BROADBAND INDIA FORUM
"Think Tank for Digital Transformation"

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

Preamble

At the outset, we would like to state that BIF fully supports Net Neutrality and firmly believes that access should be made available to all on a non-discriminatory manner. BIF believes that while legitimate traffic management practices may be allowed but they should be "tested" against the core principles of net neutrality.

Prioritization is a core aspect of internet access right from its earliest days and different types of services such as e-mail vis-a-vis IP telephony vis-a-vis video vis-à-vis PPDR (Public Protection and Disaster Relief) services have had different QOS and speed requirements for the desired end-user Quality of Experience. In the context of these differing requirements, traffic management is an important tool available to Internet Service Providers (**ISPs**) for providing consumer benefit and not for consumer harm. Therefore, traffic management practices (**TMPs**) that comply with the core principles of net neutrality should be permitted to help network operators to maintain and improve the quality of service provided to end users.

In 2017, senior researchers from the University of Michigan, United States of America and the University of Freiburg, Germany, analyzed the effects of network neutrality policies on innovation dynamics[1]. The results of their study, along with other studies like it are relevant especially in the context of emerging communications technologies such as 5G and the Internet of Things. They found that increasing heterogeneity of emerging applications, services, and uses within an all-IP network environment created new challenges. Frias & Martinez (2017) found strong potential conflicts between strict net neutrality regulation and future 5G services, particularly those involving network virtualisation. They argue that in complex technological environments that require network 'slices' to be created and pricing to be determined on-demand and according to the Quality of Service (QoS) required by specific applications at any given time, strict net neutrality can be difficult to observe. In this scenario, it becomes critical to strengthen the existing prohibition on discriminatory practices by providing additional guidance on acceptable TMPs, which address consumer benefit and innovation, while maintaining the essential nature of open Internet.

Issues for Consultation

Q1. A) What are the broad types of practices currently deployed by the Access Providers (APs) to manage traffic?

BIF Response

Traffic management encompasses a range of techniques used by network operators, ISPs to ensure the smooth flow of data traffic across the networks between the end users and content /service providers. Network operators and ISPs use traffic management to minimize the

incidence and impacts of congestion, ensuring that as many users as possible get the best online experience possible. Examples of current and anticipated network management practices include:

i. Management of congestion:
ii. Blocking spam, malware, denial of service attacks and other security threats to the network or to user devices.
iii. Blocking sites which are unsuitable for minors as part of parental controls tools chosen by the end user, either at the network or device level
iv. Ensuring that time sensitive services such as voice, video, online gaming and enterprise services can be delivered in a way which ensures optimal performance of those applications (without calls dropping, buffering videos and time lags in games)
v. Peak Load Management
vi. Implementing data caps that have been accepted by the end user as part of their Internet data plan
vii. Lawful restrictions directed to be imposed by the Government/ Legal court orders/LEA agencies.
viii. Prioritization for communications for emergency and disaster management services

We believe that traffic management practices, including those listed above, may be implemented by ISPs as long as they do not result in denying access to the internet to any authentic consumer or a group of consumers, while ensuring adherence to QoS and desired SLA with them.

In making regulations on traffic management, the Telecom Regulatory Authority of India (Authority) should perhaps consider a broad approach that defines reasonable TMPs and sets out clear guidelines on how the reasonableness of traffic management will be determined, potentially identifying illustrative practices that are likely to be reasonable or unreasonable, by emphasising the need for objective technical standards, but without attempting to dictate network configurations or direct practices.

Given the fast-paced nature of developments, it may be more prudent for the Authority to monitor the ecosystem and provide targeted guidance when needed, instead of attempting to provide detailed regulations or practices, and additionally keep them up-to-date. The definitions, tests, tools and thresholds relating to TMPs should ideally be the subject matter of working groups or committees set up under Authority.

The traffic categories should typically be defined based on objective quality of service requirements. Accordingly, any traffic management measures that arise out of commercial rather than technical considerations should not be considered reasonable. Additionally, there should be no blocking or throttling of certain types of content or paid prioritization.

TRAI should refer to guidance notes prepared by regulators in other jurisdictions, including the Body of European Regulators for Electronic Communications (BEREC).

Specialized services, however, should be exempt from the principles of discriminatory treatment. These services should be defined using parameters that avoid evasion of net neutrality protections, such as - services requiring guaranteed QoS and not used to reach all (or substantially all) parts of **the** Internet (e.g. M2M network, healthcare networks). While these services would be delivered over the internet infrastructure, they would not be akin to retail internet access service that consumers receive.

Extraordinary situations such as access emergency services, legal restrictions, and security and **network** integrity may be treated as exceptions to any regulation on TMPs. To avoid regulatory uncertainty, the Authority may consider laying down the parameters within which one of these limited exceptions to TMPs can be issued. With respect to any public body having the ability to notify certain services that are in public interest as exceptions to TMPs, there should be clarity on which body can issue such exceptions, and under which legislative or executive authority.

