Association of Unified Telecom Service Providers of India

AUSPI/12/2017/012

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Shri Asit Kadayan,
Advisor (Qos),
Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
JawaharLal Nehru Marg,
New Delhi - 110002.

Subject: **AUSPI's Response to the TRAI's Consultation Paper on 'Net Neutrality'**

Dear Sir

Please find attached AUSPI's Response to the TRAI Consultation Paper on 'Net Neutrality' for your consideration.

Thanking you,

Yours sincerely,

Ashok Sud
Secretary General
Mob: 9312941515

Encl: As above

Copy to :

1. **Shri R S Sharma, Chairman, TRAI**
2. **Shri Anil Kaushal, Member, TRAI**
3. **Shri Sudhir Gupta, Secretary, TRAI**

B-601, Gauri Sadan, 5, Hailey Road, New Delhi - 110 001
Tel. : 23358585, 23358989 Fax : 23327397
E-mail : auspi@auspi.in Web : www.auspi.in

AUSPI's Response to the TRAI Consultation Paper on 'Net Neutrality'

Preamble

A. Uniqueness of Indian Telecom Landscape

1. The telecom sector in India has seen phenomenal growth during the last two decades since it was thrown open for private sector participation. One of the major learnings through this growth has been that the Indian telecom is distinguished by various factors [like customer characteristics, competition, affordability etc.] that made it unique from other telecom markets across the globe.

2. Due to the unparalleled uniqueness of telecom sector in our country, Net Neutrality regulations have to be tailor made for Indian telecom customer, security environment and the industry. Adopting regulations based on other telecom markets would certainly not be prudent for our country.

B. Net Neutrality encompasses all stake holder- not Just TSP

1. Internet being an eco-system that encompasses different stakeholders such as access services, provisioning content services and enabling entities (device manufactures) and the users. Net Neutrality, therefore, cannot and should not be seen in the context of TSPs alone, but its scope has to be expanded to include all other stakeholders, especially the content providers. Net Neutrality should not be seen to force the TSPs into providing 'Settlement Free Peering' (SFP) as more than 50% traffic is that of video. **'Net Neutrality' should ideally be based on category of content instead of its treatment by the TSPs.** The boundaries for legitimate handling / treatment of each type of traffic can then be drawn more clearly.

2. We feel that the **content be classified as follows:**

   a. **Non-Commercial:** Content that carries 'No Advertisements', 'No Enticements', and is provided at 'No Charges' to the consumers. E.g. traffic related to,
      i. Governance.
      ii. Education.
      iii. News only.
      iv. Health and Hygiene.
      v. Safety and Security.

b. **Commercial (Without Advertisements):** This can be considered to be traffic to and from,
   a. Company websites carrying no adverts, i.e. for information only.
   b. Commerce / Services sites.

c. **Commercial (With Advertisements):**
   a. Family entertainment.
   b. Adult entertainment.

TSPs should be obligated to total adherence to Net Neutrality principles and to ensure high QoS experience and fairness to the content of Category (a) and (b) without any compromise.

As regards traffic from category (c), the TSPs should be allowed to have commercial arrangement with them without compromising the experience on the other categories listed in the previous paragraph.

Further, within the content classifications suggested above, from QoS perspective, it is imperative that the traffic be further classified as 'Video' and 'Non Video' and the TSPs be permitted to have commercial arrangements for 'Commercial Video' traffic for ensuring adequate network resource provisioning and QoS for other applications.

Our detailed responses to the specific issues raised by TRAI in this consultation paper are as follows:

Q1. What could be the principles for ensuring non-discriminatory access to content on the Internet, in the Indian context? [See Chapter 4]

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Q2. How should "Internet traffic" and providers of "Internet services" be understood in the NN context? [See Chapter 3]
(a) Should certain types of specialised services, enterprise solutions, Internet of Things, etc be excluded from its scope? How should such terms be defined?
(b) How should services provided by content delivery networks and direct interconnection arrangements be treated?
Please provide reasons.

AUSPI's Response

1. 'Internet' is the global system of interconnected computer networks that uses the Internet protocol suite (TCP/IP) to link devices worldwide and is an eco-system in itself which encompasses different stakeholders such as (a) Access service providers (TSPs and ISPs), (b) Content services provisioning entities (Application or Content Providers/Aggregators/ Distributors), (c) Entities provisioning Interconnection between Content

services provisioning entities (NLDOs/ILDOs), (d) Device Manufactures i.e. service utilisation enabling entities and (e) Services subscription entities, i.e the users.

