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Introductory Comments

At the outset, we would like to point out that we have consistently taken the position that TRAI / the DoT must deal with the issue of net neutrality in a holistic way and lay down appropriate high level regulatory principles, based on which individual issues raised from time to time, may then be scrutinized.¹ Such a position would enhance regulatory certainty and thereby benefit both service providers as well as end users. Equally, it would enable TRAI to adopt a flexible approach in dealing with specific market and technological changes.

We recognize that TRAI has now moved on from the core debate on whether there should be net neutrality regulation at all – and is now focusing on contouring the relevant regulations. In this process, we urge TRAI not to forget or ignore the basic principles that prompted its involvement in this issue i.e. ensuring equitable and non-discriminatory access of the people of India to the public Internet. This principle formed the bedrock of the TRAI's Regulation of February 8, 2016 and indeed is the basis for net neutrality regulation in many countries around the world.

In its order of February 8, 2016, TRAI laid down certain specific principles which we believe have bearing on the present Consultation.

In the said Regulation, TRAI has unequivocally accepted:

- (a) that service providers should have no gatekeeping role whatsoever, as far providing access to content on the public Internet is concerned;
- (b) that content specific regulation of access (by service providers) should not be permitted in view of the adverse economic and social consequences (including stifling innovation, competition and freedom of expression);
- (c) telecom service providers provide merely the facility to transport bits of data (which enable a user to access content on the public Internet), as this enables permission-less innovation and facilitates free choice by the consumer;
- (d) permitting service providers to charge differentially for certain types of content would affect the entire architecture of the Internet in view of the fact that the Internet is a series of interoperable networks and data is not necessarily handled by a sole service provider;
- (e) Service providers should not be permitted to shape the user's Internet experience – knowledge of the Internet and the outlook of users who have access only to a 'walled garden' will be shaped only by the information made available through the service

1 One may refer to our Responses to TRAI pertaining to the Consultations on Differential Pricing of Data Services as well as Pre-Consultation on Net Neutrality, available at <http://www.knowledgecommons.in/wp-content/uploads/2016/01/KC-Response-to-TRAI-Consultation-on-Differential-Data-Pricing-Dec-29-2015-e-submission.pdf> and <http://www.knowledgecommons.in/wp-content/uploads/2016/01/KC-Counter-comments-to-TRAI-differential-pricing-of-data-Jan-14-2016-FINAL.pdf> respectively.



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- providers selected offerings in that particular 'walled garden'.
- (f) The 'information asymmetry' in the Internet market must be considered while framing any policy.
 - (g) Price-based differentiation would make certain content more attractive to consumers *resulting in altering a consumer's online behaviour*. While this might not be a major concern in a country where the majority already has Internet access, in a nation like India which is seeking to spread Internet access to the masses, this could result in *severe distortion of consumer choice* and the way in which users view the Internet.
 - (h) Any discrimination or differentiation between cost of accessing different content cannot be arbitrary.

These principles together with those laid out by the Department of Telecommunications Report on Net Neutrality of May, 2015, ought to be kept in mind while framing any new regulations on the issue.

Finally, we commend the TRAI for having previously adopted a pro-active approach in regulating discriminatory access related policies by TSPs. While the reasons for supporting a general policy of regulatory forbearance are well understood, one must also keep in mind India's specific circumstances and needs (which include both human and institutional limitations ranging from a lack of digital skills amongst the populace at large to relatively underdeveloped competition law and inaccessible dispute resolution structures).



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Q.1 How should “Internet traffic” and providers of “Internet services” be understood in the NN context?

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

Internet services refer to publicly available electronic communications services that enable a user to access virtually any end point on the global, public Internet, irrespective of the network technology and terminal equipment used. Providers of Internet services should not as a general rule restrict connectivity to any accesible end points of the Internet.

Network neutrality regulation must apply to all such services i.e., to the provision of Internet services to the public by a telecommunications service provider.

Certain specific services may indeed be excluded from the scope of net neutrality regulation. However, such services must be demonstrably ‘a specialised service’ requiring differentiated treatment, for specific and established reasons. That said, merely by virtue of being a specialised service, one should not be exempted from any regulatory requirements whatsoever. Certain obligations and regulation, for instance concerning offering of such services in a non-discriminatory manner must be in place.

