

**Consultation Paper on
“Regulatory Framework for Over-The-Top (OTT) communication Services”
Dated November 12, 2018**

Dear Sir,

We welcome the opportunity to submit our views on the Consultation paper on Regulatory Framework for Over-The-Top (OTT) communication Services dated November 12, 2018, by Telecom Regulatory Authority of India (TRAI).

Regards.

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¹ All views expressed are personal. The authors acknowledge the contributions made by Ms Radha Ravattu (IITCOE), Rishabh Dara (IIMA) and Mr Pranesh Prakash (CIS Bangalore) in framing the comments previously submitted to TRAI in response to the Consultation Paper on Regulation of OTTs in 2015, on which the present submission is based.

Introduction

The present submission is largely based on the premises set in our earlier response to the “TRAI Consultation Paper on Regulatory Framework for Over-the-top (OTT) Services, dated March 27, 2015”. As such, our overall recommendation is to introduce comprehensive regulatory framework for functionally equivalent communications services provided by OTT Service providers (OTT-SPs) and Telecom Service Providers (TSPs) to deliver reasonable regulatory parity across their services. Instead of compartmentalizing TSPs and OTT-SPs as two distinct actors, the recommended framework considers a two-layered approach which recognizes that there is an overlap between TSPs and OTT-SPs. The first layer comprises of network and infrastructure (collectively called the network layer) and the second layer comprises of services and applications (collectively called the service layer).

While the “non-communication” OTT-SPs must be regulated through the IT Act 2000 (amended in the year 2008) and Copyright Act 1957 as they cover the aspects related to Internet based Content and Services, Intellectual Property Rights, Consumer Rights, Financial Transactions, etc., the “communication” OTT-SPs should be encouraged to voluntarily adopt the Unified License through regulatory and economic incentives. This can possibly be encouraged by introducing a trimmed down version of the Unified License with low regulatory compliance costs and zero revenue sharing. Such a voluntary license would authorize OTT-SPs to terminate calls on the PSTN. In return, the license could impose slightly higher requirements for interception than presently imposed by the Information Technology Act.

We have compared the regulations for OTT-SPs under the IT Act 2000 (as amended) with the regulations for TSPs under the Telegraph Act 1885 (as amended), the license agreements (UL, UASL, ISP-L) and TRAI Regulations. Based on an analysis of the current laws and regulations, we suggest how TRAI needs to intervene to create this regulatory parity (for example in areas such as privacy, spam/UCC, interception etc.).

This framework has helped us to bring a more balanced approach from the perspective of both TSPs and OTT-SPs, while also taking into account technological convergence.

Issues for Consultation

Q.1 Which service(s) when provided by the OTT service provider(s) should be regarded as the same or similar to service(s) being provided by the TSPs. Please list all such OTT services with descriptions comparing it with services being provided by TSPs.

Table 1 shows the broad categorization of various OTT apps based on the nature of services provided by them² as “communication” or “non-communication” services.

Table 1: Categorization of OTT Services

Category	Types of OTT	Explanation	Example	Challenges for TSPs	Implications for TSPs	Same/Similar to TSPs?
Communication	Messaging and voice services (SMS and Voice/Video call)	Personal communication services: one-to-one and one-to-many	WhatsApp, Instagram, Messenger, Skype, WeChat, Jio Chat, Google Duo, etc.	Fixed and Mobile telephony substitute, SMS substitute	Competition, Loss of value of traditional services offered	Yes
Non-Communication	Application ecosystems	Mainly non-real time; linked to social networks, e-commerce;	<i>Social networks:</i> Facebook, LinkedIn etc.; <i>E-commerce apps including m-payments:</i> Amazon, Flipkart etc.; <i>Banking:</i> Paytm, PhonePe, etc.;	Another medium for Communications. (In case of ecommerce apps, it is another market place)	Competition, Loss of revenue of traditional services offered. (In case of ecommerce apps, loss of revenue to Existing brick and mortar establishments)	No
	Video/audio content	Broadcast services, one-to-many in structure	Netflix, YouTube, Amazon Prime etc.	Substituting TV	Not in direct competition/ Loss of audience (hence advertising) for traditional TV services	No

“Communication” Services: The services that are same or similar to those provided by TSPs are majorly the “communication” services, since they are directly competing with the primary business of the TSPs. According to a report by Credit Suisse, such services have highly impacted

² TRAI Consultation Paper on Regulatory Framework for Over-the-top (OTT) Services, dated March 27, 2015, available at <https://www.trai.gov.in/sites/default/files/OTT-CP-27032015.pdf>

the revenues of the TSPs³. The COAI has stated that TSPs lose around 15% of their revenue to OTT⁴.

