



RJIL/TRAI/2017-18/73
14th April 2017

To,
Sh. Asit Kadayan
Advisor (QoS),
Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
Jawahar Lal Nehru Marg, New Delhi 110002

Subject: Comments on TRAI's Consultation Paper on "Net Neutrality" dated 04th January 2017.

Dear Sir,

Please find enclosed herewith comments of Reliance Jio Infocomm Limited on Consultation Paper on "Net Neutrality" dated 04th January 2017 for your kind consideration please.

Thanking You,
For **Reliance Jio Infocomm Limited**,


Kapoor Singh Guliani
Authorised Signatory



Enclosure: As above.

RELIANCE JIO INFOCOMM COMMENTS ON TRAI'S CONSULTATION PAPER ON
"NET NEUTRALITY"
(Dated 4th January 2017)

General Comments:

1. At the outset, we thank the Authority for issuing this consultation paper on formulation of policy on the subject of Net Neutrality. The consultation paper has provided deeper understanding about various issues relevant in the context of net neutrality, including optimal traffic management tools and plans that may be adopted by TSP's, importance of unrestricted access to internet, transparency and informed choice by users, sanctity of customer privacy and importance of national security. The paper discusses many methods used for regulating Net Neutrality and ways to ensure monitoring of any and all violations of Net Neutrality principles.
2. RJIL strongly supports the basic tenets of Net Neutrality and believes that there should not be any unreasonable discrimination of internet traffic based on content, nature of service etc., subject to aspects such as national security and consumer interest.
3. In the context of the current consultation paper, we would like to highlight to the Authority that several consultations have already been held on various aspects of Net Neutrality and a few decisions have also been taken thereof. We reckon that such earlier decisions would also be aligned with the outcome of this consultation process and overall development of the Net Neutrality policy. All related issues should be looked at in tandem and the principles should be consistent across each.
4. It is often presumed that internet must always work on a 'first-in-first-out' traffic model of packet delivery. However this is not always the case. Networks need to prioritise certain packets, say for essential services or caching servers for particular type of content and need to block certain packets identified as being harmful to the network. Indeed, the Internet has grown, matured and flourished in an open environment characterized by competition, cooperation and adaptation. Taking extreme positions on the principles of Net Neutrality may have adverse implications such as prevention of efficient practices like local cache of content etc.
5. Another aspect to note is that globally the Net Neutrality debate and related policy perspectives have been evolving over time recognising the complexity of the debate. There is no single "one-size-fits-all" approach. Different countries have adopted different approaches. Internationally the principles of 'Net Neutrality' have been majorly shaped by the local experiences and public expectations. Whilst some regulators (e.g. the FCC of USA) had at one time decided that specific net neutrality regulation is necessary to



protect the open nature of the Internet, many countries, including some that have extensively deliberated this topic, have not enacted specific regulation, deciding that no specific regulation is required. Even those markets that have adopted open internet regulation, have often opted for case-by case assessment of such practices. For example, TSPs and end-users are free to conclude commercial agreements under the recently adopted Open Internet Regulation of the European Union, unless such practices are assessed to have a material impact on consumer choice.

6. Different regulators have recommended different approaches for handling Net Neutrality. Some of the key ones are summarised below:

FCC

- ✓ Adopted bright line rules of **no blocking, no throttling and no paid prioritisation** with reasonable traffic management
- ✓ **Existence of specialised services** and case to case evaluation of adherence to the principles of Net Neutrality
- ✓ The new Commission is taking a relook over the Net Neutrality principles adopted. They have gone to the extent of saying that 'Net Neutrality' is overrated and many ongoing investigations in the free data offers have been called off

European Commission

- ✓ In open Internet, all traffic will be treated equally, subject to clearly identified public interest exceptions such as:
 - network security
 - combating child pornography,
 - efficient day-to-day network management by ISP
- ✓ Allowed the offering of specialised services of higher quality, such as Internet TV and new innovative applications