It is vital that the purpose of net neutrality regulation not be defeated by overly broad definitions or interpretations of specialised services. The regulator must scrutinise any such service offerings carefully to ensure that they are not merely mechanisms to ensure that net neutrality regulation is not made applicable thereto. This should be done using a transparent regulatory process.

Creating an ecosystem that encourages the delimitation of services as being ‘specialised’ may also lead to the degradation of normal services – as recognised by BEREC in its analysis of the net neutrality situation – *“the widespread deployment of specialised services and the generalisation of userbased or application-based prioritisation on IAS can result in a degradation of the general performance of the standard (non-prioritised) IAS below an acceptable level.”*¹ One may also note BERECs views that “sub-Internet services” – i.e. a service that restricts access to services or applications (eg.: banning the use of VOIP or video streaming) or enables access to only a pre-defined part of the internet should also fall under net neutrality regulation.

Whether a particular service constitutes a specialised service must be judged on fact, based *inter alia* on whether similar services are or can be adequately provided over the public Internet – i.e. there must be a demonstrable need for a specialised network based on a particular quality of

1 Summary of BEREC positions on net neutrality, BoR (12) 146, available at http://berec.europa.eu/eng/document_register/subject_matter/berec/opinions/1128-summary-of-berec-positions-on-net-neutrality



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service or other technical requirement. Should a definition be required, one may consider stating specialised services to be “*services other than general internet services which are optimised for specific content, applications or services, or a combination thereof, where the optimisation is necessary in order to meet requirements of the content, applications or services for a specific level of quality*”¹. TRAI must therefore “*verify whether and to what extent such optimisation is objectively necessary to ensure one or more specific and key features of the content, applications or services and to enable a corresponding quality assurance to be given to end-users, rather than simply granting general priority over comparable content, applications or services available via the internet access service and thereby circumventing the provisions regarding traffic management measures applicable to the internet access services.*”²

One should refrain from categorising entire (and rather nebulous concepts) such as ‘Internet of Things’ as a specialised service. However, services where the number of reachable end-points is limited by the nature of the terminal equipment used with such services (eg: services designed for communication with individual devices, such as e-book readers as well as machine-to-machine devices like smart meters etc.) could be outside the scope of net neutrality regulation – unless they are being used to circumvent net neutrality regulation.

Certain other specific categories of networks that could be excluded may include:

- (a) networks demonstrably used only to provide high latency related services – pertaining to Internet medicine related uses, etc;
- (b) internal corporate networks using dedicated VPN services

Specialised services should also only be permitted where normal Internet access services for the public are not affected i.e. specialised services should not result in the degradation of typical Internet services provided to the public. The authorities should therefore consider if a specialised service is a potential substitute for standard Internet services, and if the capacity needed for their provision is to the detriment of the capacity available for Internet services to the general public.

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

- 1 Refer BEREC Guidelines on the Implementation of Net Neutrality Regulation, BoR (16) 127, available at http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules
- 2 Refer BEREC Guidelines on the Implementation of Net Neutrality Regulation, BoR (16) 127, available at http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules



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Please provide reasons.

We do not believe there is any specific need to regulate content delivery networks or agreements unless being used to evade net neutrality regulation.

The need to regulate interconnection at any layer other than the network layer (where TRAI already regulates this issue) is unclear. Network level interconnection agreements must be regulated so as to ensure end-to-end connectivity.

Q.2 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).

Implementation of traffic management practices (TMPs) should, generally speaking, be in the form of an exception to the general rule of net neutrality as the arbitrary application of TMPs violates the core principles of network neutrality and can lead to unethical practices being followed by service providers. As a general rule no discrimination should be permitted on the Internet.

However, we do recognize that in certain circumstances such practices may be essential to maintain network functionality and ensure a best possible experience for the maximum number of users.

We believe that all instances of traffic management must be specifically regulated by the Government (or TRAI) to ensure complete transparency and avoidance of any illicit behaviour by ISPs.

In the event any traffic management principles are indeed required, the onus must be on the service provider to justify the need to carry out the specific practice. Further, it should be kept in mind that such steps shouldn't interfere with the access, affordability and quality of the services.