“Non-Communication” Services: The services categorized under Application ecosystems and Video/audio content are different in nature from the traditional services being provided by the TSPs and hence are not same or similar to the services of TSPs.

Q.2 Should substitutability be treated as the primary criterion for comparison of regulatory or licensing norms applicable to TSPs and OTT service providers? Please suggest factors or aspects, with justification, which should be considered to identify and discover the extent of substitutability.

Substitutability is a narrow construct for being the primary criterion for comparison between services offered by OTT-SPs and TSPs, and the applicable regulations and legislations to OTT-SPs and TSPs. There are other criteria that call for intervention (full/partial) by the TRAI, such as loss of revenue by TSPs, roll-out/use of TSPs’ network infrastructure to the full capacity, non-level regulatory compliances for TSPs and OTT-SPs etc.

1. Loss of revenue by TSPs

Revenue loss is primarily because of the substitution of ILD voice services and SMS services by OTT services such as WhatsApp, Messenger etc. According to a report, a TSP earns about 35-36 paise a minute on a voice call. But, if the caller is using an OTT service to make the same call, the company gets just about a sixth, or around 6 paise, at current tariffs for data usage⁵.

However, growth in data revenue owing to the increased use of OTT services is projected to compensate for the revenue lost due to reduction in usage of ILD voice services and SMS services. Besides, many views have suggested that TRAI should intervene only in case of a market failure situation. Loss of revenue by TSPs is not a market failure condition and does not establish a need for intervention by TRAI.

Hence, this argument has less impact in the context of substitution.

³ https://economictimes.indiatimes.com/industry/telecom/ott-players-like-whatsapp-and-skype-could-cut-telcos-voice-revenues-by-half-says-credit-suisse-report/articleshow/47436964.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst, accessed on December 8, 2019.

⁴ “Should Services Like Skype and WhatsApp Be Regulated and Licensed, Asks TRAI”, published on November 16, 2018; <https://www.newsclick.in/should-services-skype-and-whatsapp-be-regulated-and-licensed-asks-trai> accessed on January 4, 2019

⁵ https://economictimes.indiatimes.com/articleshow/47436964.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst, accessed on December 8, 2019.

2.TSPs' Network Infrastructure - Roll-out and Usage

Network Roll-out

The services provided by OTT-SPs provide value for the creation and use of the underlying infrastructure. Without OTT-SPs, there is limited need for networks interconnecting with the internet. Therefore, it is an incorrect argument that investment in network infrastructure will reduce as a result of OTT services.

Investment in network infrastructure can be encouraged by streamlining policy on spectrum management, right of way and interconnection. For example, DoT is yet to finalize rules for spectrum trading and sharing thus preventing the secondary market from reorganizing fragmented and non-contiguous spectrum. Addressing these issues can increase investment in network infrastructure.

Network Usage

Although, empirical evidence suggests that TSPs have continued to invest in LTE/UMTS networks on a large scale despite substitution of facility-based voice services by internet-based services, the network usage by consumers on OTT services have impacted the TSPs' network usage share. Video/audio based OTT services are data exhaustive and consume large bandwidth (more than 7 times bandwidth). This leads to poor last mile Quality of Service, in terms of call drop and streaming failures such as buffering, failed connections, poor voice/video quality, etc.⁶

This is a major concern that needs TRAI's strong intervention.

3.Non-Level Regulatory Compliances for TSPs and OTT-SPs

This is a cause of concern as there are non-level regulatory compliances for TSPs and OTT-SPs even though they provide functionally equivalent services, which creates a non-level playing field. While OTT-SPs are regulated under the IT Act, the regulatory compliances for OTT-SPs are not equivalent to those for TSPs.

Q.3 Whether regulatory or licensing imbalance is impacting infusion of investments in the telecom networks especially required from time to time for network capacity expansions and

⁶ <https://knect365.com/media-networks/article/72f751a7-d7ff-472f-845a-35540de18e82/overcoming-network-congestion-in-ott-video-content-delivery>; <https://www.incognito.com/how-does-surging-ott-content-affect-bandwidth-consumption/>, accessed on December 20, 2018.

technology upgradations? If yes, how OTT service providers may participate in infusing investment in the telecom networks? Please justify your answer with reasons.

We have analyzed the regulatory imbalances and suggested recourse actions to correct the imbalances in response to Q7 and Q8 below..

In addition to the above, we present below examples of national regulations/ legislations of various countries (Table 2).

