

CIS Submission to TRAI Consultation on Net Neutrality

Centre for Internet and Society | 2017-01-04

Pranesh Prakash Udbhav Tiwari Pranav Bidare

Table of contents

1. Preliminary	1
2. Principles for Nondiscriminatory Access	2
3. Definitions in the NN Context	2
3.1. Specialized Services and IoT	3
3.2. CDNs and Interconnection	4
4. Preferable Regulatory Approach	4
5. Broad Regulatory Approach	5
6. Narrow Regulatory Approach	6
7. Exceptions to Regulation on TMPs	6
8. Detection of Practices	7
9. Transparency Models	7
10. Information Disclosure Template	8
11. Legal/Policy Instrument	8
12. Monitoring for Violations	8
13. Collaborative Mechanism	9
14. Future-proofing the Framework	10
15. Impact of User Side Factors	10
References	10

1. Preliminary

This submission presents comments by the Centre for Internet and Society in response to the Consultation Paper on Net Neutrality issued by the Telecom Regulatory Authority of India on 4 January, 2017. The comments are given as inline responses to the “Issues of Consultation” framed by the TRAI in the paper. The comments were prepared by Pranesh Prakash, Udbhav Tiwari and Pranav Bidare.

The Centre for Internet and Society, (“CIS”), is a non-profit organisation that undertakes interdisciplinary research on internet and digital technologies from policy and academic perspectives. The areas of focus include digital accessibility for persons with diverse abilities, access to knowledge, intellectual property rights, openness (including open data, free and open source software, open standards, and open access), internet governance, telecommunication reform, digital privacy, and cyber-security.

This submission is consistent with CIS’ commitment to safeguarding general public interest, and the interests and rights of consumers. CIS is thankful to the TRAI for this opportunity to provide feedback to the consultation paper.

2. Principles for Nondiscriminatory Access

Question 1: What could be the principles for ensuring nondiscriminatory access to content on the Internet, in the Indian context?

The core principles of Net neutrality are universal to all market contexts. CIS has catalogued over three dozen disparate definitions of Net neutrality proposed by different regulators, academics, activists, and research bodies. The definition we have previously offered to TRAI and to the Department of Telecom is:

*Net neutrality is the principle that Internet gatekeepers ought not to be able to use their gatekeeping power to unjustly discriminate between similarly situated persons, content or traffic.*¹

As we have stated in a previous submission to TRAI on differential pricing,² we believe that net neutrality should preserve and promote user choice, competition, access, and openness and generativity of the Internet.

This means, as we have stated previously, that ISPs should not engage in any form of negative discrimination — whether in the form of increased price / lower data cap, or lowered quality of service — on the basis of content or application, with limited and reasonable exceptions. ISPs may engage in positive discrimination in those cases where such discrimination does not harm user choice, competition, or access, or openness and generativity of the Internet.³

3. Definitions in the NN Context

Question 2: How should “Internet traffic” and providers of “Internet services” be understood in the NN context?

Net neutrality is an issue that arises due to gatekeeping. “Gatekeeping” occurs when a single company establishes itself as an exclusive or near-exclusive route to reach a large number of people and businesses or, in network terms, nodes.⁴ In the case of Internet traffic, while anti-competitive terms may exist in the middle-mile, especially given the opacity of commercial terms in transit agreements, and a packet is usually able to travel through multiple routes. However, this multiplicity of routes is generally not possible in the last mile (what European

¹Pranesh Prakash, “Regulatory Perspective on Net Neutrality,” 2015, <http://cis-india.org/internet-governance/blog/regulatory-perspectives-on-net-neutrality>.

²Centre for Internet and Society, “CIS Submission to TRAI Consultation on Differential Pricing,” January 7, 2016, http://cis-india.org/internet-governance/resources/net-neutrality/2016-01-07_cis_trai-submission_differential-pricing/.

³

⁴Prakash, “Regulatory Perspective on Net Neutrality”.

regulators call “Internet Access Services”, and what are in technical literature often referred to as “eyeball ISPs”) as it is not possible for Internet services to reach the customers of an Internet access service without passing through that Internet access service (sometimes referred to as a “terminating access monopoly”⁵). This leaves last mile telecom operators (ISPs) in a stronger position to unfairly discriminate between different Internet services or destinations or applications, while harming consumer choice. In India, the gatekeeping effect of telecom companies in the last mile for mobile Internet is weaker than it is in a country like the USA.⁶

However, Net neutrality shouldn’t be seen as exclusively applying to last mile ISPs. It should apply wherever gatekeeping effects are strong.