In any event, traffic management must not be used for solely commercial reasons or applied arbitrarily (i.e. inconsistently across services and applications). There must be serious network security and performance related concerns that should necessitate the implementation of such practices and such practices must not be implemented as a consequence of private arrangement.

As stated in our response to the Pre Consultation Paper on Net Neutrality – we believe that TRAI must bar all TMPs other than those specifically permitted. The use of these TMPs should nonetheless have to adhere to certain basic principles – for instance proportionality, necessity, transparency, reasonableness.



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Ultimately, TMPs must serve specific defined ends of ensuring the safety, security and robustness of the network and ensuring optimum network usage by the public at large.

Specific traffic management practices which are judged to either:

- (a) violate one of the aforesaid principles; or,
- (b) harm competition in the content layer or affect user choice in any way

should not be permitted.

Such a mechanism would ensure that the effects of information asymmetry (between users and service providers) are somewhat mitigated – with the regulator having to pre-approve specific categories of TMPs. The specific use of TMPs though will have to be evaluated based on complaints of users / consumer groups as well as tests carried out by the regulator.

The mechanism suggested would provide clarity and lend itself to regulatory certainty, enable a high standard of user protection, lessen the regulatory burden and provide sufficient flexibility to service providers to take necessary measures in the interests of network security and other relevant issues.

Q.3 If a broad regulatory approach, as suggested in Q2, is to be followed:

(a) What should be regarded as reasonable TMPs?

As stated previously, we do not believe an exhaustive list of reasonable and non-reasonable TMPs can or should be laid down. Often, the use of TMPs by a service provider will be context based. The key challenge in this area is actually dealing with the information asymmetry (as users may have no idea they are being subject to TMPs). Accordingly, we believe that certain types of TMPs could be permitted by the regulator based on demonstrated need for public interest reasons. Legitimate TMPs must be aimed at ensuring appropriate network performance and dealing with network security only (i.e. must have public interest in the provision of Internet services in an equitable, open and accessible manner as the sole reason). They should not be a commercial tool or a tool used to shape user choice of content.

That said, reasonable TMPs should:

- (a) be non discriminatory (i.e. should not as a general rule discriminate between types of traffic or applications. All end points on the Internet must be treated with equivalence subject to demonstrated network performance or network security needs)
- (b) should be transparent;



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- (c) should be suitable, proportionate sensu stricto and based on demonstrable need (necessity). Measures should be temporary in nature unless their extension can be justified on relevant public interest grounds.

(b) Whether and how should different categories of traffic be objectively defined from a technical point of view for this purpose?

Content on the Internet is of numerous types – we don't know what else we will see in the future. It may be practically impossible to differentiate between all types of content. This will involve discussing what constitutes a category, etc, may lead to unnecessarily complicating regulatory intervention etc.

Need to also be careful of encouraging privacy invasive techniques being legitimised under the guise of TMPs. For example, Deep Packet Inspection can be a method to inspect the packets for find out the type of content. Deep Packet Inspection (DPI) can also be used for surveillance purposes. Allowing DPI may therefore open the way for surveillance.

Equally, we need to be careful not to let service providers shape the future of further innovation. For instance, Youtube would not have developed to the extent it has if service providers used network performance as an excuse to throttle video streaming websites.

Different categories should be defined on the basis of technical characteristics – for example content that requires less latency over content that is relatively unaffected by latencies.

Public and non public services could form another category. (internet v. specialised services). For example, disaster management traffic – defined by the government – can be privileged over normal traffic. The key will be to mandate identifier for such public interest traffic and not achieve it through invasive techniques such as DPI.

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

Without defining what are application specific traffic and different categories of traffic, it is difficult to comment on proposals of different types of discrimination. Discrimination between applications within a category of traffic would clearly not be done for a genuine network related issue (a genuine network issue would apply to an entire category of traffic, if at all). Such practices should therefore be barred.

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

In general, we do not see any requirement of such a treatment. Unless specific cases are discussed, we do not see any merit for such an approach.



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Q.4 If a narrow approach, as suggested in Q2, is to be followed what should be regarded as non reasonable TMPs?

Refer response to Question 3.

Q.5 Should the following be treated as exceptions to any regulation on TMPs?

