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05 July 2016

**Shri A. Robert J. Ravi**  
Advisor (QoS)  
Telecom Regulatory Authority of India  
Mahanagar Doorsanchar Bhawan  
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New Delhi 110002

**Subject: Pre-Consultation Paper on Net Neutrality**

Dear Sir,

This is with reference to the above referred TRAI pre-consultation paper dated 30<sup>th</sup> May 2016 and press release no 47/2016 dated 17 June 2016. In this regard, please find enclosed our response to the pre-consultation paper as an Annexure to this letter.

We hope that the TRAI will find our inputs useful covering various issues / aspects on net neutrality and consider the same while finalizing the recommendations on this subject.

Thanking you,

Yours sincerely,  
For **Telenor (India) Communications Pvt. Limited**

A handwritten signature in black ink, appearing to read 'P. Sharma', with a horizontal line underneath.

**(Pankaj Sharma)**  
Chief Corporate Affairs Officer

Encl: a.a

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## Telenor (India) Response to TRAI Pre-Consultation Paper on Net Neutrality (Dated 30 May 2016)

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**Preamble** - Telenor(India) submits its' views on some of the pertinent areas around which the Net Neutrality consultation paper should focus, extensively covering the aspects of Level Playing Field and regulatory framework for OTT communication services.

1. **Approach to Net Neutrality** - The DOT committee report had rightly noted that 'there is no standard definition of Net Neutrality'. We are witness to the fact that internet itself is ever evolving and so are the services rendered, recently 'sharing economy' like AirB&B and Uber have evolved which we did not fathom a few years earlier. In our opinion, we should not attempt to hardwire Net Neutrality since it is still evolving rather we should follow a principle based approach. An all encompassing definition is at Sl. No. 2

Regulatory policy should ensure that such innovation is not stifled by a straight jacket approach. Policy makers should ensure that the investment in networks which is the key to broadband access is safeguarded.

In the following sections we have explained that the internet economy is spread over geographies and the service level integration of businesses varies. Hence, traditional telecom specific regulations may not be future proof in this scenario.

2. **Open access, consumer choice, 'Internet for All'** - Telenor (India) believes in maintaining the Open Internet where customers can access any lawful content and services of their choice and with no restrictions in the services that operators can make available to end-users. Everyone should be able to enjoy the full benefits of the Internet and operators should have the possibility to develop and offer differentiated services in order to enhance users' options and increase choice between different providers. Openness plays a central role in keeping the Internet a platform for innovation, economic growth, social inclusion and the spreading of ideas. As an operator we want to maintain the openness and diversity of the Internet as that will increase the attractiveness of access.

As long as there is competition at the access level and transparency of offers in the market, **Telenor does not believe net neutrality regulation is required.**

However, in the eventuality that the Authority desires to pursue net neutrality regulation Telenor supports a balanced, principle based approach that safeguards the Open Internet and allows intervention for regulators in case problems arise. Such an approach is the opposite of rules that seek to impose very detailed restraints on certain behaviour (only in some parts of the value chain).

Key principles Telenor would support for such an approach include:

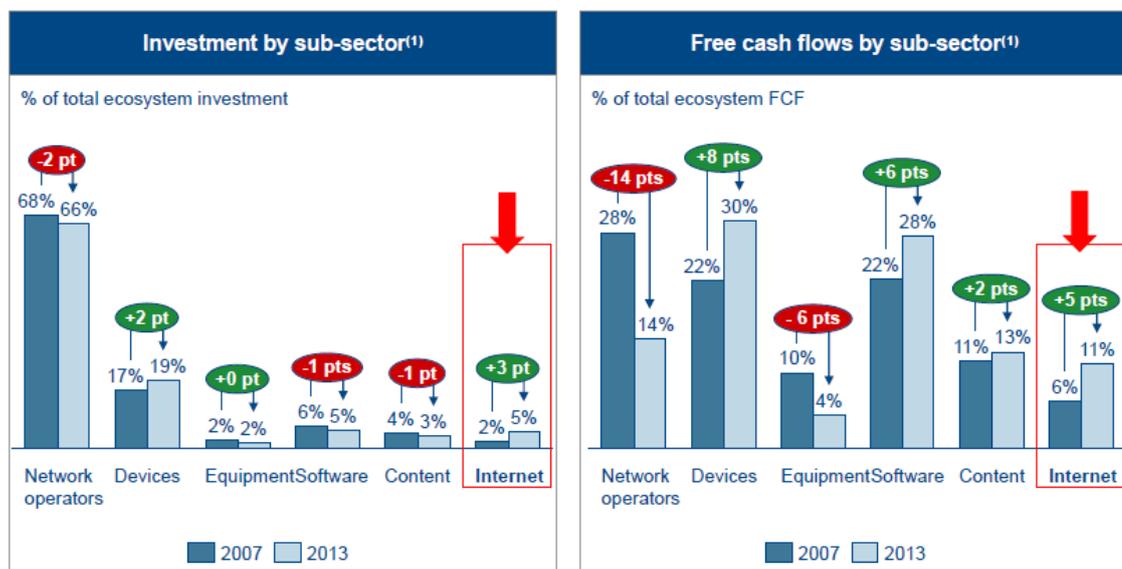
- No anti-competitive blocking or throttling of lawful services, content or applications;
- No unjustified discrimination of lawful content or services;
- Use of appropriate traffic management measures to ensure high quality service provision and efficient networks operation;