Table 2: Examples of National Regulations/Legislations

Country	Legislation
European Union	The European Union approved rules in April 2014 to ensure equal access of firms and individuals to online services and harmonize rules across national borders to create a unified European market Individually certain countries like France and Spain have blocked OTT providers when offering voice services that connect to the PSTN
UAE	OTT only allowed if they work with licensed telecom companies
South Korea	The KCC announced “Net Neutrality (NN) and Internet Traffic management Guidelines” in 2011 (Transparency, No blocking; No unreasonable discrimination, Reasonable traffic management) It is legal for telecom operators to charge their customers extra fees to use VoIP apps or block their use entirely Korean TSPs were planning to develop their own Mobile Instant Messaging Services (MIMS) services which would benefit more by making them interconnected and interoperable services rather than standalone products.
Canada	The CRTC has banned zero-rated mobile video streaming of carriers own services
Singapore	Specific licenses for VoIP connecting to PSTN. Peer-to-peer not licensed, subject to competition law
USA	Reasonable Network Management has been allowed by the agency.
Germany	VoIP is subject to the same regulatory framework which applies to all other telecom services due to the technology-neutral approach of the Telecommunications Act.

Source: https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Documents/Events/2016/Jul-RR-ITP/OTT_Muhammad_Ahmed_Kamal.pdf, accessed on December 20, 2018.

Such imbalances render the TSPs as just the facilitators of network infrastructure rather than a service provider. The OTTs are substituting the traditional services of TSPs while using their network infrastructure. According to a report from Heavy Reading, “the OTT players without

making any heavy investment make use of the available IP networks. The operators are getting concerned over the fact that OTT video providers will take away the value proposition offered by their VoIP services and they would be relegated from broadband network operators to a dumb pipe.”⁷

We recommend that TRAI must work on developing a framework for financially compensating the losses of TSPs, if any, due to OTTs riding on their network.

Q.4 Would interoperability among OTT services and also interoperability of their services with TSPs services promote competition and benefit the users? What measures may be taken, if any, to promote such competition? Please justify your answer with reasons.

Figure 1 shows the current status of interoperability among OTT-SPs and TSPs.

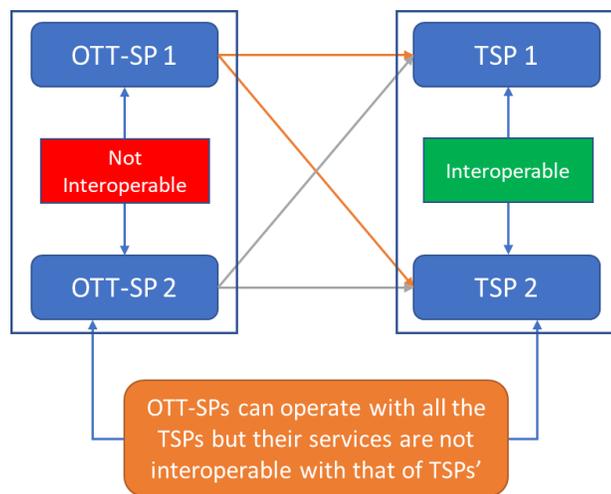


Fig 1: Status of Interoperability among OTT-SPs and TSPs

OTT-to-OTT

It is suggested that TRAI refrain from providing recommendations on OTT-to-OTT interoperability. The mandate of regulating such services is that of the Parliament by amending the IT Act and its rules thereunder since OTTs work at the service layer i.e. application and content layer (Fig 2).

⁷ http://staging.heavyreading.com/details.asp?sku_id=1728&skuitem_itemid=1026&promo_code=&aff_code=&next_url=%2Flist.asp%3Fpage_type%3Dall_reports, accessed on December 3, 2018.

OTT-to-TSP

The interoperability between OTT-SPs (only communication services) and TSPs would promote competition and benefit users in terms of ease of use and convenience. Such interoperability condition should be left to market forces to decide. However, the OTT-SPs must be mandated to provide the basic emergency services.

Q.5 Are there issues related to lawful interception of OTT communication that are required to be resolved in the interest of national security or any other safeguards that need to be instituted? Should the responsibilities of OTT service providers and TSPs be separated? Please provide suggestions with justifications.

Lawful Interception is a matter of National Security and there should be no exceptions to this. OTT-SPs must have the same regulations regarding interception as put upon the TSPs. Interception of OTT-SPs is mandated under Section 69 of the IT Act.

Rationale for Regulatory Parity

1. Lawful interception is a non-negotiable state policy that should be equally enforceable against communication services provided by OTT-SPs and TSPs.
2. OTT services are being increasingly misused by terrorists and perpetrators of crimes.

