



**Mozilla Corporation**  
331 East Evelyn Avenue  
Mountain View, CA 94041

**13 February 2020**

**To:**

Shri RS Sharma  
Chairman, Telecom Regulatory Authority of India

Shri Sunil Bajpai  
Principal Advisor (CA, QOS, IT), Telecom Regulatory Authority of India

Shri Asit Kadayan  
Advisor (QOS), Telecom Regulatory Authority of India

**RE: Comments of the Mozilla Corporation on the Telecom Regulatory Authority of India's Consultation Paper on Traffic Management Practices (TMPs) and Multi-Stakeholder Body for Net Neutrality.**

Dear Sirs,

Thank you for this opportunity to provide comments on this Consultation Paper on Traffic Management Practices (TMPs) and Multi-Stakeholder Body for Net Neutrality.

We commend the Telecom Regulatory Authority of India (TRAI) and the Department of Telecom (DoT) for its thoughtful and considered approach to net neutrality. As our Executive Chairwoman Mitchell Baker noted in a May 5, 2015 letter to Prime Minister Modi:

“Net neutrality is critical to maintaining the continued success of the open Internet as an engine for innovation, opportunity, and learning. We stand firm in the belief that all users should be able to experience the full diversity of the Web. For this to be possible, Internet Service Providers must treat all content transmitted over the Internet equally...”

Along with TRAI's Differential Pricing Regulation, India currently has some of the strongest net neutrality regulations in the world. Mozilla has engaged at each step of the almost five



**Mozilla Corporation**  
331 East Evelyn Avenue  
Mountain View, CA 94041

years of consultations and discussions on this topic<sup>1</sup> and we recognise that the effective monitoring of net neutrality violations by diverse stakeholders is vital to maintaining an open internet. The consultation's outcome, both the multistakeholder advisory group and effective transparency of service provider practices, will be vital for such enforcement.

If you have any questions about our submission or if we can provide any additional information that would be helpful as you continue your important work, please do not hesitate to contact Mozilla's Policy Advisor, Udbhav Tiwari, at [udbhav@mozilla.com](mailto:udbhav@mozilla.com).

Warm regards,

Jocahi Ben-Avie,  
Head of International Policy,  
Mozilla

Udbhav Tiwari,  
Policy Advisor,  
Mozilla

---

<sup>1</sup> <https://wiki.mozilla.org/Netpolicy/actions>



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

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 the perspective of Net Neutrality? Whether a list of Traffic Management Practises (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 the Multi-Stakeholder Body to keep it up to date? Please suggest with justification.**

**Lack of Visibility and Transparency into Current Practices of Access Providers (APs)**

As TRAI noted in section 5.11 of its Recommendations on Net Neutrality in August 2017 (which were then adopted and implemented by the Department of Telecommunications in August 2018):

*“However, other transparency requirements relevant to the principles of non-discriminatory treatment, such as disclosures pertaining to TMPs implemented by TSPs; the impact of such TMPs on user experience; the impact of critical services on user experience; are not mandated by the present regulatory framework.”*

The Department of Telecom, as a part of its adoption of TRAI’s recommendations, deferred the formulation of guidelines around necessary traffic management practices until TRAI reverted with its recommendations on this issue. While recognising that the primary goal of this consultation is to help shape these recommendations, the absence of such regulation has led to an almost complete lack of visibility into whether traffic management practices by such access providers (TSPs and ISPs) are in fact “reasonable.” Despite being a binding part of licence conditions for over 18 months as of this filing, there is no way to know whether access provider practices do not violate the core principles of net neutrality, namely:

1. **The end-to-end principle:** All points in the network should be able to connect to all other points in the network;
2. **The best efforts principle:** Access providers should deliver all internet traffic from point to point as expeditiously as possible; and



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

3. **The innovation without permission principle:** Everyone and anyone should be able to innovate on the internet without seeking permission from anyone, any entity, or other gatekeeper.

Due to this lack of transparency and enforcement, there is currently negligible to non-existent visibility into the network management practices of access providers in India. It is imperative that TRAI creates strong regulation for traffic management that ensures the right to an open internet in India is a meaningful one. Global best practices, as noted in the Consultation paper in Section 2.2, can broadly be categorised into traffic congestion, network security and integrity, legal requirements and emergency situations.