OFCOM

- ✓ Accepted the co-existence of 'best-effort internet' and 'managed service' while also recognizing that any regulatory intervention in this area must be based on careful consideration of the risks of unintended consequences
- ✓ OFCOM recommends to rely on the operation of market forces to address the issues of blocking and discrimination
- ✓ Also states that there are several examples in recent history of internet service providers providing access to a restricted set of services within a 'walled garden', but business models of this kind have not proven to be sustainable in the face of competition from more open forms of internet access
- ✓ For effective action of market forces effective consumer transparency is a prerequisite



7. Globally, regulators are also cognizant of the fact that certain services which are categorized as “Specialized Services” need singular treatment on basis of their requirement for higher standards of quality and network resource requirement. Real time services can be provided separate treatment as long as these services are not supplied at the expense of regular internet.
8. The Authority has rightfully recognised the essentiality of traffic management to protect the quality of consumers’ experience and to run a congestion free network. For better interest of consumers and stakeholders, prudent level of traffic management is important for communication networks. As per GSMA, traffic management will become even more important with the advent and maturing of all-IP mobile networks in which real-time services, such as voice and video calls, and less urgent services, such as email, will all be delivered as packets of data in the same way.
9. Broad principles of Net Neutrality should be evolved before deciding on the governance. However, in case the Authority wishes to recommend a governing structure then a national committee should be structured under the aegis of the Authority which should have representation from various stakeholders (TSPs, content providers, consumer groups etc.) and discuss emerging issues related to Net Neutrality on case to case basis.

Our issue wise responses are provided below.

Q.1 What could be the principles for ensuring non-discriminatory access to content on the Internet, in the Indian context?

RJIL Response:

1. Globally, net neutrality is understood as a design principle of equal treatment of data packets that move across IP networks. It ensures that all end users are able to access the Internet content, applications and services of their choice at the same level of service quality, speed and price, with no priority or degradation based on the type of content, applications or services. Under this view, data is transmitted on a “best effort” basis, with limited exceptions.
2. In view of the same, RJIL strongly supports Net Neutrality. The core principles of Net Neutrality in Indian context will be a rational approach, meeting developmental goals, recognition of the need of traffic management, making available the internet as it is on a minimum level of QoS assurance, availability of all legal content, no gatekeeping, no illegal blocking or throttling, same service same rule principle, no paid prioritization and acceptance of specialised and managed services on same physical broadband medium.



3. The key issues to be considered are connecting the unconnected, supporting innovation at all levels, spread of broadband infrastructure and consumer choice. The guiding principles formed in consideration of all these factors and a basic tenet of light touch regulation and forbearance mechanism will be the key to effective 'Net Neutrality' principles.
4. A truly neutral approach should provide all members of the ecosystem an equal opportunity to innovate and create more value, while delivering the highest quality of services that meet consumer demands. Innovative pricing and business models are required to be promoted by wireless network operators, content providers such that all services are available for consumers at non-discriminatory and affordable prices.
5. We also believe that there should be Internet Neutrality, where the service sold is billed as Internet Access without discriminating based on content. However, this should also not bar offering other non-Internet and specialized services over the same physical broadband access and infrastructure.
6. For evolving a comprehensive outlook on 'Net Neutrality' we may also use the benefit of hindsight and evaluate the impact of 'Net Neutrality' regulations implemented in other countries. We should get insights into the actual benefits accrued from principles or rules that may look good on paper.

Q.2 How should "Internet traffic" and providers of "Internet services" be understood in the NN context?

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

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

Please provide reasons.

RJIL Response:

1. With the increase in number of users of internet, congestion on the IP transport network has increased. IP data network is used by both TSPs/ ISPs to carry voice, video and data traffic. Hence, traffic management or traffic shaping becomes imperative to ensure efficient working of the networks. Internet Traffic was earlier dominated by email and



web browsing, but now it has a broad range of traffic types like video/ music streaming, file transfer protocols, encrypted packets, online gaming VOIP and instant messaging etc. And since some of the services have high degree of sensitivity to packet loss, latency, increased traffic volumes leads to higher level of network congestion. By treating different types of data traffic differently, traffic management allows the performance of services to be managed individually so that the most Quality of Service (QoS) sensitive services such as voice traffic receive better QoS from the network.