2. 'Internet Traffic' is the data traffic that is exchanged/transported between/ generated by any of these entities. 'Internet Services' would be primarily the services provided by any of the Access services providers (TSPs and ISPs), Content services provisioning entities (Application or Content Providers/Aggregators/Distributors) and Entities provisioning Interconnection between Content services provisioning entities (NLDOs / ILDOs).

3. In the context of Net Neutrality, it is important that the relationship amongst all the above mentioned stakeholders remains non-discriminatory. For the non-discriminatory access to the content over the internet, it is imperative that all the stakeholders should ensure that they should not indulge in (a) Blocking, (b) Throttling and (c) Prioritization of any content / stakeholder / users on a selective basis.

4. **The core principles of Net Neutrality be defined for ensuring non-discriminatory access to content on the Internet or Net Neutrality as (a) No Blocking, (b) No Throttling and (c) No Prioritization for any content / stakeholder in the internet eco-system / user over the network.**

5. Of late, two additional issues viz (a) "No Inspection of the data packets" and (b) "Pricing of data services" have also gained importance to be included as part of the core principles of Net Neutrality. **It is submitted that 'Packet Inspections' whether 'stored' or 'in motion' are more of a privacy / data protection concern and therefore should not be part of the net neutrality discussion.**

6. Affordability of data services is the driving force /theme behind internet eco-system for provisioning of services. If the content services providers have provisioned their services free to their customers, the device OEMs on their part have been bringing better handsets at lower prices for the masses. In line with this requirement of increasing the affordability of data services, the TSPs had launched innovative tariff structures for the data services, including free access to a collection of websites, for the masses.

7. **Exclusion from Core Principles of Net Neutrality**

We agree to the exceptions to the above mentioned Net Neutrality core principles, as follows:

a. The existing fair usage policy of reduction of access speed beyond a certain data usage.

b. Congestion management for,

   i. Ensuring that the application latency is maintained within permissible limits at all times.

   ii. Controlling any sabotage of the network through any kind of malpractice, such as flooding, DDOS attack, Malware, etc, which affects services for a large number of customers.

c. Lawful restrictions directed to be imposed by the Government / LEAs.

d. Prioritization for communications for emergency and disaster management services.

e. **Traffic management of Enterprise access services.** These services are similar to bulk services which are being used by enterprises for their business.

f. **Traffic management of Internet of Things (IoT) / Machine 2 Machine (M2M) communications.** In certain IoT / M2M services, say like healthcare, etc, the M2M device(s) are often required to report their presence / reachability and serviceability at regular short duration intervals as well as receive instructions in an emergency situation and hence require that their traffic is prioritized. On the other hand, most of IoT / M2M services are not time critical and hence can be subjected to limitations for better QoS for the regular data traffic.

8. **Treatment of Content Delivery Networks (CDNs)**

The unprecedented increase/expected increase in the volume of typical video & HD video traffic will put enormous strain on the operator's infrastructure in terms of both engineering and operations. This kind of traffic is capable of over loading the networks and interconnects capacities needed for delivering content across networks. **Ensuring TSP's manage event based video traffic based on their own classification, will ensure overall better quality of internet experience and should not be considered as a violation of net neutrality guidelines. It is, therefore, is strongly suggested that the CDNs and their video traffic should be considered as an exception to the 'prioritization' core principle for Net Neutrality and paid or otherwise should be allowed for video traffic.**

9. Direct Interconnection / Peering Arrangements

The foreign Content Providers / Aggregators / Distributors, almost without exception, leverage their dominant traffic imbalance to get preferential domestic Internet peering termed as 'Settlement Free Peering (SFP)' on their own terms, typically free of cost. Such SFP arrangement, denies the government the revenue share it gets today from peering arrangements between TSPs and TSPs and Indian Content Providers/Aggregators/ Distributors and secondly and pose security risks as they facilitate the bypassing of the legitimate blocking rules that DoT directs to be implement at the gateways of TSPs / Large ISPs. Therefore, **for ensuring better affordability of Indian content for the Indian users and from security point of view, there is a need for the authority to regulate the peering of the foreign content providers / aggregators /distributors with the Indian TSPs.**

Q3. In the Indian context, which of the following regulatory approaches, would be preferable: [See Chapter 3]
(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.

AUSPI's Response

In view of the foregoing discussion in response to questions 1 and 2, it is suggested that a balanced mix of two approaches as enunciated in the consultation paper viz, the 'Narrow Approach' defining that No blocking, No Throttling and No Prioritization complemented with the 'Broad Approach' defining the permissible exclusions would be most preferable in the Indian context.