The framework for lawful interception

1. needs to be targeted and have sufficient safeguards to prevent misuse.
2. should be seriously enforced without exception; but should not create undue burden on the ecosystem.

Responsibilities of OTT-SPs and TSPs

TSPs

The Law enforcement agencies must be provided with the following data:

- identification data;
- content data in real time; and
- traffic data both historic as well as real time.

OTTs

OTT service provider must also fall under the scope of the Lawful Interception. This will enable same regulatory framework for similar services and will contribute to ensure national security.

The OTT service providers must provide the Law enforcement agencies with:

- access to their premises and systems;
- any information as requested; and
- any traffic data in their possession.

In a nutshell, OTT-SPs must provide the same data as the TSPs are required to.

Q.6 Should there be provisions for emergency services to be made accessible via OTT platforms at par with the requirements prescribed for telecom service providers? Please provide suggestions with justification.

Yes. The rules that exist for TSPs should be applicable to OTT-SPs providing similar kinds of specialized services. Those OTT-SPs that reach a critical mass should be mandated to provide these emergency services. For example, Skype provides emergency services in four countries (Australia, Denmark, Finland, and UK) on various platforms (Windows 10, Mac, Linux). Similar requirements should be imposed by India as well⁸.

Q.7 Is there an issue of non-level playing field between OTT providers and TSPs providing same or similar services? In case the answer is yes, should any regulatory or licensing norms be made applicable to OTT service providers to make it a level playing field? List all such regulation(s) and license(s), with justifications.

And

Q.8 In case, any regulation or licensing condition is suggested to made applicable to OTT service providers in response to Q.7 then whether such regulations or licensing conditions are required to be reviewed or redefined in context of OTT services or these may be applicable in the present form itself? If review or redefinition is suggested then propose or suggest the changes needed with justifications.

Yes, there is an issue of non-level playing field, considering the same/similar kinds of services provided by TSPs and OTT-SPs as given in the Table 1 and hence the regulatory imbalances that exist. We present below a table that suggests interventions to introduce reasonable regulatory parity between functionally equivalent “internet-based services”, “non-IP services” and “specialized services”. However, it is recognized that the specialized nature of specialized services

⁸ <https://www.skype.com/en/legal/emergency-calling/>, accessed on December 24, 2018.

may require substantially different treatment, which should be determined on a regulation to regulation and a service to service basis. It also recognized that arguments for regulatory parity between the “network layer” and “internet-based services” are incorrect as the two belong to different layers.

Table 3 attempts to outline the different regulations for OTT-SPs and TSPs, and delink the regulations attributable to the network and service layers of TSPs. The table also identifies the areas where there is regulatory imbalance and suggests a recourse.

Table 3: Regulatory Imbalances between TSPs and OTT-SPs and Suggested Recourse

Regulations	OTT-SPs (Service Layer) Internet Based Services	TSPs (Service Layer) Non-IP and Specialized Services	TSPs (Network Layer)	Layer to which the regulation belongs	Regulatory Imbalance?	Suggested recourse for correcting imbalance; or justification for maintaining present imbalance.
UCC/DND/Spam	No clear legislation on spam. Previously partially covered by Section 66A(c) of IT-Act, which has now been struck down by the Supreme Court	TRAI Regulation on 200 SMS per day. ⁹ TRAI Regulation on UCC. ¹⁰		Service	Yes	Spam & UCC over OTT services need to be regulated. However, the mandate to regulate spam is that of the parliament by creating a new act or amending the IT-Act, and not that of TRAI. TRAI may however recommend to the Government to consider an amendment to such effect in the IT-Act.
Privacy and Confidentiality	Section 43A of IT-Act	License Agreements (UASL ¹¹ , UL ¹²)		Service	No	Section 43A is reasonably at par with clause 39.2 of the UASL. Additionally, there is a Privacy Bill presently under consideration by the Government that also addresses privacy concerns relating to OTTs.

⁹ The Telecom Commercial Communications Customer Preference Regulations, "The Authority has mandated the service providers to implement a solution in their networks which will not allow sending of more than 200 SMS with similar 'signature' in one hour from any source or number, other than from a registered telemarketer or transactional message sending entity or a number exempted by the Authority."

¹⁰ http://www.trai.gov.in/content/VerReg/57_0_0.aspx, accessed on 17 April, 2015.