The lack of visibility into the actual implementation of these categories of management by access providers (TSPs and ISPs) in India makes it impossible to determine how traffic management is implemented for these categories, whether these implementations violate net neutrality and finally, if such management practices are actually limited to these categories in the first place. It is quite likely that any practice that exceeds these categories, within reason, would discriminate between traffic in a manner that is against user interest and would violate net neutrality. However, the current status of regulation makes it almost impossible for even regulators (along with users and other stakeholders) to monitor such violations in a proactive and sustainable manner.

### **Reasonable Traffic Management**

As we noted in our response to TRAI's Consultation on Net Neutrality in June 2016, traffic management practices should only be considered reasonable when they are utilized for the purposes of technical maintenance of the network (e.g., to block spam, malware, and attacks on the network), or to mitigate the effects of network congestion under suitable circumstances.

Generally speaking, network congestion can occur due to two conditions:

1. As a result of unpredictable, irregular, and/or temporary network overload; or
2. As the result of an access provider's failure to develop sufficient capacity to handle the network load (which would lead to frequent and sustained windows of network congestion).

In this sense, congestion occurs under exceptional circumstances of unpredictable situations, and reasonable traffic management should be permitted to address these situations. However, the concept of reasonable traffic management should and must be strictly limited to



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

circumstances of unpredictable load at irregular times (condition 1), and must not be used as a cover for systemic underinvestment in network capacity (condition 2).

The recommendations on traffic management as summarized in Paragraph 24(b) of TRAI Pre-Consultation Paper on Net Neutrality provided relevant additional guidance on this issue:

*“(b) Legitimate traffic management practices may be allowed subject to the core principles. The general criteria against which these practices can be tested may inter alia include:*

- *Adequate disclosure to users about traffic management policies and tools to allow them to make informed choices.*
- *Application-agnostic controls may be used but application-specific control within the “Internet traffic” class may not be permitted.*
- *Practices like deep packet inspection should not be used for unlawful access to the type and contents of an application in an IP packet.*
- *Improper (paid or otherwise) prioritisation may not be permitted.”*

In general, the Body of European Regulators for Electronic Communications (BEREC) Guidelines on Net Neutrality (2016) and subsequent documentation are excellent models for looking at reasonable traffic management practices and their regulation. For example, in order to be considered “reasonable”, traffic management under BEREC guidelines would have to be based on objectively different technical Quality of Service (QoS) requirements of specific categories of traffic. Further, according to BEREC, categories of traffic can be defined, for example, by reference to application layer protocol or generic application type, but only to the extent :

1. they objectively require different technical QoS;
2. all applications with equivalent requirements are handled in the same category; *and*
3. the justification given is relevant to the category of traffic in question.

Importantly, BEREC also requires that such measures do not monitor specific content (content provided by the end-users themselves, such as text, pictures and video), and that by virtue of non-discrimination, encrypted traffic is treated on par with normal traffic.<sup>2</sup>

---

<sup>2</sup> [https://berec.europa.eu/files/document\\_register\\_store/2016/8/NN%20Factsheet.pdf](https://berec.europa.eu/files/document_register_store/2016/8/NN%20Factsheet.pdf)



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

**Specialised services**

As a part of this consultation, we encourage TRAI and the Government of India to consider the topic and appropriate limitations on specialised services in any forthcoming recommendations and regulation.

Specialised services should be understood as electronic communication services which are distinct from internet access services and provide a specified level of quality of service generally optimized for specific content, applications, services, or some combination thereof. Such optimisation is necessary in order to meet the specific requirements for the specific level of quality. Specialised services are notable in the current context in that they are sometimes justified by TSPs as a mechanism for reducing network congestion; we believe the use of specialized services in this manner should be subject to strict oversight and limitations.

Technically speaking, specialised services can be engineered in (at least) three distinct ways. First, they could be provisioned over distinct physical infrastructure, as separate wires and other hardware. Second, they could be provisioned as channels within the open internet access service, using bandwidth allocated for the internet access service but on a different priority level to achieve the desired quality threshold. Finally, they could be provisioned as channels that use the same physical infrastructure but a separate logical capacity, virtually walled off from the open internet service.

As compared to the second variety, the third, logical separation over shared physical infrastructure, offers the same benefits for the ancillary services with fewer potential harms to competition as compared to shared logical channeling. Sharing both the physical and logical infrastructure (the second variety) is functionally comparable to paid prioritisation arrangements over the open internet access service, something recognised widely as harmful to competition, innovation, and user choice. In this variety, in the same way as paid prioritisation, giving a benefit to one causes practical harm to others (in that the capacity they could use is less than it would be if the specialised service were not actively in use), as well as challenging the user's expected bandwidth for their open internet access service (as some of that capacity is cannibalised by the specialised service).