3.1. Specialized Services and IoT

(a) Should certain types of specialised services, enterprise solutions, Internet of Things, etc., be excluded from its scope? How should such terms be defined?

Net neutrality regulations relating to quality of service and differential pricing of service, content, or applications should apply to general Internet services provided to general customers. It should not apply to other circumstances: provision of free Wi-Fi hotspots, provision of Internet services in constrained environments like an airplane or with specialized devices, provision of virtual private network services. Further, specialised services should also form an exception. We have previously noted specialised services should be permissible if they meet the following criteria:⁷

1. The service is available to the user only upon request, and not without their active choice, and
2. General Internet access (without any form of preferential treatment of any class of traffic) is provided at the same or lesser cost, and
3. The service cannot be reasonably provided with “best efforts” delivery guarantee that is available over the Internet, and hence requires discriminatory treatment, or
4. The discriminatory treatment does not unduly harm the provision of the rest of the Internet to other customers.

For instance, PSTN calls (VoLTE) are expected to deliver high quality of service and cannot be treated equivalent to Skype or WhatsApp. Telecom providers should be free to use their networks to provide any services that require higher quality of service as long as they keep such services logically distinct from

⁵Jonathan E. Nuechterlein and Christopher S. Yoo, “A Market-Oriented Analysis of the “Terminating Access Monopoly” Concept,” *Colorado Technology Law Journal* 14 (2015): 22, https://www.ftc.gov/system/files/documents/public_statements/894663/151129nuechte_rlein_yooarticle.pdf.

⁶Prakash, “Regulatory Perspective on Net Neutrality”.

⁷Centre for Internet and Society, “CIS Submission to TRAI Consultation on Differential Pricing,” 5-6.

Internet-based services without harming them, or there is a clear inability to otherwise provide the quality of service that would be needed, for instance for emergency health services.⁸

In this regard, Article 3(5) of BEREC’s regulations are sensible.

3.2. CDNs and Interconnection

(b) How should services provided by content delivery networks and direct interconnection arrangements be treated?

Net neutrality rules should not only cover discrimination on the basis of quality of service and service-, content-, and application-specific differential pricing, but also discrimination on the basis of *networks*. However, the reasoning that TRAI adopted in the differential pricing regulations (para 5, para 20), would encourage regulation of content delivery networks on the basis of “non-level playing fields” that CDNs create by choosing which networks to interconnect with and hence differentially benefitting some Internet access services over others. Such regulation is not desirable.

We had suggest a different approach earlier,⁹ noting that TRAI needs to be studying interconnection.¹⁰ Some basic rules covering termination and interconnection would look like this:

1. No termination charges or carriage charges may be levied by any ISP upon any Internet service. No Internet service may be negatively discriminated against with regard to carriage conditions or speeds or any other quality of service metric.
2. All interconnection agreements, when they involve settlement, should be deposited with TRAI.
3. TRAI should remind ISPs that so far it has been forbearing from regulating ISP interconnection and pricing, but that it has the power to do so if it finds ISPs abusing their termination access monopolies.

4. Preferable Regulatory Approach

Question 3: In the Indian context, which of the following regulatory approaches would be preferable: (a) Defining what constitutes reasonable TMPs (the broad approach), or (b) Identifying a negative list of non reasonable TMPs (the narrow approach).

⁸Rekha Jain et al., “Response to TRAI Consultation Paper on Regulatory Framework for Over-the-Top (OTT) Services,” March 27, 2015, 21–23, http://cis-india.org/internet-governance/resources/net-neutrality/2015-03-27_cis_trai-submission_regulation-OTTs.

⁹Centre for Internet and Society, “CIS Submission to TRAI Consultation on Differential Pricing,” 11.

¹⁰Centre for Internet and Society, “CIS Submission to TRAI Pre-Consultation on Net Neutrality,” July 5, 2016, http://cis-india.org/internet-governance/resources/2016-07-05_cis_trai-submission_net-neutrality-preconsultation, Reply to Q. 6.

CIS believes that an ideal regulatory approach would be the former, broader approach, with the participation of all stakeholders in defining it. The regulatory approach must remain flexible. The regulation must not result in compromising user choice, and must not hinder innovation. Additionally, it must ensure effective competition between TSPs in an efficient market, and avoid market failures. These prerequisites are more important to the regulatory approach than mere methodology of regulation.