B) Out of these practices, which ones can be considered as reasonable from perspective of Net Neutrality?

BIF Response

As generally agreed, list of TMPs must conform to basic requirements of reasonability, the restrictions on traffic should be proportionate (especially during natural disasters, emergency situations, etc) transient (especially during matches in stadiums due to environment factors & ambience) and transparent (information provided to user to be crisp and accurate and also in a timely manner). However, determination of technical measures of proportionate, temporary or transient nature to deal with network related issues cannot always be predicted and are usually known from experience. Also, for similar issues, the reasonable measures may be different for different technologies. An example would be reasonable time needed to resolve congestion in 3G networks as compared to 4G networks using throttling would require different measures. Hence, it may not be feasible to prepare a fixed list of TMPs in advance, or even to continuously update the measures and practices from time to time through continuous monitoring and observation of the dynamic practices followed by TSPs for traffic management. BIF believes that measures taken for traffic congestion mitigation will be considered as reasonable from perspective of Net Neutrality. In this context, BIF recommends that Indian regulators should adopt the UK telecom regulator, OfCom's model, in which ISPs are required to adopt transparency measures by way of publishing their TMP policy and mention the impact of TMPs on user experience in user agreements.

C) Whether list of Traffic Management Practises (TMPs) can be prepared in advance or it would be required to update it from time to time?

BIF Response

BIF believes that the list of TMP may be subjected to change from time to time as we have emerging technologies with their deployment standards yet to be rolled out in India like IoT, AI, etc which will depend on the ability of the carrier network of Access providers. It is

estimated that there will be 41.6 billion connected IoT devices, or "things," generating 79.4 zettabytes (ZB) of data by 2025. As the number of connected IoT devices grows, the amount of data generated by these devices will also grow.

The four general assessment criteria to determine what constitutes as "reasonable" with respect to traffic management, can prove helpful as a starting point. BEREC identified non-discrimination of content and application providers, end-user control, application agnosticism and proportionality[2] to be the key guiding principles to assess the reasonableness of traffic management practices. Exceptions to the above are certainly applicable in the EU, as they should be anywhere else the subject is currently under review. Typically, (1) orders given in statutory bodies of law and court decisions, (2) measures to ensure the integrity and security of the network, (3) the prevention of unsolicited communication, (4) measures based on an explicit request from the end user and (5) handling of special situations relating to congestion management are considered reasonable exceptions.

In light of the dynamic nature of TMPs, ISPs should not be required to prepare a list of TMPs and should instead be required to prepare a TMP policy and include transparency provisions in end user agreements.

D) If later is yes, then what framework would be required to be established by Multi-Stakeholder Body to keep it up to date? Please suggest with justification

BIF RESPONSE:

As discussed below, BIF recommends that there is no need for a multi-stakeholder body (**MSB**).

Q2. Whether impact of TMPs on consumer's experience can be interpreted from its name and short description about it or detailed technical description would be required to interpret it in objective and unambiguous manner? In case of detail technical description, what framework need to be adopted by Multi-Stakeholder Body to document it. Please suggest with justification.

BIF RESPONSE

One of the major challenges is that consumers are not aware of the impact of such practices and processes adopted by the operators as well as impact of performance of device, type of link, quality of the RF link, SW version of the Operating System of the device, etc. on their overall experience. Consumer education & awareness always helps. As mentioned in Response to Q1 above, a simple disclosure format included within the end user agreements with simple key facts which seeks to provide accessible and comparable disclosures to end users of different service packages may be considered under this framework.

To ensure accountability and auditability, access providers must be able to clearly and in simple language demonstrate to the users and public that they are in compliance with net neutrality principles and their TMPs meet the reasonability and proportionality criteria, especially as Consumers may not understand technical jargon and detailed technical descriptions. The goal for providing information to customers regarding TMPs should be to empower the consumers to make informed decisions about which services to purchase and also hold access providers accountable to their own descriptions of their network management practices.

Q3. What set up need to be established to detect violations of Net Neutrality, whether it should be crowd source based, sample field measurements, probe based, audit of processes carried out by access providers or combination of above? How to avoid false positives and false negative while collecting samples and interpreting Net Neutrality violations? Please suggest with justification.

BIF RESPONSE

To detect violations of Net Neutrality, existing mechanisms as well as adoption of a mechanism such as the QoS Audit of TMPs, in case of a probe, may be considered for measurement of NN violations.
We recommend a complaint and probe-based approach for detection of NN violation. This includes monitoring consumer complaints, crowd sourcing of data for conducting probe requesting information from internet service provider for completion of the probe. . Since DoT is already empowered to conduct probe, we believe there is no additional set up required for the same.