Q4. If a broad regulatory approach, as suggested in Q3, is to be followed: [See Chapter 3]

(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?

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

AUSPI's Response

Broad regulatory approach in para 3.4.1 of the consultation paper should be regarded as reasonable TMPs. Therefore, the traffic needs to be categorised and objectively defined based on the application which is generating that

traffic. Application-specific discrimination within a category of traffic should not be viewed more strictly than discrimination between categories.

1. Any action taken by the TSPs for ensuring better QoS for all of its customers, without providing/offering any preferential treatment to any Content/at the cost of any Content, without any commercial considerations, should be considered as reasonable TMP.

2. Within the ambit of core principles of Net Neutrality, as stipulated earlier in response to question numbers 1 & 2, no application specific discrimination should be permitted for traffic generated by similar applications, viz, the traffic of two applications, streaming video for entertainment purposes, has to be treated equally without any differentiation amongst them.

3. On the other hand, there is definitely a need to differentiate between traffic generated by different categories of applications. The traffic handling standards, as defined by various international standardization bodies such as 3 GPP etc, should be the norm for traffic generated by different categories of applications.

Q4. (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?

AUSPI's Response

1. **Wireless Broadband Connectivity:** The throughput for a wireless connectivity is limited by the spectrum available with the operator. However, the TSPs set up the network management parameters for providing the best QoS to all their customers without any discrimination / differentiation. Permitting user activated preferential treatment of particular content would potentially disturb the optimal QoS provisioning settings of the network and lead to QoS issues for other customers. It is envisaged that such tools would form part of the default applications in handsets and can possibly be used as a differentiator similar to the RAM and processors of the user's devices.

2. **Wireline Broadband Connectivity:** Differential throughput data packs are permitted to be sold as legitimate data packs for all customers subscribing to wireline broadband services. The network management parameters are therefore, setup based on the experience of subscription of various throughput data packs. Customer should not be permitted to activate preferential higher throughput when they go for cheaper data packs that officially offer lower throughput and exercise their options for increasing the same.

Q5. *If a narrow approach, as suggested in Q3, is to be followed what should be regarded as non-reasonable TMPs? [See Chapter 3]*

AUSPI's Response

Any Blocking, Throttling and Prioritization of traffic due to commercial considerations / non-commercial yet malicious anticompetitive intent that impedes on the QoS being provisioned for a particular content / being provided to other subscribers should be regarded as non-reasonable TMPs.

Q6. *Should the following be treated as exceptions to any regulation on TMPs? [See Chapter 3](a) Emergency situations and services;*
(b) Restrictions on unlawful content;
(c) Maintaining security and integrity of the network;
(d) Services that may be noticed in public interest by the Government/ Authority, based on certain criteria; or
(e) Any other services.
Please elaborate.

AUSPI's Response

Yes, (a) Emergency situations and services, (b) Restrictions on unlawful content and (c) Maintaining security and integrity of the network, should be treated as exceptions to any regulation on TMPs.

Regarding (d), we do not recommend treatment as exceptions to any regulation on TMPs for 'Services that may be noticed in public interest by the Government/Authority based on certain criteria' as most of the public interest services are either subsidised or paid for by the government. A similar approach is recommended to be adopted for digital services as well.

Q7. *How should the following practices be defined and what are the tests, thresholds and technical tools that can be adopted to detect their deployment: [See Chapter 4]*

(a) Blocking;

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

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

AUSPI's Response

1. **Practices defined**

   a. **Blocking** - Any unlawful (i.e. not authorised by the licensee) obstruction to access a particular URL / URI of Non-Commercial (that does not bear any advertisements), Commercial (Providing Information about a company but without any advertisements) and Commercial (Commerce/Services) content, by the TSP in exchange for commercial considerations / anti-competitive agreements either with a third party or otherwise, should be considered as 'Blocking'.

   b. **Throttling** - Any intentional (unless authorised by the licensee) degradation/Slow down/Alter/Restrict / Interfere with /Discriminate/ Impair/hinder the audio / video stream or the time taken to access a particular URL / URI of Non-Commercial (that does not bear any advertisements), Commercial (Providing Information about a company but without any advertisements) and Commercial (Commerce/ Services) content, by the TSP in exchange for commercial considerations / anti-competitive agreements either with a third party or otherwise, should be considered as 'Throttling'.

   c. **Prioritising/ Preferential Treatment** - Any intentional (unless authorised by the licensee) acceleration of the audio / video stream or the time taken to access a particular URL/URI of Non-Commercial (that does not bear any advertisements), Commercial (Providing Information about a company but without any advertisements) and Commercial (Commerce/Services) content, by the TSP in exchange for commercial considerations/anti-competitive agreements either with a third party or otherwise, should be considered as 'Prioritising / Preferential Treatment'.