In contrast, logical separation (the third variety) isolates and protects the capacity available to the open internet access service. Use of the specialised service does not create congestion nor performance impact for uses of other content, applications, and services on the open internet.



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

Although the total bandwidth available to the end user for open internet connectivity is less, suitable disclosures can be made up front, and users will be better empowered to choose whether or not they wish to subscribe to specialised services and thereby limit their open internet usage.

It's highly unclear whether specialised services are necessary. Often, the contextual problems used to justify their "need" could just as easily be remedied through infrastructure investment, with far more significant benefits for the ecosystem as a whole. The benefits are also highly dependent on the nature of the implementation, and the source of delays associated with the open internet connection.

We respectfully suggest that TRAI and the Government of India would be served well by establishing a clear set of principles and a regulatory framework for specialised services in any forthcoming regulation in order to best protect the Indian digital economy, Indian users, and the open internet in the face of future changes to business models and practices.

Regulatory vigilance and guidance will be needed to address new innovations and novel, more subtle threats to net neutrality in this fast-changing sector. Both the TRAI and DoT choose to not go into specialised services in their previous engagements on net neutrality and this consultation is a perfect opportunity to regulate this critical issue.

**Closed networks**

In the Regulation on Data Services, TRAI noted an exemption to the Regulation's restrictions on differential pricing for "closed networks":

"Differential tariffs being offered for data transmitted over closed electronic communications networks, such as intranets are not prohibited by these regulations. Though the prohibition on discriminatory pricing of data services does not apply to such networks, which are not accessing the internet, if such a closed network is used for the purpose of evading these regulations, the prohibition will nonetheless apply."

While this is a strong protection, especially when combined with the regulatory principle that "what is done directly cannot also be not done indirectly", there has been some concern that this provision on closed networks could still be exploited to offer a communications service that violates the prohibition on differential pricing as well as any forthcoming regulation on net neutrality. To that end, we respectfully suggest that TRAI might be well served to articulate some additional regulatory guidance to further curtail evasions of these core



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

protections. Specifically, we suggest that any electronic communications service that is available to the public should be obligated to abide by: 1) the prohibition on differential pricing in the Data Services Regulation, 2) any current or forthcoming regulation on net neutrality, and 3) the Robust Internet Connectivity Principle under which connectivity and technical performance must scale along with user needs and expectations. Should access providers be allowed to weaken open Internet connections in favor of closed systems, the network as a whole would suffer.

By focusing on whether a service is available to the public, such a provision would effectively exempt a service like a corporate intranet but would apply to a B2B or specialised service that seeks to masquerade as a closed network in order to violate net neutrality. However, TRAI may wish to exempt services like WiFi on planes from these regulations; this can be effectively accomplished by specifying that this exemption only applies to electronic communications offerings that are not ancillary to a communications service.

**Framework for Traffic Management Practices**

Given the fast-paced changes in the technology sector, it would be ideal for TRAI and the Department of Telecom (DoT) to follow a hybrid approach rather than limiting itself to either explicit whitelisting or exclusive multi stakeholder board engagement as suggested in the consultation paper. Such an approach would combine the explicit whitelisting of broad categorization of acceptable practices in actual text of the regulation or licence conditions along with a catch-all provision. The catch-all provision would allow the DoT - with the help of the Multi-Stakeholder Advisory Board - to issue guidelines, notifications or clarifications on reasonable management practices that would also be equally binding on access providers (TSPs and ISPs). This will help ensure predictability for access providers in a broad sense and aid in the ease of enforcement in case of violations due to their explicit inclusion of licence conditions. Simultaneously, it will also help ensure dynamic flexibility for the DoT to specify not only *what* acceptable practices are but also *how* such acceptable practices should be carried out and *when* such practices will no longer be reasonable and violate net neutrality. This will also allow for the implementation of granular formats, tools, reporting obligations and other aids for enforcement, with multi-stakeholder inputs, without having to frequently amend the regulation or licence conditions themselves.

Specifically, **Option 3** mentioned in the Consultation Paper in Section 2.4.2, would be an effective way to implement such a catch-all provision by allowing the public and other experts outside of the Multi-Stakeholder Advisory Board to help monitor and report violations





**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

of net neutrality. The strong precedent established by Ofcom in this regard, as noted in the Consultation Paper, provides the evidence necessary for why this will aid in transparency and enforcement while retaining the ultimate decision making power with the DoT.