(a) Emergency situations and services; Yes

(b) Restrictions on unlawful content; No. A TMP should not examine lawful or unlawful content. Examination of content is not the domain of TMP.

(c) Maintaining security and integrity of the network; Yes

(d) Services that may be notified in public interest by the Government/ Authority, based on certain criteria; or Yes

(e) Any other services. Please elaborate. We do not see any other service except services notified as in public interest by the Government/ Authority to be considered.

Q.6 What could be the principles for ensuring nondiscriminatory access to content on the Internet, in the Indian context?

TRAI must act so as to ensure:

(a) Competition is preserved both in the access provider market as well as in the online market itself, including through protecting unhampered and equitable access to all legal content on the public Internet;

(b) That it ensures innovation and edge providers / users are adequately protected from discriminatory practices, high costs and other unnecessary barriers to the market;

(c) Lower costs of access to the consumer and improve quality of access services;

(d) Encourage infrastructure growth in the country – which necessarily implies ensuring that access providers do not have a free hand to employ traffic management and other practices that encourage them to create and maintain an artificial scarcity of bandwidth.

Accordingly we believe that the following should be recognised as the core principles of Net Neutrality:



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- (1) As recognised in the Report of the Department of Telecommunication of May 2015 (the “DoT Report”), all (legal) content on the Internet should be equally accessible (no blocking or throttling or paid prioritization or any other form of preferential treatment, particularly for commercial reasons). TRAI should ensure that TSPs should not act as impediments in users accessing / creating content or providing a service on the Internet. Accordingly, this requires that principles of non-discriminatory behavior & encouraging competition and openness must be adhered to. Service providers should not be permitted to act as gatekeepers of the Internet – whether in concert with content providers, or otherwise (irrespective of the ostensible purpose).
- (2) There must be a prohibition on discrimination of data packets except in specific, strictly construed and narrowly defined circumstances (possible exceptions could be for emergency services, notified public services and for genuine traffic management and security / network management reasons).
- (3) Regulations requiring that customers be charged by access providers based only on the parameters of usage and quality of access (i.e. bandwidth delivered).
- (4) No limiting of number of web sites offered under any plan.
- (5) Protection of user privacy and a prohibition on deep packet inspection;
- (6) Greater transparency in the provision of services to a user and preventing false advertising;
- (7) Prohibition against any measures taken by a service provider to limit use of any specific hardware / end point devices.

Enforcement of net neutrality principles must also be appropriately ensured – including through amending licensing terms of TSPs, and ensuring appropriate auditing and reporting mechanisms are established (in addition to grievance redressal and complaints mechanisms).

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?);

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

Complaints resolution, checking and verification, dispute resolution procedures will be important.



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Vital for consumer groups to be given adequate regard.

We believe that the TRAI is best suited to address these issues as a proposal for public consultations. There are literature available from other jurisdictions to see how this is being done.

Q.8 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.

The network itself should not discriminate between devices. Network neutrality should not mean no difference in the service provided – it means that the difference should not be caused by non network based or non-technical reasons. Further, network neutrality regulation should not be understood as a guarantee of speed – there are/should be separate regulations on QoS – rather net neutrality regulation should focus on the issue of non-discriminatory and equitable access to the public Internet.

While access speeds of individual users may indeed be limited by the type of device, geographical location, browser etc., one should keep in mind that these are not per se permanent conditions or indeed policies established for commercial reasons. They are external factors that may affect network performance in individual circumstances.

However, if it is found that due to commercial arrangements (between browser manufacturers, content providers, TSPs) or any other reason – the quality of service is being purposely affected with a view to controlling how the user accesses the public Internet – appropriate action must be taken.

Further, in terms of practical realities – upon receiving a complaint say pertaining to purported degradation of access service, a service providers may genuinely claim that there was for instance no degradation in a particular case based on evidence of network performance at the relevant time. However, should there be a pattern of such degradation, there may be reason for the authorities to investigate further.