2. **Tests, Thresholds and Technical Tools that can be adopted to detect their Deployment**

   Effective monitoring for violations of Net Neutrality is possible only and only if the audit of one stakeholder is correlated and corroborated with the audit of another stake holder. If an App claims to be getting throttled in a particular TSP's network, then verification of the gateway logs of only the TSP shall not suffice. The findings of the analysis of the Server logs of the App provider shall have to be correlated and corroborated with the similar audit findings of the logs of the TSPs logs and other intermediary NLD / ILD networks.

While site **audit of configurations of the Network Elements of the TSPs / ISP should be the last resort,** following steps are recommended as testing tools for monitoring indulgence of the TSPs/ISPs in non NN practices.

a. TRAI should 'crowd source' the speeds / access of various sites from the connections provided by various TSP/TSPs.

b. TRAI can start an APP which can be used to test various URLs /URIs / IP addresses from the connections provided by TSP/ISPs. The results of these can go to a TRAI repository.

c. The tests must be carried out over a period of atleast 3 months to arrive at a credible suspicion of violation of Net Neutrality principles. Also, these tests should be utilized to arrive at the benchmark for the time taken for accessing / streaming for that particular content.

d. The data stored in such repository can be used to check the reachability of any content vis-à-vis other similar content by the same provider/ same content from different providers.

e. In case the results are outside the calculated thresholds on a consistent basis both, the concerned TSP/ISP and the content provider should be asked to show cause and explain/correct the situation within a predefined time and also provide the logs and capacity of their respective NE/Servers.

f. Only based on the outcome of collection of data, its analysis, correlation and corroboration can the TSP/ISP judged as a violator of Net Neutrality principles.

3. Given the fact that internet adoption is growing by leaps and bounds in India, the need for ensuring adequate QoS and its monitoring is imperative. It is felt that **it would be ideal to have a regulation in place that mandates maintenance of content closer to / within the TSPs network. The content provider's setup too should be mandated to have adequate capacity and use the CDN services of the domestic TSPs.**

Q8. Which of the following models of transparency would be preferred in the Indian context:[See Chapter 5]

(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?

AUSPI's Response

A combination of all the suggested models of transparency viz, Disclosures provided directly by a TSP to its consumers, Disclosures to the regulator, Disclosures to the general public would be preferred in the Indian context. These disclosures can be made on the respective website of the TSPs.

The trigger for publishing these could be any change / amendment in the earlier published TMPs. The change could be TSP initiated for valid traffic management or regulator directed.

The frequency for publishing these disclosures should be within 3 days of the TMPs being amended for any reason.

Q10. What would be the most effective legal / policy instrument for implementing a NN framework in India? [See Chapter 6]

(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?

AUSPI's Response

Effectiveness and balanced approach of TRAI for regulating, monitoring and supervising the telecom sector has been proved beyond any doubt and the same should continue for implementing a Net Neutrality framework in India. Promulgation of regulations by TRAI would be the most effective legal / policy instrument for implementing a Net Neutrality framework in India. Net Neutrality primarily being a QoS issue, TRAI is adequately empowered to take necessary actions in case of any detected violation.

Q10 (c): If the Authority opts for QoS regulation on this subject, what should be the scope of such regulations?

AUSPI's Response

As brought out in AUSPI's Response to questions 1 and 2, in the context of Net Neutrality, it is important that the interdependent networking relationship amongst all the stakeholders remains unbiased or neutral or non-discriminatory. Hence, **the scope of QoS regulations, for the Net Neutrality framework, shall have to include the regulation of QoS of all the stakeholders of the Net Neutrality eco-system.**

Q11. *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).

AUSPI's Response

The licensed entities (TSPs) are mandated to host their data within India and subject the same to audit by TRAI. Therefore, we envisage no challenges in monitoring for violations of any Net Neutrality framework on account of disclosures and information from TSPs.

TRAI is already getting the feedback on data speeds being offered by various TSPs, from the customers, through its 'MySpeed' App. Similar App could be provided for testing of data download speed from a particular app.

The existing customer surveys being conducted by TRAI shall also provide the requisite feedback to the Authority.