¹¹ 39.2 Subject to conditions contained in these terms and conditions, the LICENSEE shall take all necessary steps to safeguard the privacy and confidentiality of any information about a third party and its business to whom it provides the SERVICE and from whom it has acquired such information by virtue of the SERVICE provided and shall use its best endeavors to secure that :a) No person acting on behalf of the LICENSEE or the LICENSEE divulges or uses any such information except as may be necessary in the course of providing such SERVICE to the Third Party; and b) No such person seeks such information other than is necessary for the purpose of providing SERVICE to the Third Party. Provided the above para shall not apply where: a) The information relates to a specific party and that party has consented in writing to such information being divulged or used, and such information is divulged or used in accordance with the terms of that consent; or b) The information is already open to the public and otherwise known.

39.3 The LICENSEE shall take necessary steps to ensure that the LICENSEE and any person(s) acting on its behalf observe confidentiality of customer information.

39.4 The LICENSEE shall, prior to commencement of SERVICE, confirm in writing to the LICENSOR that the LICENSEE has taken all necessary steps to ensure that it and its employees shall observe confidentiality of customer information

41.4 The LICENSEE shall ensure protection of privacy of communication and ensure that unauthorized interception of messages does not take place.

¹² 37.2 Subject to terms and conditions of the license, the Licensee shall take all necessary steps to safeguard the privacy and confidentiality of any information about a third party and its business to whom it provides the Service and from whom it has acquired such information by virtue of the Service provided and shall use its best endeavors to secure that:

a) No person acting on behalf of the Licensee or the Licensee divulges or uses any such information except as may be necessary in the course of providing such Service to the Third Party; and
b) No such person seeks such information other than is necessary for the purpose of providing Service to the Third Party.

Regulations	OTT-SPs (Service Layer) Internet Based Services	TSPs (Service Layer) Non-IP and Specialized Services	TSPs (Network Layer)	Layer to which the regulation belongs	Regulatory Imbalance?	Suggested recourse for correcting imbalance; or justification for maintaining present imbalance.
Spectrum Allotment including Auctions and Revenue Sharing			Wireless Operating License r/w License Agreements (UASL, UL) r/w NIA	Network	No	There is no regulatory imbalance as the service layers of OTT-SPs and TSPs are treated at par. <i>See principle 7.</i>
Interconnection of Networks			TRAI Regulations; Reference Interconnect Order (RIO); License Agreements (UASL, UL).	Network	No	There is no regulatory imbalance as the service layers of OTT-SPs and TSPs are treated at par. <i>See principle 7.</i>
Interconnection of Services	No regulation.	TRAI Regulations; Reference Interconnect Order (RIO); License Agreements (UASL, UL).		Services	Yes	It should remain mandatory for OTT-SPs to get a Unified License for interconnecting Internet Telephony with the PSTN/PMLN. Alternatively, a trimmed down voluntary licensing arrangement could be created that allows OTT providers to interconnect with PSTN and terminate calls on the PSTN. Such a license would create slightly higher regulatory compliances for interception etc. OTT services maybe mandated to interconnect with each other if technically feasible and regulatorily desirable for a competitive marketplace.
Security & Integrity of			License Agreements	Network	No	There is no regulatory imbalance as the service layers of OTT-SPs and TSPs are treated

Regulations	OTT-SPs (Service Layer) Internet Based Services	TSPs (Service Layer) Non-IP and Specialized Services	TSPs (Network Layer)	Layer to which the regulation belongs	Regulatory Imbalance?	Suggested recourse for correcting imbalance; or justification for maintaining present imbalance.
Networks			(UL) ¹³			at par. <i>See principle 7.</i>
Interception & Decryption	Section 69 of IT-Act	Section 5 of Tele-Act; License Agreements (UASL, UL).		Services	Yes	While TSPs are required to create infrastructure and be technically compliant with lawful interception requests, OTT-SPs are not required to be technically prepared for interception; and may not be technically capable of honouring an interception request. There is need to move towards parity here. Ideally, the burden on TSPs should be substantially decreased. The other option, though infeasible in most instances, is to substantially increase interception requirements for those communication OTT-SPs that are based on server-side encryption and have achieved a minimum critical mass, wherein whether an OTT-SP has reached critical mass (on the basis of minutes of usage, data consumption or subscriber base) would be determined by TRAI. Those OTT-SPs that provide lawful interception in other countries but refuse to comply in India should be blocked.
Subscriber Verification	No regulation.	License Agreements (UASL ¹⁴ ,		Services & Networks	Yes	Subscriber identity verification can effectively happen only at the network layer, given the

¹³ 39.7 The LICENSEE shall induct only those network elements into its telecom network, which have been got tested as per relevant contemporary Indian or International Security Standards

¹⁴ 41.14 ... The LICENSEE shall ensure adequate verification of each and every customer before enrolling him as a subscriber; instructions issued by the licensor in this regard from time to time shall be scrupulously followed...