5. Broad Regulatory Approach

Question 4: If a broad regulatory approach, as suggested in Q3, is to be followed:

(a) What should be regarded as reasonable TMPs and how should different categories of traffic be objectively defined from a technical point of view for this purpose?

As CIS has submitted earlier,¹¹ as a general standard, discrimination between classes of traffic for the sake of network management should be permissible, but with the conditions that: (a) there is an intelligible differentia between the classes which are to be treated differently, and (b) there is a rational nexus between the differential treatment and the aim of such differentiation.

Additionally, when the asked to judge the reasonableness of any particular form of differentiation (and whether it amounts to discrimination), the regulator could look into whether the aim sought to be furthered by the TSP was legitimate (for instance, it is related to the security, stability, or efficient functioning of the network, or is a technical limitation outside the control of the TSP), and whether the measures adopted by the TSP were reasonably and narrowly-tailored to meet those aims.

(b) Should application-specific discrimination within a category of traffic be viewed more strictly than discrimination between categories?

Yes, and in holding so we disagree with a paper quoted by TRAI in the differential pricing regulations.¹² We believe that the rational nexus test (outlined above) provides a clear basis for judging when differential treatment between classes of traffic is legitimate and when it isn't.

(c) How should preferential treatment of particular content, activated by a user's choice and without any arrangement between a TSP and content provider, be treated?

As suggested by our response to Q.2(a), preferential treatment of particular traffic may be permitted as long as some additional conditions are fulfilled, thus

¹¹Centre for Internet and Society.

¹²Barbara van Schewick, "Network Neutrality and Quality of Service: What a Non-Discrimination Rule Should Look Like," *Stanford Law Review* 67 (2015): 1.

ensuring that this isn't a forced choice and that this doesn't unduly harm the provision of full Internet services.

6. Narrow Regulatory Approach

Question 5: If a narrow approach, as suggested in Q3, is to be followed what should be regarded as non reasonable TMPs?

Any kind of rule that is clearly defined, i.e., is composed of solely objective factors and which leaves little or no room for varying interpretation is ill-suited to the paradigm of net neutrality. Such rules mostly end up being tedious to implement for service providers, have a feature-creep style of exceptions that must frequently be modified to account for technological advances and are difficult to enforce by regulatory authorities. Even if all of these challenges can be surmounted, it can lead to the outlawing of practices such as port 25 being blocked by Brazilian ISPs with the intent of preventing spam, due to violations of net neutrality. Therefore, in order to avoid these issues and challenges, CIS recommends the broad approach (by defining what are reasonable TMPs) be taken instead.

7. Exceptions to Regulation on TMPs

Question 6: Should the following be treated as exceptions to any regulation on TMPs?

These would be seen as exceptions only if a narrow approach is taken, but as legitimate reasons for traffic management if a broad approach is taken. We would recommend the latter approach.

(a) *Emergency situations and services* Yes, emergency services should be treated as exceptions under the regulation to allow for resource and environment restraints that typically occur during emergencies.

(b) *Restrictions on unlawful content* Yes, restrictions on unlawful content in the regulation would be acceptable but only upon directions of the government, as provided in the Supreme Court of India's judgment in *Shreya Singhal v. Union of India* (2015). The current regime of content regulation contained in the Department of Telecommunication's ISP Licence and Unified Licence are not in keeping with the Supreme Court's judgment in that case.

(c) *Maintaining security and integrity of the network* Yes, exceptions that allow for reactive and proactive measures to protect the performance, security and integrity of a network would be acceptable. For eg: Regulating (or even blocking) traffic that is clearly responsible for a Denial of Service (DoS) attack either manually or automatically by a firewall, should be seen as legitimate.

(d) *Services that may be notified in public interest by the Government/ Authority* The presence of such a provision in the regulations would

normally be circumspect, due to the potential for abuse by the government. Therefore, if such a provision is present, it must be present with a clear standard of what would constitute public interest, contain sufficient checks and balances to prevent abuse and should have appellate mechanisms to allow the public challenge the classification of a service being in public interest. Ideally, the power to notify such services in public interest should be present within the DoT. Further, if this provision is used to block content, then it (at a minimum) must follow the same standards prescribed by Section 69A of the IT Act.

(e) *Any other services.* No comments.

8. Detection of Practices

Question 7: How should the following practices be defined and what are the tests, thresholds and technical tools that can be adopted to detect their deployment?