2. TSPs/ ISPs being the providers of internet services, should not discriminate between different packets in the same tier in any manner. They should charge the consumers or the end users only once without discriminating between the content providers and content over the internet. The user should be free to send, receive, display, use, post any legal content, application or service on the internet.
3. Specialized services are exclusive high quality and bandwidth services which provide value added services to end users supplementing the benefits of open internet. Specialized services are not generic and earmarked for specific end usage and applications. This kind of specialized services fosters investment and can benefit all stakeholders, specifically end users.
4. Enterprise services are customised as per the requirements of the respective business and is on the basis of the Service Level Agreements between TSPs and Enterprise, therefore, enterprise services are different from public internet services. Since they are in the nature of private networks rather than public communications, they do not affect Net Neutrality. Managed services, which are perceived as enterprise-related services and get the highest priority of QoS along with voice and video. This may be allowed without affecting the minimum guaranteed QoS of “Best Efforts public Internet”. Managed services are a necessary requirement for businesses and enterprises, and suitable exceptions may be made for treatment of such services in the Net Neutrality context.
5. Content providers are linked to the Internet by TSPs/ ISPs. Content Delivery Network (CDN) is now used by many online service providers to move content to the edge of the internet and closer to the end user. It uses the overlay network before being offered for internet access, to prevent the quality of the services being impacted by traffic congestion in the internet core. Some of the third party CDN providers such as Akamai, EdgeCast, Google, Yahoo etc. have developed their own CDNs to deliver their content faster to the end users, whereas some of the CDN providers also get into mutual agreements with large ISPs to improve user experience. RJIL believes that CDN is a normal business activity wherein one service provider offers its CDN to others.



Q.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).**

Please provide reasons.

RJIL Response:

1. Prudent level of traffic management principles (TMPs) is important for any communication network to keep check on congestion and quality of the network and this is in interest of consumers and stakeholders at large.

2. Advanced traffic management techniques and radio access optimization are indispensable to avoid mobile networks congestion, ensure quality of services, and increase network security and to offer mobile broadband services at quality of service levels as demanded by users. Internationally, most major mobile service providers practice traffic management and transparently publish their traffic management technique based on certain basic fundamental principles such as:
 - a. **Transparency:** Transparency with end users on services quality, network management practices and terms and conditions of services to which they are subscribing;
 - b. **Consumers' choice:** To enable access to all legal content and seamless use of all applications and services of consumer's choice;
 - c. **Support for Innovation and new business models:** Effective competition across the internet value chain and the emergence of new business models help generate new revenue streams among the various stakeholders and positively contribute to mobile internet economics. The emergence of new business models and innovation in technologies and services should neither be constrained nor limited;
 - d. **Quality of Service:** To make available assured minimum level of QoS for internet;
 - e. **Promoting Bandwidth Conservation:** Mobile broadband networks bandwidth is finite and limited. Development of 'bandwidth efficient' applications and services is important for sustainable growth of mobile internet. The bandwidth conservation concept is equivalent to 'energy conservation' programs based on 'energy-efficiency labels', applicable to electrical products. Similarly, empowering mobile broadband consumers through transparent and comprehensive information on '*application bandwidth efficiency*' would create a virtuous circle leading to development of increasingly efficient applications in terms of mobile broadband bandwidth consumption.



3. Transparency is critical for any good regulatory regime. TSPs may be mandated to publish the philosophy related to traffic management and various classification and technique employed for traffic management and post that the acceptability should be left to market forces.
4. If at all the same is to be regulated, a narrow approach which postulates what kind of TMPs are illegal or beyond the limits of acceptability or fairness may be used. Specifying prohibitive or harmful activities will help TSPs in safeguarding consumer interests as well as in managing their networks better.
5. On the contrary, a broad approach which entails creating a permissible list of TMPs will be extremely prescriptive and amount to over-regulation, thereby posing a threat to innovation and future development of networks.

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

RJIL Response:

As mentioned in our response to question no 3, we believe that a narrow approach for regulation should be followed.