41.15 A format would be prescribed by the LICENSOR to delineate the details of information required before enrolling a customer as a subscriber. A photo identification of subscribers shall be prerequisite before providing the service.

Regulations	OTT-SPs (Service Layer) Internet Based Services	TSPs (Service Layer) Non-IP and Specialized Services	TSPs (Network Layer)	Layer to which the regulation belongs	Regulatory Imbalance?	Suggested recourse for correcting imbalance; or justification for maintaining present imbalance.
		UL ¹⁵).				fact that most service-layer platforms do not have the means of tying a user's physical identity with their virtual existence. There are some OTT-SPs that bind their users to a network-layer identification like their PSTN number (e.g., WhatsApp), in which case the demand for subscriber verification gets addressed despite the lack of regulatory parity.
Network Rollout Obligations			License Agreements (UASL, UL) ¹⁶ .	Network	No	There is no regulatory imbalance as the service layers of OTT-SPs and TSPs are treated at par. <i>See principle 7.</i>
Permission to terminate voice calls on the PSTN	No. ISP license prohibits connectivity of Internet Telephony with domestic PSTN ¹⁷	Yes. License Agreements (UASL, UL) ¹⁸ .		Service	Yes	It should remain mandatory for OTT-SPs to get a Unified License for interconnecting Internet Telephony with the PSTN/PLMN.
Emergency and Public Utility Services	No regulation.	License Agreements		Service	Yes	Those OTT-SPs that reach a critical mass should be mandated to provide these emergency services. For example, Skype provides emergency services in 4 countries

¹⁵ 39.17 (i) The Licensee shall ensure adequate verification of each and every customer before enrolling him as a subscriber; instructions issued by the Licensor in this regard from time to time shall be scrupulously followed. The Licensee shall make it clear to the subscriber that the subscriber will be responsible for proper and bonafide use of the service.

39.22 (i) Utmost vigilance should be exercised in providing bulk connections for a single user as well as for a single location. Provision of 10 or more connections may be taken as bulk connections for this purpose....

¹⁶ Refer section 34 in License Agreement for Provision of Unified Access Services after Migration from CMTS and section 4 in License Agreement for Unified License

¹⁷ v) The Licensee is not permitted to have PSTN/PLMN connectivity. Voice communication to and from a telephone connected to PSTN/PLMN and following E.164 numbering is prohibited in India.

¹⁸ The Licensee can also provide Internet Telephony, Internet Services including IPTV, Broadband Services and triple play i.e voice, video and data. While providing Internet Telephony service, the Licensee may interconnect Internet Telephony network with PSTN/PLMN/GMPCS network. The Licensee may provide access service, which could be on wireline and / or wireless media with full mobility, limited mobility and fixed wireless access.

Regulations	OTT-SPs (Service Layer) Internet Based Services	TSPs (Service Layer) Non-IP and Specialized Services	TSPs (Network Layer)	Layer to which the regulation belongs	Regulatory Imbalance?	Suggested recourse for correcting imbalance; or justification for maintaining present imbalance.
		(UASL, UL) ¹⁹ .				including the United Kingdom. Similar requirements should be imposed by India as well.
Quality of Service	No regulation	TRAI Regulation on Quality of Service		Service and Network	Yes	QoS delivered by OTT services is not fully in the control of the OTT-SP, unless they launch a specialised service that provides QoS guarantees. In such a case, they may be subject to appropriate regulation.
Bulk Encryption Prohibition	No regulation	License Agreements (UASL ²⁰ , UL ²¹).		Service	Yes	This regulation needs to be removed completely for both TSPs and OTT-SPs.
Domestic Routing of Network Traffic			License Agreements (UL ²²)	Network	No	There is regulatory imbalance between UL (Access) and ISP License; However this imbalance is between two kinds of licenses and does not involve the OTT-SPs since switching happens at the network layer.
End User Regulation (Cyber Crimes)	Section 43 of IT-Act	Section 43 of IT-Act		Service	No	Section 43 deals with end user cyber crimes and therefore equally applies to end users of OTT-SPs and TSPs.

¹⁹ 29.1 The licensee shall provide independently or through mutually agreed commercial arrangements with other Service Providers all public utility services including TOLL FREE services such as police, fire, ambulance, railways/road/air accident enquiry, police control, disaster management etc. While providing emergency services such as police, fire, ambulance etc. it shall be ensured that such calls originated shall be delivered to the control room of the concerned authority for the area from where call is originated.

²⁰ 41.12 The LICENSEE shall not employ bulk encryption in its network. Any encryption equipment connected to the LICENSEE's network for specific requirements has to have prior evaluation and approval of the LICENSOR or officer specially designated for the purpose. The LICENSEE shall be responsible for ensuring privacy of communication on its network and also to ensure that unauthorized interception of message does not take place.