As noted above, we would prefer a broad approach to reasonable traffic management rather than a narrow approach which is suggested by this question.

(a) *Blocking* The definition of blocking that is adopted must be user-centric and not ISP-centric, as the primary gauge of the effect of blocked content is user experience. For example, certain ISPs in the Indian marketplace block DNS queries for SRV records, which can negatively affect the functioning of certain chat and voice services such as XMPP, SIP, etc. Due to affecting a certain category of users, it's after effects are not widely felt in the marketplace but yet have a tangible effect for those who choose to voice-over-IP services and chat services.

Blocking is easy to establish using standard network tools like traceroute, dig, nslookup, curl, etc.

(b) *Throttling* Establishing that a particular application is being throttled.

(c) *Preferential treatment* Establishing that preferential treatment is being provided to a particular application.

Testing for throttling and preferential treatment is not easy. An overview of current tools and techniques is available in an Ofcom-commissioned paper on "Traffic management detection methods and tools".¹³

9. Transparency Models

Question 8: Which of the following models of transparency would be preferred in the Indian context: (a) Disclosures provided directly by a TSP to its consumers; (b) Disclosures to the regulator; (c) Disclosures to the general public; or (d) A combination of the above. Please provide reasons. What should be the mode, trigger and frequency to publish such information?

¹³Ofcom, "Traffic Management Detection Methods and Tools," 2015, <https://www.ofcom.org.uk/research-and-data/technology-research-reports/2015-reports/traffic-management>.

Different levels of transparency are required for different kinds of information. Some information (for instance, on traffic management practices) is required for current and potential customers, while other information (for instance, interconnection agreements) are commercially sensitive and ought to be provided to the regulator. Insofar as disclosures to the general public are concerned, the model followed by ISPs in the United Kingdom for such disclosures provides a good reference.

10. Information Disclosure Template

Question 9: Please provide comments or suggestions on the Information Disclosure Template at Table 5.1? Should this vary for each category of stakeholders identified above? Please provide reasons for any suggested changes.

Disclosures relating to interconnection are required as well.

11. Legal/Policy Instrument

Question 10: What would be the most effective legal/policy instrument for implementing a NN framework in India? [See Chapter 6] - TRAI Guidelines, (a) Which body should be responsible for monitoring and supervision? (b) What actions should such body be empowered to take in case of any detected violation? (c) If the Authority opts for QoS regulation on this subject, what should be the scope of such regulations?

The ideal form for implementation of a Net neutrality framework is that of co-regulation, details of which are provided in response to question 12, below. TRAI should retain powers of legal enforcement of co-regulatory guidelines, and should use that power judiciously, and only if necessary.

12. Monitoring for Violations

Question 11: What could be the challenges in monitoring for violations of any NN framework? Please comment on the following or any other suggested mechanisms that may be used for such monitoring: [See Chapter 6] (a) Disclosures and information from TSPs; (b) Collection of information from users (complaints, user-experience apps, surveys, questionnaires); or (c) Collection of information from third parties and public domain (research studies, news articles, consumer advocacy reports).

Reactive investigation of claims of QoS violations pose many problems as do proactive monitoring of compliance. The best option would be to require such metrics as can be measured by end-users as far as possible, along with other metrics (such as contention ratios) that regulators can monitor. It would be worthwhile for TRAI to engage in discussions with other telecom regulators on monitoring techniques. It would also be worthwhile for TRAI to add other quality of experience tests to the MySpeed app, and expand it.

One very difficult challenge with monitoring for violations of reasonable traffic management rules is that reasonableness depends on purpose for which the traffic management practice is deployed. Monitoring cannot by itself inform a regulator as to the purpose, and invasive techniques such as requiring proactive disclosure of detailed logs (which might be necessary to figure out what precise actions were taken by network engineers) from all ISPs will both unduly burden ISPs — as these decisions will be made at multiple levels and will not be made centrally — and will flood the regulator with more data than it will be able to handle.

An addition to the suggested monitoring mechanisms could include complaints from service providers (telecom, internet, content, etc.) and researchers, who are often in a better position to detect non-compliance with practices than end consumers. These should ideally be handled by the co-regulatory forum first before TRAI steps in.