- Transparency so users are aware of the characteristics of the services and the capacity they are buying; and
- Horizontal regulations should be prescribed for all communication service providers (licensed TSPs and OTTs) offering voice, messaging and video services under uniform obligations for consumer protection, lawful intercept, data protection, retention and privacy, service security, reliability, emergency services and local taxes. Beyond that it should be best left to the market force.

3. **Internet is a global economy** – Recent analysis by GSMA shows that the total value of the internet value chain has almost trebled from \$1.2 trillion in 2008 to almost \$3.5 trillion in 2015, a compound annual growth rate of 16 per cent. In contrast the Telecom industry in India has been growing at a pace of 10 per cent.

Globally, telecom operators continue to invest heavily in networks in contrast to the other stakeholders in the internet value chain, but the value creation is disproportionate to investments. The value creation is happening in the different leg of the value chain. The below chart is prepared on the basis of our discussions with top-tier consultants, it would depict the de-alienation between investment and value creation.

The regulatory asymmetry as acknowledged in the DOT committee report unfairly impacts licensed TSPs and creates a non-level playing field vis-a-vis communication OTTs.



**Fig 1: Global investments and Free cash flow – a perspective view**

Over the last few years, businesses have moved laterally in the value chain acquiring instant messaging, video sharing, home automation, television, advertising and classifieds. These acquisitions have been done at multi-billion Dollar valuations based on their subscriber base across inter-continental geographies as their main asset.

The traditional vertical laws are inadequate to govern this Global eco-system and regulatory oversight can best be achieved through policy directives **that apply equally to all internet based and traditional communication services** irrespective of their underlying technology.

In case any monopolistic behaviour is observed, an **ex-post investigation under the competition laws** should be done followed by penal actions.

4. **Profitability shift in the value chain** – The Internet commercial eco-system entails various stakeholders (or businesses) namely Content Rights, Online Services, Enabling Technology / Services, Connectivity, User interface. *Source: A.T. Kearney Public Policy Paper, No. 11, April 2010.* An updated version of this report has been published in May 2016 by GSMA.

Stakeholders in the value chain	Growth by segment (CAGR 2008 – 2015)	Profitability (EBIT margin)	ROCE	Shareholder value
<b>Content Rights</b> (Movie, Sports, Video, Gaming ....)	9%	6%	3%	16%
<b>Online Services</b> (Amazon, Netflix, YouTube, Whatsapp, Twitter ....)	18%	13%	8%	45%
<b>Enabling Technology / Services</b> (Akamai, M2M, Paypal, Visa, Adobe ..)	13%	9%	0.5%	22%
<b>User interface</b> (PC, Smart phone, STB ..)	15%	9%	9%	17%
<b>Connectivity (TSPs)</b>	14%	13%	9%	6%

**Fig 2: Internet value chain – Performance of Stakeholders**

When compared with the market as a whole, all segments except connectivity outperform the S&P 500 Index, which generated average annual returns of 12 per cent during the 2009-2015 period. The major investment in the access infrastructure is done by the TSPs, while the **value creation for their shareholders is at the lowest.**

5. **Innovation without permission** - A new framework must evolve and take into account the profound developments in the internet value chain and the variety of services available to consumers and businesses – whether offered by mobile network operators or internet-based service providers. The Internet offers an increasingly wide choice of digital services via electronic communications networks. Digital services come in various forms ranging from communications and access services via traditional telecommunications networks, to new Internet based services such as social networks, application based communications services and online music and games (often referred to as “over the top” (OTT) services).
6. **Need for regulatory modernisation** – The main objective must be to reduce the regulatory burden on licensed services (**deregulation**).