India being one of the largest consumers of internet services is presently a net exporter of information. From monitoring perspective, it is important that the geographic area of hosted facility of the App co-operates with the auditors appointed by TRAI. This could prove to be a major challenge for establishing the veracity of claims of violation of Net Neutrality principles.

Q12. *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? [See Chapter 6]*
(a) What should be its design and functions?
(b) What role should the Authority play in its functioning?

AUSPI's Response

A collaborative approach is not recommended. In our view, as clearly laid down in our response above, Net Neutrality is a QoS issue and TRAI is adequately empowered to initiate suitable regulatory mechanism.

The TRAI Act stipulates that the functions of the Authority shall be:

Quote

"11(b)(v) lay-down the standards of quality of service to be provided by the service providers and ensure the quality of service and conduct the periodical survey of such service provided by the service providers so as to protect interest of the consumers of telecommunication services;

Unquote

Therefore, it needs to be regulated through a regular monitoring authority. The Authority shall have to exercise its executive powers for deciding any alleged violations from any of the stakeholders like content provider, TSPs etc.

Q13. What mechanisms could be deployed so that the NN policy / regulatory framework may be updated on account of evolution of technology and use cases? [See Chapter 6]

AUSPI's Response

Net Neutrality being a QoS issue, it is promulgation as a technology agnostic guideline can be adopted as a mechanism to be deployed so that the Net Neutrality policy / regulatory framework may be updated on account of evolution of technology and use cases.

Q9. 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. [See Chapter 5]

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Q14. 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.[See Chapter 4]?

AUSPI's Response

1. We are in agreement with the disclosure fields mentioned in the Information Disclosure Template at Table 5.1 of the consultation paper and suggest that the same be published on the website / POS of the respective TSPs.

2. There are many challenges in the wireless domain due to random behaviour exhibited by the wireless channels. Even with the best of the

handset, most advanced browser and OS, a customer can experience poor QoS due to the vagaries of the wireless data services environment.

It is, therefore, suggested that the Standard of Quality of Service for wireless data services (Amendment) Regulations, 2014 (10 of 2014) be amended to permit the operators to put a disclaimer, as given below, for their broadband services.

> *"Wireless Broadband Services are subject to risks of simultaneous availability of ideal conditions of weather, a subscriber's handset, subscriber's location, the website that the subscriber is accessing and the loading of the network. As with any investment in securities, data speeds of wireless services can go up or down depending on the factors and forces, as listed above, and the operator is not in a position to provide any assurance or guarantee that the stated ideal speed of data services will be achieved.*
>
> *Please read the ideal service conditions carefully on the Service Provider's Website before subscribing to the services. The subscriber may also consult TRAI's 'MySpeed' App for inputs on the Service Provider's services. However, past performance of the Service Provider in a Service Area is not indicative of future Quality of Service. Please consider your specific connectivity requirements before subscribing to the services."*

3. The operators can also be permitted to declare 'Ideal QoS delivery requirements' (Theoretical) for broadband services and the conditions under which the same is achievable can be published on the individual operator's website.

A suggested list of parameters and their ideal conditions is listed at the **Appendix** to this response.

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Appendix

IDEAL CONDITIONS OF PARAMETERS AFFECTING DELIVERY OF BROADBAND SERVICES THROUGH WIRELESS CHANNELS

Throughput (Mbps)		**1**	**2**	**5**	**2**	**4**	**7**	**2**	**4**	**7**	**5**	**8**	**12**
Weather		Sunny											
Subscriber's Handset	Original Equipment Manufacturer (OEM)	Reputed											
	Authenticity of IMEI	Authentic											
	RAM	Minimum 2 GB											
	No of Application(s) Active Simultaneously	1											
	Sensitivity (dbm)	-117			-120								
	Handset Capability	Cat 6											
	64 QAM	Support required											
	Carrier Aggregation (CA)	Support required											
	Subscription Profile	No Throttling on speed											
Subscriber's Location	Nearness to the BTS	Near to 100 Mtr											
	Number of subscribers accessing the net simultaneously from 1 Node-B/E Node -B	12	7	2	15	8	4	15	8	4	18	11	7
ebsite Server	Number of hops from Service Provider's gateway	1											
	Number of subscribers accessing the site simultaneously	Accesing server should not have congestion , we could not define this number											
NETWORK QUALITY	CQI	25 and above			22 and above								
	RSRP	better than-75			better than-75								
	Backhaul	16 Mbps			100 Mbps								

* All conditions are to be satisfied simultaneously for achieving the ideal data speed.