13. Collaborative Mechanism

Question 12: Can we consider adopting a collaborative mechanism, with representation from TSPs, content providers, consumer groups and other stakeholders, for managing the operational aspects of any NN framework? *(a) What should be its design and functions?*

A co-regulatory approach is highly desirable for a highly technical issue like Net Neutrality. As Chris Marsden puts it:

“Co-regulation expresses a form of regulation which is neither state or NRA regulation with specialized functions, nor ‘pure’ self-regulation as observed in industry-led standard setting. The state and stakeholder groups including consumers are stated to explicitly form part of the institutional setting for regulation. Co-regulation constitutes multiple stakeholders, and this inclusiveness results in greater legitimacy claims. However, direct government involvement including sanctioning powers may result in the gains of reflexive regulation – speed of response, dynamism, international cooperation between ISPs and others – being lost.”¹⁴

The kind of co-regulation that we would recommend is a highly guided form, which Marsden terms “approved compulsory co-regulation”. In this model, the principles to be achieved would be laid down by the multi-stakeholder forum in consultation with TRAI, with TRAI retaining the authority to approve or reject actions, and also retaining the power to conduct process audits. The forum would need to have representation from a range of ISPs — small and large; mobile and fixed line; last mile, middle mile, and backhaul; commercial and non-profit — licensed and unlicensed network actors such as IXPs, content providers,

¹⁴Chris Marsden, *Net Neutrality: Towards a Co-Regulatory Solution* (Bloomsbury Academic, 2010), 221.

etc.; and academics (with backgrounds in both network infrastructure, law, as well as economics), as well as consumer rights representatives. It's functioning should be funded by the commercial ISPs participating in the forum, and should mainly largely over open and archived mailing lists, with occasional face-to-face meetings (say, twice a year).

(b) What role should the Authority play in its functioning? See above.

14. Future-proofing the Framework

Question 13: What mechanisms could be deployed so that the NN policy/regulatory framework may be updated on account of evolution of technology and use cases?

The best way to ensure regulations keep pace with technology is to ensure the regulatory framework is broad and general rather than narrow and technology-specific, and to ensure that the process is flexible and involves multiple stakeholders (as would be the case of the co-regulatory forum we've proposed). This is also why we have suggested using a broad approach to reasonable traffic management rather than a narrow approach.

15. Impact of User Side Factors

Question 14: The quality of Internet experienced by a user may also be impacted by factors such as the type of device, browser, operating system being used. How should these aspects be considered in the NN context? Please explain with reasons.

If there is negative discrimination by an ISP on the basis of the software being used by an end-user, that would generally violate Net neutrality guidelines/regulations unless it is done in a manner that respects user choice. For instance, if a customer requests an ISP to dynamically optimize traffic if a mobile device is being used, that should be permissible, and should be seen as a specialized service.

Apart from this, the differences between quality of experience and quality of service shouldn't really affect Net neutrality regulations.

References

Centre for Internet and Society. "CIS Submission to TRAI Consultation on Differential Pricing," January 7, 2016. http://cis-india.org/internet-governance/resources/net-neutrality/2016-01-07_cis_trai-submission_differential-pricing/.

———. "CIS Submission to TRAI Pre-Consultation on Net Neutrality," July 5, 2016. http://cis-india.org/internet-governance/resources/2016-07-05_cis_trai-submission_net-neutrality-preconsultation.

Jain, Rekha, Radha Ravattu, Rishabh Dara, and Pranesh Prakash. "Response to TRAI Consultation Paper on Regulatory Framework for Over-the-Top (OTT) Services," March 27, 2015. http://cis-india.org/internet-governance/resources/net-neutrality/2015-03-27_cis_trai-submission_regulation-OTTs.

Marsden, Chris. *Net Neutrality: Towards a Co-Regulatory Solution*. Bloomsbury Academic, 2010.

Nuechterlein, Jonathan E., and Christopher S. Yoo. "A Market-Oriented Analysis of the "Terminating Access Monopoly" Concept." *Colorado Technology Law Journal* 14 (2015): 21. https://www.ftc.gov/system/files/documents/public_statements/894663/151129nuechterleinyooarticle.pdf.

Ofcom. "Traffic Management Detection Methods and Tools," 2015. <https://www.ofcom.org.uk/research-and-data/technology-research-reports/2015-reports/traffic-management>.

Prakash, Pranesh. "Regulatory Perspective on Net Neutrality," 2015. <http://cis-india.org/internet-governance/blog/regulatory-perspectives-on-net-neutrality>.

Schewick, Barbara van. "Network Neutrality and Quality of Service: What a Non-Discrimination Rule Should Look Like." *Stanford Law Review* 67 (2015): 1.