²¹ 37.1 The Licensee shall not employ bulk encryption equipment in its network. Licensor or officers specially designated for the purpose may evaluate any encryption equipment connected to the Licensee's network.

²² 4.5 Location of switches and other elements.

Regulations	OTT-SPs (Service Layer) Internet Based Services	TSPs (Service Layer) Non-IP and Specialized Services	TSPs (Network Layer)	Layer to which the regulation belongs	Regulatory Imbalance?	Suggested recourse for correcting imbalance; or justification for maintaining present imbalance.
Blocking	Section 69A of IT-Act	License Agreements (ISP, UL) ²³ , (UASL) ²⁴		Service	No	There is reasonable parity.
Contribution to USOF			Section 9A of the Telegraph act		No	There is no regulatory imbalance as the service layers of OTT-SPs and TSPs are treated at par. <i>See principle 7.</i>
SACFA		License Agreements (UASL ²⁵ , UL ²⁶)		Network	No	There is no regulatory imbalance as the service layers of OTT-SPs and TSPs are treated at par. <i>See principle 7.</i>

Source: IITCOE's response to "TRAI Consultation Paper on Regulatory Framework for Over-the-top (OTT) Services, dated March 27, 2015

²³ 7.11, 34.24 ... In the interest of national security or public interest, the ISPs shall block Internet sites and / or individual subscribers, as identified and directed by the Licensor from time to time.

²⁴ There is no such clause in UASL.

²⁵ 43.3 Site clearance in respect of fixed stations and its antenna mast shall be obtained from the WPC Wing for which the applicant shall separately apply to the Secretary, Standing Advisory Committee on Frequency Allocations (SACFA) WPC Wing in a prescribed application form.

²⁶ 30.11 (iii) For use of space segment and setting up and to start operating the Earth Station etc., Licensee shall directly coordinate with and obtain clearance from Network Operations Control Centre (NOCC), apart from obtaining SACFA clearance and clearance from other authorities.

Q.9 Are there any other issues that you would like to bring to the attention of the Authority?

No comments.

Recommended Framework for Intervention by TRAI

Introduction to Recommended Framework

In this section, we propose a set of principles that collectively prescribes the framework for intervention by TRAI. The framework provides guidelines for introducing reasonable regulatory parity between functionally equivalent services provided by TSPs and OTT-SPs.

The framework adopts a two-layered approach. The first layer comprises of network and infrastructure (collectively called the network layer). The second layer comprises of services and applications (collectively called the service layer). The framework further divides the second layer into “Non-IP Services”, “Specialized Services” and “Internet-Based Services”. TSPs operate over both the network layer and the service layer. Services such as PSTN voice calls provided over a circuit switched network are referred to as Non-IP Services. The concept of “Specialized Services” is borrowed from the European Union. Practically, the term “Specialized Services” refers to traditional services that have migrated to IP networks (that are not interconnected with the Internet) such as facilities-based VoLTE calls to PSTN and IPTV. This concept is introduced to envision reasonable regulatory parity between functionally equivalent “Non-IP Services”, “Specialized Services” and “Internet-Based Services”. A short note with various definitions and critiques of “Specialized Services” is provided in Appendix 1.

Principles Comprising Recommended Framework

Group 1 - General Principles

1. The network layer and service layer of TSPs should be delinked; or deemed to be distinct for the purpose of this consultation.

Explanation:

- While OTT-SPs operate only in the service layer, TSPs operate both in the network layer and the service layer;
- Active infrastructure (including spectrum) is a part of the network layer;
- Access to a data network and access to a voice network are a part of the network layer;
- SMS, PSTN voice calls, OTT applications, VAS services etc. are a part of service layer.

2. Services in the service layer should be sub-classified into “non-IP services”, “specialized services” and “internet-based services”.²⁷
 - a. Services provided over a non-IP based architecture should be classified as “Non-IP services”.
 - b. Services provided over an IP based architecture in a closed network (i.e. not interconnected with the internet or relying on strict admission control) including facility-based services should be classified as “specialized services” (if they demonstrate the need for special treatment over and above the “best efforts” delivery guarantee possible over the Internet).