When designing new regulation policy makers should adhere to the established **principles of non-discrimination and technology neutral regulation.** These principles ensure that consumers continue to benefit from innovation and investment based on the merits of the

services, rather than to exploit regulatory inconsistencies and limit distortions between providers.

7. **Pricing flexibility** – The consultation paper rightly acknowledges in para 19 that “ *User choice, innovation without permission, and low costs of application innovation are among the key factors that have allowed the Internet to serve as a platform for application innovation, free speech and decentralized economic, social, cultural and political interaction*”

Our license also provides for unfettered **commercial freedom to do business**. The appeal for data services to consumers is enhanced by the applications and services that the internet offers. There are different business models where application provider wishes to promote its services by offering certain incentives. TSPs also offer bundled data services to acquaint new customers to Digital literacy and also to expand consumption.

This **flexibility in pricing** has been restrained vide the Differential pricing regulation and is further attempted to create a non-level playing field vide the Free Data consultation. This regulation is not applicable uniformly to the entire Internet value chain, also this was issued prior the definition of Net Neutrality and its core principles in the Indian context is settled.

Hence, we request the Authority to **restore the pricing flexibility to TSPs** and withdraw the differential pricing regulation.

8. **Level playing field (LPF) and Net Neutrality (NN)** – the OTT communication services are providing services similar to the Licensed Telecom Service providers and this has created regulatory inequality, as noted in the DoT committee report.

Taken at face value there does not appear to be a direct link between LPF and NN. LPF is about playing by the same rules; ensuring actions in a competitive market are not distorted, while NN essentially is a non-discrimination principle about equal treatment of traffic.

However, both deal with neutrality. ‘Same service same rules’ can be understood as ensuring “regulatory neutrality”, i.e. regulation must be neutral in the sense that it does not treat the same services differently. Likewise for NN the inherent requirement for treating something equally, without discriminating points in the direction of the LPF school of thought.

That said, the topics in our view are formally divorced from each other. LPF is a broader concept and principle related to the design of a regulatory framework. NN is a specific regulatory concern. **The regulatory equality should be settled first** to establish level playing field.

9. **Horizontal regulations** – To establish consumer friendly and future proof regulation, **horizontal legislation should progressively replace sector or service specific rules**. Specific areas are:
  - a. **Data privacy / retention**: Customer data has become a valuable commodity in the Digital Services market. In many jurisdictions the regulations governing how customer data is collected, processed and stored vary considerably between different market participants depending on their legacy sector of origin. Regulation should evolve toward a common data privacy regulatory framework for the same services which applies equally to all providers of those services.

- b. **Consumer protection (QoS):** should provide a minimum level of consumer protection based on horizontal rules and above all a high degree of transparency towards customers.
  - c. **Law enforcement/national security:** There should be consistent horizontal obligations supporting legitimate law enforcement and national security activities.
10. **Anti-competitive behaviour, need for investigation** – Price differentiation is common in most competitive markets and linked to the commercial freedom of operators to offer retail services. The ability of the operators to differentiate prices and to introduce innovative pricing schemes is a key factor in promoting the development of new and innovative data services. The assessment of specific commercial practices and the true nature of competition should be judged in the context of Global competitive landscape of the internet value chain and best judged under the general competition law.
- Instances of discriminatory pricing, predatory behaviour and restricted choice to consumers due to market concentration should be ex-post investigated. The instances of market failure should be established and put in public domain followed by penal action.
11. **Traffic Management** – Internet traffic has different requirements in terms of latency (delay) and the tolerance to loss of information. The ITU-T Recommendation G.1010 and ITU-R Recommendation M.1097-2 provides for 8 different classification based of QOS perspective of end user.

**Classification of data based on latency and loss of info** – Certain applications are highly susceptible to errors but tolerant to delays viz. Still photograph. Other applications are highly intolerant of short-term delay variation (jitter) viz. Conversational voice. Steaming audio/video has no conversational element attached to it and can use buffering to overcome delay requirements. Bulk data (file transfer) can work even with longer delays and/or loss of information. Thus different types of data over internet have different requirements and hence associated traffic preferences.

**Reasonable traffic management** – Traffic management is a tool to balance the network resource usage of bandwidth-heavy applications (e.g. video streaming, file sharing) versus time-sensitive applications (e.g. remote alarm monitoring, M2M, health monitoring, IOT) and does not imply blocking of a specific content or application provider on the network. On the contrary, active management of network resources makes the consumer experience better and makes networks more efficient, allowing operators to secure their networks, prioritize time-critical services and match scarce network resources to service requirements.