- 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 detailed technical description, what framework needs to be adopted by the Multi-Stakeholder Body to document it. Please suggest with justification.**

TRAI should be commended for taking a granular and technical approach to this issue rather than a purely rhetorical, high-level based on principles. Effective enforcement of net neutrality would require both quantitative and qualitative approaches to document consumer experiences. Therefore, allowing consumers and other interested stakeholders to submit qualitative descriptions of experiences while also simultaneously creating detailed technical descriptions and formats for submitting such data would enhance effective monitoring of access provider (TSPs and ISPs) practices at scale. The qualitative descriptions alone, when not accompanied by the quantitative technical description, could then be used to further investigate that particular provider and geographical region by the Multi-Stakeholder Advisory Board, TRAI, or DoT as appropriate using technical tools.

Specifically, BEREC’s Net Neutrality Regulatory Assessment Methodology<sup>3</sup> in Chapter 3 lists out technical specifications categorised into speed measurements, delay and delay variation measurements, and packet loss measurements categories that can serve as a framework for the detailed technical description that can be notified by TRAI and DoT.

- 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 negatives while collecting samples and interpreting Net Neutrality violations? Please suggest with justification.**

---

3

[https://www.berec.europa.eu/eng/document\\_register/subject\\_matter/berec/regulatory\\_best\\_practices/methodologies/7295-berec-net-neutrality-regulatory-assessment-methodology](https://www.berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/methodologies/7295-berec-net-neutrality-regulatory-assessment-methodology)



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

Given the scale of the network infrastructure in India, a mixture of all these measures will be necessary to effectively enforce net neutrality. The responsibility for these measures can be split between consumers (via technical tools), access providers (via reporting obligations), the Multi-Stakeholder Advisory Board, TRAI and DoT depending on feasibility and capability required for the measure. Third party monitoring projects such as Open Observatory of Network Interference (OONI) and M-Lab could also feed into such enforcement mechanisms.

In order to aid technical measurement of net neutrality violations, TRAI could follow the model of BEREC which commissioned the creation of a Net Neutrality Measurement Tool that combines multi-modal means of measurements of network parameters that collectively can be used to determine violations of net neutrality. The specification sheet<sup>4</sup> for the tool could be the model for a similar project in India or even serve as the direct foundation for the codebase for an Indian tool as a collaborative effort with BEREC since the tool itself will be open source when released. The specification sheet also contains a good technical underpinning (Section 3.1) for the various parameters that can be used to detect violations of net neutrality such as speed measurement, delay measurements, application specific measurement, and additional modules

Once available, TRAI can use a combination of:

- running the tool regularly from its offices which are spread around the country; *and*
- mandating access providers (TSPs and ISPs) run the tool on a regular basis; *and*
- mandating access providers upload the results of running the tool as a part of their public disclosures; *and*
- TRAI and others spreading public awareness across the country of crowdsourcing tools interested members of the public.

The Open Observatory of Network Interference (OONI)<sup>5</sup> and M-Lab<sup>6</sup> projects are a good model on how to encourage and leverage public monitoring of network neutrality. The TRAI and the multi-stakeholder body can also look to these projects to inform their technical standards and deployment best practices.

---

<sup>4</sup>

[https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/7296-net-neutrality-measurement-tool-specification](https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/7296-net-neutrality-measurement-tool-specification)

<sup>5</sup> <https://ooni.org/>

<sup>6</sup> <https://www.measurementlab.net/>



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

**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.**

The TRAI and DoT have been widely commended for creating one of the strongest net neutrality regimes in the world. The powerful deterrent of license revocation for access providers that violate this regime has set an example for much of the world in maintaining an open internet. Given this context, a truly empowered and diverse multi-stakeholder advisory body will go a long way cementing India's position as a leader in net neutrality regulation globally.

Despite the various attempts made at formalising multi-stakeholder governance in the technology sector, there are very few countries that have a legally sanctioned institution tasked with maintaining an open internet. India has an opportunity to lead the way by creating a multi-stakeholder body that is independent, treats all members equally and is financially empowered to fulfil its mandate for an issue that is dear to millions of its residents. This approach will also allow for scaled monitoring by civil society and academia, while protecting them from the influence of access providers. This ability will be vital in maintaining the freedoms granted by the parent regulation.