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

RJIL Response:

1. In narrow approach, a list of all non-reasonable traffic management practices should be listed. TMPs should be classified as non-reasonable when they are unreasonably anti-competitive, cause undue harm to consumers, or impair free use of the internet.
2. Some of the TMPs which are non-reasonable in nature are:
 - Throttling of speed of services offered by a competing operator;



- Blanket filters on some kinds of content (say gaming content);
 - Giving differential access to applications, content or services to CDN or cache facilities and thereby throttling them;
 - Blocking or termination practices that are applied at a transit node without user choice.
3. The Authority anyhow, holds sufficient rights to intervene *suo-moto* in case it feels some undesired practices are taking place and allowing the same may lead to consumer distress or market failure.

Q.6 Should the following be treated as exceptions to any regulation on TMPs?

- (a) Emergency situations and services;
- (b) Restrictions on unlawful content;
- (c) Maintaining security and integrity of the network;
- (d) Services that may be notified in public interest by the Government/ Authority, based on certain criteria; or
- (e) Any other services.

Please elaborate.

RJIL Response:

1. Subject to lawful restrictions, the fundamental right to freedom of expression and non-discriminatory access to the internet should apply. However, to avoid legitimizing of illegal or harmful activities, to ensure efficient handling of spams and to allow users to protect themselves on their own access not affecting others, the above exceptions may be considered reasonable.
2. In addition to above, customer self-care services should also be treated as exception to any regulation on TMPs. These self-care services are in customer interest, and often customers need priority access to these to maintain their services, recharge etc.
3. Digital payment services / financial transactions should also be excluded from any regulation on TMPs, as there is risk of transaction failures and loss to stakeholders in case there is delay in connectivity etc. This would be in line with the Government's push towards digitisation of financial services in the country.



Q.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:

(a) Blocking;

(b) Throttling (for example, how can it be established that a particular application is being throttled?); and

(a) Preferential treatment (for example, how can it be established that preferential treatment is being provided to a particular application?).

RJIL Response:

1. Blocking can be defined as an activity which can take the form of either making it difficult to access or outright restricting certain services or websites on the internet. Throttling is a technique employed to manage traffic and minimize congestion, may be used to degrade (e.g. slow down) certain type of traffic and so affect the quality of content. No paid prioritization means service providers can't charge websites fees in order to give them an advantage over other sites.
2. It is a very difficult exercise to determine whether any degradation in the quality of a broadband service is attributable to blocking, throttling or preferential treatment. Keeping in view the principles of Net Neutrality, the regulator/ government could lay down rules for adequate disclosure and also for what practices can be allowed/ disallowed. A suitable grievance redressal mechanism can also be put in place.
3. Given that there is continuous flow of emerging innovations in applications and services and there is a variety of traffic on the IP transport network, the concept of one size fits all does not work and differentiation becomes an essential function for network management. Legitimate traffic management practices may be allowed but should be "tested" against the core principles of Net Neutrality. General criteria against which these practices can be tested are as follows:
 - i. To allow users to make informed choices and to maintain transparency there may be rules for adequate disclosures to the users about the traffic management policies, tools and intervention practices;
 - ii. Unreasonable traffic management, which is exploitative or anticompetitive in nature, may not be permitted;
 - iii. In general, for legitimate network management, application agnostic control may be used. However, application-specific control within the "Internet traffic" class may not be permitted;
 - iv. Improper (paid or otherwise) prioritization may not be permitted;



- v. Traffic management is complex and specialized field and enough capacity building needs to be done before undertaking such an exercise. Mechanism to minimize frivolous complaints will be desirable.
4. A variety of approaches have been proposed for detecting whether any form of differential traffic management is being applied at some point in the delivery chain by TSPs/ ISPs. However, as per BERC there is no single best tool for monitoring the Net Neutrality violations.

Q.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?