**Transparency and full disclosure** – users are aware of the characteristics of the services and the capacity they are buying

Therefore, TSPs should have flexibility to manage traffic congestion and optimise performance of the various applications as part of normal operation.

## Question wise comments

Question 1: What should be regarded as the **core principles of net neutrality** in the Indian context? What are the key issues that are required to be considered so that the principles of net neutrality are ensured?

### Response:

We believe that an open competitive market, rather than regulation, is the best way to ensure that the Internet remains a platform for growth and innovation. Presently in India given the state of wireline and cable infrastructure mobile remains the medium of choice for delivering broadband. TSPs have invested heavily in spectrum and also built data network over the past 2-3 years. Data market is expanding and new users are getting initiated to Digital literacy. There is no demonstrated instance for discriminatory pricing prior to the Feb 2016 regulation, market is expanding and consumption is taking off.

Therefore, as a matter of principle, **we do not believe net neutrality regulation is required** given the degree of competition in the market and the transparency of offers in the market.

However, in case Net Neutrality regulation is pursued by the Government, Telenor India supports a balanced principle based light touch regulatory approach that safeguards the Open Internet by treating all the data equally and allows intervention for Regulators in case problems arise. There is a need for structured, rational and logical discussions on the topic of net neutrality for India considering the fact that the same has not been conclusively defined globally due to the numerous dimensions and different approaches adopted by different countries.

The DoT committee on Net Neutrality had also concluded that, since there is no standard definition of Net Neutrality, **there is no need to hardwire a definition**. The focus should be on “assimilating the core principles of Net Neutrality and shape the actions around them” in the Indian context. Thus, we propose that India should adopt a definition of Net neutrality which is future proof and conducive to innovation and investments in networks. It should have some hard boundaries and some principles.

A broader view of the term “Net Neutrality” refers to the principle that the internet should be an open platform for freedom of expression, innovation and socio-economic development and we support that. We as mobile operator are committed to maintaining the open internet. Managing network traffic and offering different service packages do not contradict this belief in the open internet. Without managing data traffic, operators cannot efficiently meet consumers’ demands to access different types of applications and services through their mobile connections. Forcing them, through Net Neutrality regulations, to be detached from their network traffic is neither operationally practical nor necessary. The hard boundaries can be:

- **No blocking** of legal content
- **No throttling** except for traffic management
- **No paid prioritisation** or creation of fast lanes

The following regulatory principles may be adopted and it should be monitored for any infringement:

- i. **Open Internet-** Accessibility of all content to all users at all times.

- ii. Compliance to **tariff principles & regulations defined by TRAI** and ensure upfront and transparent communication of applicable conditions to the customers. Differential tariffs for data services should be allowed on case to case basis.
- iii. **Reasonable traffic management** as part of normal network operations. Traffic management is an essential function of mobile networks to manage the growing volumes of data traffic,
  - to protect network and customers from malware/ denial of service,
  - safe on-line experience for children,
  - prioritizing emergency services,
  - prioritizing time-critical services in IOT space,
  - manage subscriptions to cap data consumption costs,
  - choice for consumers through multiple tariffs,
  - block or monitor traffic as per legal directives, and
  - to meet the performance expectations of the different traffic types to ensure better experiences for all consumers viz. queuing of file sharing applications or peer to peer transfers.
- iv. **Regulatory equality** (between Licensed TSPs and OTTs) to promote level playing field for providing licensed communication services basis the principle of “same service, same rule” through the use of horizontal legislation that should progressively replace industry, technology or service-specific rules.
- v. **Transparency and clear communications** so that users are aware of the characteristics of the services and the capacity they are buying.
- vi. Focus on **connectivity to the masses and ensure availability of basic internet services**, to bridge the digital divide.

Question 2: What are the reasonable traffic management practices that may need to be followed by TSPs while providing Internet access services and in what manner could these be misused? Are there any other current or potential practices in India that may give rise to concerns about net neutrality?

**Response:**

Traffic management is an essential function of mobile networks to manage the growing volumes of data traffic, to protect network and customers from malware/ denial of service, safe on-line experience for children, prioritizing emergency services, prioritizing time-critical services in IOT space, manage subscriptions to cap data consumption costs, choice for consumers through multiple tariffs, block or monitor traffic as per legal directives and to meet the performance expectations of the different traffic types to ensure better experiences for all consumers. The regulations that prohibit traffic management or prescribe a limited set of permissible cases are not future-proof and will have unintended consequences for innovation and investments.