Such a body will help maximise the odds of upholding the strong public interest which was behind one of the largest internet campaigns in history that led to India's net neutrality regulations in the first place. It is imperative that TRAI and DoT seize this moment and create another example of why the world can look to India on regulating net neutrality for a people centred internet.

The Brazilian Internet Steering Committee (Comitê Gestor da Internet no Brasil - CGI) is a reasonable model to emulate in the creation of the multi-stakeholder body for the enforcement of net neutrality. Such a model will be the ideal way to ensure that all stakeholders are given equal and non-discriminatory importance in the advisory role such a body will play to the the DoT. The Internet Rights Law of 2014 in Brazil (which guarantees net neutrality) also tasks the CGI with providing clarity on enforcement, suggesting oversight mechanisms, providing



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

mechanisms to decide the credibility of complaints, and specifically recommend what government agencies could do to respond to violations of net neutrality.

The other models considered in the consultation paper, such as the Broadband Stakeholder Group and the EU Cloud Code of Conduct, in this case would be traditionally biased in favour of access providers and their interests. Technology companies that aren't access providers, civil society, academics, and consumer groups usually become second-tier members in such models with no voting rights at the board level, insufficient powers of enforcement, and key governance roles being denied to them. The creation of such a model will lead to the creation of a quasi-industry association which will exclusively cater to the needs and models of access providers. Such models are also usually exclusively funded by "full members" (which in this case would be access providers) for their day to day operations which in turn can have a drastic impact on the independence and reliability of research, authenticity of enforcement investigations, and the general working agenda of such a body.

Specific details of what the such a multi-stakeholder body could look like are:

- **Composition**

India's multi-stakeholder body could be composed of 13 members, nominated by TRAI, with the following breakdown (inspired by the Brazillian CIG):

- Three representatives from the Central Government (TRAI/DoT Officials)
- Three representatives from the corporate sector (access providers)
- Three representatives from Indian civil society
- Two representatives from the academic and scientific research community
- Two internet/connectivity experts, including international nominees

This will balance the presence of the government, access providers, civil society, and academia while also allowing for global expertise to be a part of the conversation in the Indian context.

- **Function**

In addition to the seven functions suggested in the Consultation Paper (Section 3.3.2), the following functions could be added to the mandate of the multi-stakeholder body:



**Mozilla Corporation**

331 East Evelyn Avenue  
Mountain View, CA 94041

- Convening and promoting research on traffic network management practices, transparent enforcement measures, and any other area necessary for the effective enforcement of net neutrality; *and*
- Collecting, organizing, and disseminating information related to the performance of access providers in upholding net neutrality.

**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 types or categories of membership? What may be these categories? What policy may be adopted for the initial set up of the Multi-stakeholder Body. Please suggest with justification.**

In order to ensure that the agenda and functioning of the multi-stakeholder body does not get captured by its richest members (which would typically be access providers), there should be one uniform category of memberships and no membership fee to participate in the body. Any discrimination between membership rights or tying them to financial contributions would make the risks highlighted in Section 3.2.3 of the consultation paper all but certain, spelling a death knell for the effective enforcement of net neutrality in India.

The body should be funded by the Indian Government, with a provision for members and other interested parties to be able to donate funds to the body without any corresponding increase in their rights or privileges in the body. These operational funds could be provided by the DoT, the TRAI, or from other funds that focus on the telecom sector such as the Universal Service Obligation Fund (USOF). The USOF is currently transferred to the Consolidated Fund of India and parliamentary approval could be obtained for using a small fraction of the large pool to fund the multi-stakeholder body.

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

As stated in response to Question 5, there should be one uniform category of memberships and no membership fee to participate in the multi-stakeholder body to preserve its independence and effective functioning.



**Mozilla Corporation**  
331 East Evelyn Avenue  
Mountain View, CA 94041

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

The fair, reasonable, and non-discriminatory principle mentioned in Section 3.2.2 should ideally be incorporated into the founding charter of the body and be made an integral part of its standard operating procedures. The multi-stakeholder body should be supported by a full fledged secretariat, with dedicated departments for its various functions, in order to ensure that its members have sufficient personnel and resources to effectively fulfil their mandate. Such a secretariat could have staff and office bearers which could, in turn, report to the multi-stakeholder body. The procedures and processes of the Brazilian Internet Steering Committee (which can be condensed for the net neutrality context, since the CIG has a much wider mandate) can be studied and adopted as appropriate.

- 8. Any other issues which are relevant to this subject?**

None