportunities and options to create a robust mechanism on traffic management practices in India.

Our responses to the questions posed in the Consultation Paper issued on 2 February 2020 are provided below. As we elaborate further below, Cisco believes that given the evolution and differences of perspectives of regulators around the world, the major technological advances that will transform broadband networks' architecture, how the traffic is managed and the financial implications and current state of the industry, it may be worthwhile for TRAI to adopt a light-touch regulation mechanism with reliance on market forces to drive the competition and innovation.

Our specific responses are as below:

Q.1 What are the broad types of practices currently deployed by the Access Providers (APs) to manage traffic? Out of these practices, which ones can be considered as reasonable from perspective of Net Neutrality? Whether list of Traffic Management Practices (TMPs) can be prepared in advance or it would be required to update it from time to time? If later is yes, then what framework would be required to be established by Multi-Stakeholder Body to keep it up to date? Please suggest with justification.

- Keeping in mind the dynamic nature of technology and developments in network infrastructure, there are multiple types of traffic that require reasonable amounts of management. Some of the examples could include:
 - Routing of traffic through network techniques such as IP routing or packet differentiation are used to alleviate congestion, ameliorate capacity constraints and enable new services in a cost-effective way
 - Some applications and services will need high-speed download capacity that is not time sensitive. Others will use high bandwidth one-way streaming in which latency is a factor
 - Applications such as VoIP will not require high bandwidth but will be symmetric and need very low latency. Others, like Telepresence and other high definition real time two-way video, will require very high symmetric bandwidth, low latency, and no jitter
- In other words, different applications will require differing network requirements and, as a result, the optimal network will need to be adaptable to be 'fit for purpose'
- India could consider a general principle rule that permits reasonable traffic management that treats equivalent types of traffic equally in accordance with their technical requirements (e.g. VoIP sensitivity to time delays), while apply stricter conditions for traffic management measures that target specific content, applications and services.

- Traffic management practices on blocking against specific content, services and application should be formulated to prevent legal uncertainty between reasonable traffic management and stricter conditions on blocking and throttling
- Instead of establishing traffic management practices, we could adopt the approach by Ofcom in UK, who ask broadband providers to disclose, in public domain, the traffic management practices adopted by them to optimise network utilisation. According to this disclosure, providers are required to disclose details w.r.t. three types of TMPs namely blocked, slow down and prioritised. It includes, peak hours when TMP used and traffic type managed during these periods

Q.2 Whether impact of TMPs on consumer's experience can be interpreted from its name and short description about it or detailed technical description would be required to interpret it in objective and unambiguous manner? In case of detail technical description, what framework need to be adopted by Multi-Stakeholder Body to document it. Please suggest with justification.

- The information provided in the technical description should be standard, provide meaningful, useful and comparable information for consumers about their traffic management policies
- The technical terms should be explained in a clear and simple language

Q.3 What set up need to be established to detect violations of Net Neutrality, whether it should be crowd source based, sample field measurements, probe based, audit of processes carried out by access providers or combination of above? How to avoid false positives and false negative while collecting samples and interpreting Net Neutrality violations? Please suggest with justification.

No comments

Q.4 What should be the composition, functions, roles and responsibilities of Multi-stakeholder Body considering the decision of DoT that Multistakeholder body shall have an advisory role and formulation of TMPs and Monitoring & Enforcement (M&E) rest with DoT? Please suggest with justification.

As rightly mentioned in the consultation paper, the Multi-stakeholder body may comprise of members representing different categories of TSPs and ISPs, large and small content providers, representatives from research and academia, civil society organisations and consumer representatives. The members need to be from a broad cross-section of the Internet community to discuss and opine on technical issues pertaining to the operation of the Internet. It needs adequate representation of all service providers and content providers along with consumer representatives to ensure transparency and inclusion of all perspectives.

Such a mechanism exists in the United States in the form of the *Broadband Internet Technical Advisory Group*¹ which has produced many important reports on technical aspects of Internet access service and network management. A similar process may be fruitful in India.

¹ <https://www.bitag.org/index.php>



Q.5 Whether entry fee, recurring fee etc for membership need to be uniform for all members or these may be on the basis of different type or category of membership? What may be these categories? What policy may be adopted for initial set up of Multi-stakeholder Body. Please suggest with justification.

No comments

Q.6 What mechanism may be prescribed to determine fee and other contributions from its members towards expenditure in a fair and nondiscriminatory manner? Please suggest with justification.

No comments

Q.7 What should be the guiding principles and structure of governance of Multi-stakeholder Body? What may be the roles and responsibilities of persons at different positions such as chairing the organization or working groups, governing the functioning, steering the work etc. Please suggest with justification.

As mentioned earlier, the format followed by Broadband Internet Technical Advisory Group can be adopted.

Q.8 Any other issues which is relevant to this subject?

N/A