Networks are constantly evolving and so are the ways TSPs manage them. Thus, reasonable traffic management practices should be allowed to use by TSPs to optimize and use their network resources efficiently and to ensure consistent end user Internet access experience when data volume surge. DoT Committee had also observed that not all data packets are equal, different applications place different performance and bandwidth demands and therefore network management is necessary to ensure that few applications

do not place the unreasonable demands to detriment of other traffic, protect networks, manage traffic flow, comply with legal obligations, deliver acceptable quality of services for real-time services, etc.

There should be flexibility for TSPs to adopt reasonable traffic management practices as part of normal network operations to manage the growing volumes of data traffic and serve their customers in a better and efficient manner. Further, It should be left to the TSPs to put forward and justify its own practices as “reasonable” within the broader framework of Open Internet. We suggest that testing of these practices against general principles may not be flexible enough for a dynamic market like India rather an attempt should be made to define a permissible list of reasonable traffic management rules which should be followed by all operators to ensure delivery of time critical / real time services without any delay.

Some of the examples quoted from the rules / guidelines of global regulators on reasonable traffic management are explained below for consideration-

1. In line with the BEREC<sup>1</sup> draft guidelines, TRAI may assess whether traffic management is reasonable or not on the basis of objectively different technical QoS requirements of specific categories of traffic. Examples for technical QoS requirements are latency, jitter, packet loss, and bandwidth. Traffic categories should typically be defined based on QoS requirements, whereby a traffic category will contain a flow of packets from applications with equal (similar) requirements. Therefore, if TSPs implement different technical QoS requirements of specific categories of traffic, this should be done objectively by basing them on the characteristics of the applications transmitting the packets. For example, such a category may consist of real-time applications requiring a short time delay between sender and receiver.
2. BEREC has also mentioned in its draft guidelines<sup>2</sup> that the endpoint-based congestion control (a typical example is Transmission Control Protocol (TCP) congestion control) does not contravene traffic management rules since, by definition, it takes place within terminal equipment and terminal equipment is not covered by the Regulation. BEREC has suggested National Regulatory Authorities should consider network-internal mechanisms of TSPs which assist endpoint-based congestion control to be in line with equal treatment, and therefore permissible, as long as these mechanisms are agnostic to the applications running in the endpoints and a circumvention of the Regulation does not take place.
3. Similarly, the operational guidelines<sup>3</sup> for traffic shaping were jointly issued by various industry associations in **Japan suggested restriction on heavy users** who excessively occupies the network bandwidth and consequently degrade the services of the general users. These guidelines have explained two methods for packet sharing – (a) traffic restrictions of specific applications (b) traffic restriction or cancelling the contract of heavy users whose traffic exceed a certain specified threshold. These methods should be acceptable only in exceptional circumstances and such practice should only be adopted in exceptional circumstances where the traffic of a specific heavy user excessively occupies the network bandwidth and consequently degrades the service of general users, giving rise to the need to restrict

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<sup>1</sup> Body of European Regulators for electronic communications

<sup>2</sup> BEREC guidelines on the implementation by National Regulators, of European Net Neutrality rules, June'16

<sup>3</sup> Guidelines for Packet sharing, May 2008

the traffic of such heavy users or specific applications that are occupying excessive bandwidth.

We recommend, following practices on traffic management should be considered for ensuring open internet access to all consumers, however while adopting these suggested practices TSPs to ensure that there should not be any competitive blocking or throttling of services, content or applications as well as no unjustified discrimination of content or services:

- For the single type of service, the traffic should not be discriminated in favour of any single content provider rather there should be equal access to all content providers offering such service.
- There should be a separation between specialised Services and basic internet access services. TSPs should continue to offer “specialised Services” with a guaranteed quality, as long as it do not degrade or impair Internet access services. We believe that prohibiting such services will hinder the development of innovative services. The pricing and quality for these specialised services should be left to the market forces due to heterogeneous consumer segments and availability of intense competition.
- TSPs are currently using various techniques like data caps, speed throttling after exhausting committed data usage etc should be continued without any regulatory intervention considering the fact that such terms & conditions are being upfront informed to the customer at the time of subscription of data pack.
- TSPs should have the freedom to provide consumers with the information that is relevant and meaningful so that they are aware of the characteristics of the services and the capacity they are buying. The regulator may provide guidance on transparency but should not mandate a particular approach.