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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. [See Chapter 5]

Q.10 What would be the most effective legal/policy instrument for implementing a NN frame- work in India? [See Chapter 6]

We believe that a comprehensive regulatory framework would consist of:

- (a) a general policy pronouncement at the highest level static generic principles and aims of ensuring equitable access to the Internet, etc.
- (b) Legislative backing which provides an element of certainty to the policy framework, defines relevant issues and contours the regulatory field while providing a framework for regulations to be passed by the independent regulator as and when necessary
- (c) Regulations issued by the independent authority (TRAI), which must adhere to the legislation / high level principles, but can be adopted to the needs of the day.

(a) Which body should be responsible for monitoring and supervision?

We believe that TRAI is required and mandated to monitor and supervise this issue.

Resources permitting, we suggest that TRAI establish a separate internal office / department specifically dedicated to this issue. This office could bring together all the necessary activities in the area from information collection and market analysis, to monitoring and supervision.

While setting up another body may be considered, this would probably replicate resources and competencies currently at TRAI and would therefore be inefficient and wasteful.

(b) What actions should such body be empowered to take in case of any detected violation?

The punitive action for violation of net neutrality regulations must be civil in nature. The penalties must be proportionate to the offence and adequate, having regard to the specific circumstances of the case, to both adequately punish and deter future violations. Egregious or repeated violations



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must attract larger punishments – which may extend to cancellation of service provider licenses.

The power to issue directions to cease and desist from carrying out certain practices will be vital.

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

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: [See Chapter 6]

- Ensuring privacy
- Ensuring transient nature of measures taken are active only during congestion, not otherwise.
- Lack of information or performance indicators with the Authority why network performance is suffering and inability of the regulatory framework to demand such information from the service provider
-

(a) Disclosures and information from TSPs;

Ensuring correct, timely, understandable (and not excessive) information in the appropriate language is provided both to users and to the regulator.

No misleading advertising

Random checks to be conducted by regulator.

Power to call for information and disclosure of relevant documents by TSPs (power already exists with TRAI).

(b) Collection of information from users (complaints, user-experience apps, surveys, questionnaires); or

Yes.

(c) Collection of information from third parties and public domain (research studies, news articles, consumer advocacy reports).



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Yes, as supplementary material.

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

We believe that the creation of a multistakeholder body to act as an advisor / independent oversight / expert group may be a sound idea. However, creating such a body for the actual management of operational aspects may be difficult in practice and may also be less than useful for the following reasons:

- (a) TRAI cannot delegate essential functions or regulatory oversight, without appropriate legislative authority
- (b) Possibility of institutional capture would be high given the power imbalances between the various stakeholders
- (c) Difficulties with deciding representation and designing accountability mechanisms

Accordingly, we believe that any such body must be used primarily as a watchdog, to raise appropriate issues from time to time (concerns of stakeholders), to build expertise and lay down best practice principles, etc., to act as a conduit for information analysis and dissemination to the public and ultimately to adequately consider the multiplicity of interests involved in the issue of net neutrality and make recommendations to TRAI.

That said, should any such multistakeholder body be constituted we believe it will be vital to ensure:

- (a) appropriate representation of all relevant stakeholders. In particular it will be vital to ensure user interests as well as that of the general public are adequately represented.
- (b) transparency in selection of representatives
- (c) independence of the body from funders, regulators, service providers
- (d) accountability of the representatives and the body as a whole.

At the same time, such a body should not be used to replace public consultations on relevant



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issues or other democratic processes that TRAI as a public authority is required to follow. It must be kept in mind that TRAI cannot delegate essential functions without appropriate authority.

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? [See Chapter 6]

As stated previously, we believe that TRAI must adopt a principled approach to the issue. Certain basic principles must be laid out which frame the net neutrality policy. These should remain consistent over time. Individual cases and issues can then be addressed through regulations on a needs basis – depending on market conditions, new technologies etc.

Regulations must however be subject to timely and consistent review. TRAI may consider the utilization of sunset clauses / compulsory review clauses in its regulations governing the matter.

Critical to the consistent updation of regulatory policy is the collection and appropriate curation and dissemination of information. TRAI must take steps to put in place appropriate information gathering and dissemination mechanisms (through information provision norms for service providers, adequate mechanisms for making such information publicly accessible, ensuring appropriate market analysis is conducted at a periodic basis, etc.), and ensure timely, open and consistent engagement with *all* stakeholders.

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.[See Chapter 4]

See answer to Q8.

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