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

AND

Q.7 What should be the guiding principles and structure of governance of Multi-stakeholder Body? What may be the roles and responsibilities of persons at different

positions such as chairing the organisation or working groups, governing the functioning, steering the work etc. Please suggest with justification.

BIF RESPONSE

F. No. 304-2/2016-QOS -----The Telecom Regulatory Authority of India , established under sub-section (1) of Section 3 of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997) (herein referred to as the TRAI Act) has been entrusted with discharge of certain functions, inter alia, to regulate the telecommunication services; to ensure compliance of terms and conditions of license; 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 services provider by the service providers so as to protect the interest of consumers of telecommunication service.

Also, DoT following the recommendation of TRAI, had already issued a letter on July 31, 2018 amending existing telecom license agreements (UL, VNO license, UASL, CMTS) to incorporate the principles of non-discriminatory treatment of content, along with exceptions as necessary and to ensure compliance with net neutrality principles, by introducing appropriate disclosure and transparency requirements. This has also been reflected in National Digital Communications Policy 2018 notified on October 22, 2018. In effect, DoT will be monitoring and enforcing the net neutrality principles as they are now included in the licenses.

Unified Licences by DoT for Regulatory Framework on "Net Neutrality" in Part-II Chapter IX Clause no. 2.3 states that:

"Principle of non-discriminatory treatment, definition of specialised services and reasonable traffic management and other exceptions:

i. *A Licensee providing Internet Access Service shall not engage in any discriminatory treatment of content, including based on the sender or receiver, the protocols being used or the user equipment.*
ii. *The Licensee is prohibited from entering into any arrangement, agreement or contact, by whatever name called, with any person, natural or legal, that has the effect of discriminatory treatment of content.*
iii. *nothing contained in this provision shall restrict:*

a) *The provision of any Specialised Service by a Licensee, provided that:*

- *The Specialised Services are not usable or offered as a replacement for Internet Access Service; and*

- *The provision of the Specialised Services is not detrimental to the availability and overall quality of Internet Access Service.*

b) *Any measure adopted by the Licensee that are proportionate, transient and transparent in nature and fall under any of the following categories:*

- *Reasonable traffic management practices as may be specified from time to time;*
- *Provision of emergency services or any services provided during time of grave public emergency, as per the process laid down by the Licensor/TRAI;*
- *Implementation of any order of a court or direction issued by the Government, in accordance with law;*
- *Measures taken in pursuance of preserving the integrity and security of the network and equipment; and*
- *Measures taken in pursuance of an international treaty, as may be specified by the Government.*

iv. *For the purpose of this provision:*

a) *Content" shall include all content, applications, services and any other data, including its end-point information, which can be accessed or transmitted over the Internet.*

b) *"Discriminatory treatment" shall include any form of discrimination, restriction or interference in the treatment of content, including practices like blocking, degrading, slowing down or granting preferential speeds or treatment to any content.*

c) *"Specialised services" shall mean services other than Internet Access Services that are optimised for specific content, protocols or user equipment, where the optimisation is necessary in order to meet specific quality of service requirements.*

Provided that the Licensees is authorised to provide such services in accordance with the provisions contained in this license, as modifiedfrom time to time."

With the DoT & TRAI already fulfilling this functions, we do not see the need for an additional institutional body. Not only will this add to the bureaucratic process but could cause uncertainty in enforcement and chaos in the industry. Adding a one more layer would lead to additional cost burden for the Industry and also deteriorate cost/benefit ratio for the end consumers.

DoT consists of 34 TERM Cells which enforces the compliance related to QoS Regulations for various ISPs in India in various states. Therefore, BIF is of the view that there is no need for MSB to implement net neutrality. Since the MSB is required only for an advisory role, this primary function can be executed by industry bodies that are in existence or may emerge in future. Some views envisage that the MSB should have functions such as performing investigation or recommending standards or raising consumer awareness. However, it is contended that all these functions are either already under the domain of the DoT TERM Cells

or TRAI or can be performed by the Government in consultation with the industry bodies. TERM Cell may compile and prepare the final report after checking all the compliance factors and further submitting to TRAI. TRAI in turn can use their existing Consumer Advocacy groups and use their periodic Workshops in various States for Consumer Awareness periodically.

For, any dispute between the TRAI and DoT on the compliance measures related to Traffic Management Practices should be taken up by TDSAT.

Q5. Whether entry fee, recurring fee etc. for membership need to be uniform for all members or these may be on the basis of different type or category of membership? What may be these categories? What policy may be adopted for initial set up of Multi-stakeholder Body. Please suggest with justification.

AND

Q.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.

BIF RESPONSE:

BIF is of the view that there is no need for the formation of an MSB as it has no unique role that is not currently performed by TRAI or DoT.

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

BIF RESPONSE

BIF is of the view that the net neutrality principles and obligations should apply only to ISPs and not to any other stakeholders in the digital economy.