In view of above, we request TRAI to allow TSPs to manage traffic congestion, unsolicited traffic and optimise performance of the various applications as part of normal operation.

While a consumer for voice always uses 1 traffic channel, same does not hold good for data. A single user may latch on to a data heavy application while many others are trying to access basis application such as railway ticketing, examination results or weather forecast. This aspect has been addressed by the Japanese regulator. We request the Authority should publish awareness literature on data consumption for the general public at large.

[Question 3: What should be India's policy and/or regulatory approach in dealing with issues relating to net neutrality? Please comment with justifications.](#)

**Response:**

As stated in response to question (1), the best regulatory response to net neutrality would be no regulation and simply rely on competition law to deal with any concrete cases that may arise. This will ensure a market driven development where operators are given the ability and freedom to innovate and try new services.

Detailed justification has been given in the Preamble that Internet is a global economy and there are various stakeholders in the internet value chain besides the TPSs. It is not possible

for any individual stakeholder to pricing power unless it has acquired market leadership at the global level. Such stakeholder may necessarily not be a TSP. While there are more than 800 TSPs there are only a handful of internet companies. Competition laws are best suited for investigation of market failure as these are horizontally applied across sectors.

Where a net neutrality regulation is developed it should be balanced and principles based to ensure as far as possible that market driven outcomes are still the norm. In other words, any regulation should refrain from being very prescriptive acknowledging that definitions that are too technical or grounded in today's technological realities could have an adverse impact on innovation in networks and services.

[Question 4: What precautions must be taken with respect to the activities of TSPs and content providers to ensure that national security interests are preserved? Please comment with justification.](#)

**Response:**

National security is paramount, it is uniformly obligated on any citizen / organization providing services in India. Any lapses on this account will have serious implications on the ordinary citizen as well as compromise national security.

TSPs are governed by the strict license conditions and obligated to ensure compliance at all the times. Internet based services provide anonymity to a user in terms of his/her age, identity, address, thus is a threat to national security. For instance, Internet telephony does not follow standard protocol, as is essential in the traditional voice services through GSM, thereby making extremely difficult for LEAs to track the source of internet calls. Similarly, in case of messaging, it becomes difficult for LEAs to intercept the same due to non-availability of encryption keys.

Therefore, we recommend that all **OTT service providers should ensure traceability of transactions and users at all times.**

[Question 5: What precautions must be taken with respect to the activities of TSPs and content providers to maintain customer privacy? Please comment with justification.](#)

**Response:**

Consumers must have trust in digital services. Today when consumers engage in electronic communications, the level of protection they are afforded will very significantly depending on which technology or type of service provider they choose. This inconsistent approach undermines consumer trust. There should be a "level playing field" as regards protection of personal data and privacy. However, we do not believe these issues should be addressed in a regulation on net neutrality.

[Question 6: What further issues should be considered for a comprehensive policy framework for defining the relationship between TSPs and OTT content providers?](#)

**Response:**

We fully support a thorough (and fundamental) review of the regulatory and legal provisions guiding the digital economy. Change has in recent years been profound and it is time reflect, review and update the applicable body of law for the digital sector. Here we believe the



principle of “same service same rules” should play a key role. What this principle concretely means should be subject to detailed discussion, but we believe the result will be more horizontal regulation (same regulation that applies across the broader value chain) and deregulation where the competitive dynamics are strong. A key issue in this regard is to ensure that innovation and progress within the digital economy is not hampered through over-regulation.

At the very minimum DoT may bring all communication service providers (licensed TSPs and OTTs) offering voice, messaging and video services under uniform obligations for consumer protection, lawful intercept, data protection, retention and privacy, service security, reliability, emergency services and local taxes. Beyond that it should be best left to the market force.

The OTT players have flexibility for installation of servers anywhere globally whereas licensed TSPs are compelled to install their servers within the geographical boundaries of the country for hosting contents which puts TSPs in disadvantage in terms of economies of scale and higher operational efficiencies. The present license conditions in the UL should be made consistent with the change in technology over the past decade so that L-TSPs can offer services from a common server hosting applications offering services globally from one location and achieve economies of scale. The concerns of the security agencies will be adequately addressed when OTT services are offered by L-TSPs and the same should also be applicable to standalone OTTs

The similar flexibility is essential for L-TSPs for innovation and to protect their investments in infrastructure.

This is in line with the objectives of NTP-12 and will create a level-playing field for both communication OTT providers & L-TSP.

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