RJIL Response:

1. Increased transparency will provide consumers with a more informed view of the traffic management techniques so that they know how their mobile internet connection is managed in order to deal with congestion. High levels of detail will only serve to confuse most customers. Hence, it is critical that the information is relevant and delivered in a manner which is easily understandable by the end customers.
2. It is important that any informational approaches relating to traffic management are considered in the context of other information disclosure obligations that network operators and ISPs have. The approaches taken internationally vary. Some countries have addressed the issue more specifically. Norway for example promotes general principles of transparency but has not imposed any binding information disclosure obligations. Canada, by contrast, has imposed more prescriptive obligations.
3. Taking into account the advantages and disadvantages of each approach, it is suggested that the approaches are to be used in combination and in optimum proportions.
4. In the Indian context, it would be suitable that the TSPs be mandated to provide the broad principles of traffic management on their websites for the consumption of all concerned, whereas the Authority may seek additional details from TSPs on case to case basis.



Q.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.

RJIL Response:

We submit that there is no requirement of an information disclosure template as discussed in table 5.1. At current stage the broad traffic management practices displayed on the TSP website should suffice.

Q.10 What would be the most effective legal/policy instrument for implementing a NN framework in India?

- (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?**

And

Q.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?**
- (b) What role should the Authority play in its functioning?**

RJIL Response:

1. In India, the telecommunications sector is regulated through a combination of legislations and licensing conditions, and as per the applicable guidelines of Unified License, TSPs/ ISPs are allowed to provide internet access through use of any device/ technology/ methodology.
2. In relation to Net Neutrality, the scope of Internet Service license and the Internet Services authorization under Unified License specifies that the subscriber of Internet services shall have unrestricted access to all content available on Internet except for such content which is restricted by the Licensor or designated authority under law. This provision should suffice along with the Authority formulating the regulatory framework from time to time regarding acceptable practices of 'Net Neutrality'. The Authority's



recommendations can describe the principles and conditions of Net Neutrality and provide applicable criteria to test any violation of the principles of Net Neutrality.

3. A national committee can be structured under the aegis of the Authority which shall deal with the issues related to Net Neutrality on case to case basis. The committee should have representation from various stakeholders (TSPs, content providers, consumer groups etc.) to ensure a more collaborative approach. The committee will have recommendatory powers.

Q.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:

- (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).

RJIL Response:

Identifying violations of NN will require robust monitoring and information seeking approach. While transparency with respect to TMPs is critical, the need of the hour is to adopt a collaborative approach in the dynamic market space. The committee can have basic learning from international experience and it can focus on collection of information from users through complaints, consumer advocacy reports, etc. It will be more prudent to identify the probable challenges as we go along the way.

Q.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?

RJIL Response:

1. Technological advances can be disruptive and cost for not being prepared for such disruptive challenges can be steep. Innovation has to be promoted and the endeavor in policy approach should be to identify and eliminate actions that inhibit the innovation abilities inherent in an open Internet. Innovation happens at the edge of the network (content creation) and also on the network side. Therefore the Authority should consider innovation as an important aspect and should promote it without creating any silos.



2. The forward march of technology cannot be ignored. Regulators have the onerous task of ensuring that the transition is managed so as to balance various competing objectives in an adroit manner.
3. In line with the technical advancements, the regulatory framework can be reviewed from time to time. Some of the suggestions that can be adopted to address the issue are:
 - a. Substantive engagement in discussions with experts and stakeholders, taking timely action of referring issues to concerned bodies and taking informed decisions based on the recommendations;
 - b. Training and skill development on technical aspects, governance, policy, law and other related areas;
 - c. Setting up of team of experts to deal with the complexities of the digital world.
4. The policy should also be structured such that amendments can be made with alacrity as there are technological advancements.

Q.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.

RJIL Response:

1. With technological development, the communications sector has evolved from natural monopoly to a competitive sector. Multitude of devices for connectivity has emerged where issues of inter-operable standards have arisen. The regulatory framework has to embrace the fast-changing trends and be suitably structured so as to flexibly adjust to the requirements of an evolving communications sector.
2. While it is important to deliver a uniform quality of service to everyone, customer's experience on account of his type of device, browser, operating system is beyond the control of TSPs and therefore these aspects should not be accounted for in the NN context. Any deficiency of service on account of device, browser, operating system should be outside the purview of NN.