Explanation:

- Concept of specialized services is borrowed from the European Union to refer to facility-based services that have migrated to an IP architecture. Refer to different definitions of “specialized services” in Appendix 1.
 - Facility based services such as PSTN VoIP calls or IPTV services provided by TSPs would be a part of “specialized services”.
 - Voice over LTE/IP calls terminating on the PSTN would be treated as “specialized services” since they operate over a network distinct from the internet; even if they share the same network infrastructure - it relies on strict admission control. In comparison, voice/video calls provided using internet data over LTE would be treated as “internet-based services”.
 - A regular Internet service must demonstrate a rational nexus between the differential treatment and its need in the form of demonstrating that “best efforts” delivery of IP packets does not suffice for the application or service.
- c. Services provided over the internet should be classified as “internet-based services”. Such classification depends on the nature of the service and not the provider of the service: “internet-based services” may be provided by OTT-SPs or by TSPs.

Explanation:

- OTT applications would automatically be classified as internet-based services, unless it has specifically been classified as a “specialized service”.
- Voice and video calling over the Jio Chat application released by Reliance Jio (a TSP) would be classified as an internet-based service.

Group 2 - Regulatory Parity Principles

1. The network layer *may* be regulated by way of licensing.
2. Non-IP Services and Specialized services *may* be regulated by way of licensing.²⁸

²⁷ Specialized Services is a construct imported from the European Union.

²⁸ The current regime of a single license for the Network Layer and Specialized Services can continue.

3. Internet based services *should* be regulated by instruments other than licensing. Such instruments should preferably be in the form of legislations like the IT Act and its rules thereunder.
4. There needs to be regulatory parity between communications oriented “internet-based services” provided by OTT-SPs and TSPs.
5. There needs to be reasonable regulatory parity between functionally-equivalent “internet-based services”, “non-IP services” and “specialized services”. However, the specialized nature of specialized services may require substantially different treatment, which should be determined on a regulation to regulation and a service to service basis.
6. Arguments for regulatory parity between the “network layer” and “internet-based services” are incorrect as the two belong to different layers.
7. Regulations for “internet-based services” may create sub-classifications such as communication services, market services and aggregation services, provided there is a reasonable nexus between the classification and the objective sought to be achieved by the regulation.²⁹
8. Regulations for “internet-based services” need to be such that they promote innovation by small entrepreneurs and innovators while also incorporating concerns related to security, lawful interception and removal of unlawful content.
9. Regulatory parity may be sought to be arrived at by decreasing the existing regulations on TSPs and not merely by increasing regulation on OTT-SPs.

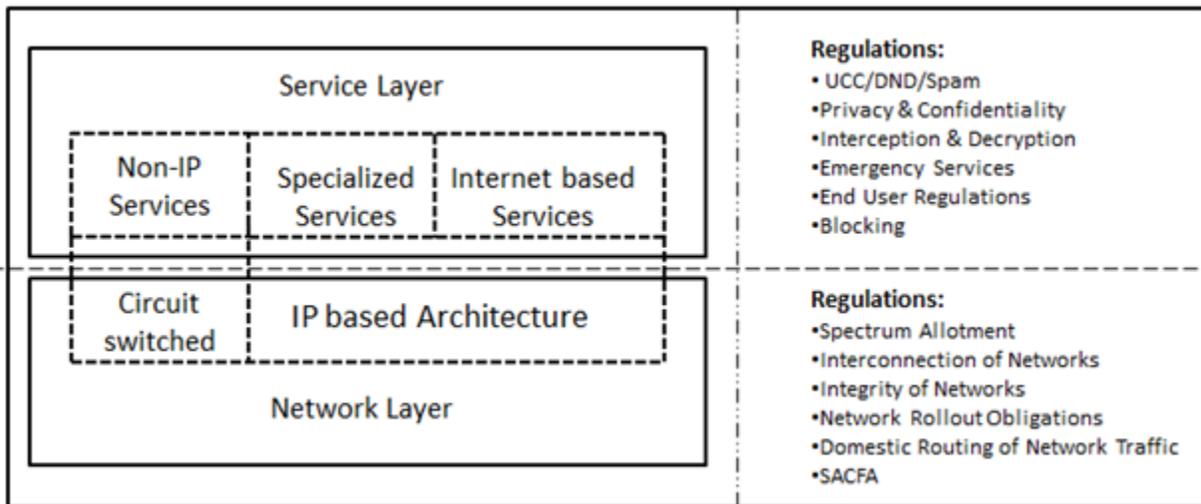


Fig-2: Layered Framework with Corresponding Regulations

²⁹ For example, regulations relating to emergency communications have a reasonable nexus with the category “communications services”

Appendix 1 - Note on Specialized Services

Different definitions of Specialized Services

BEREC (2011)	“Specialized services” are electronic communications services that are provided and operated within closed electronic communications networks using the Internet Protocol. These networks rely on strict admission control and they are often optimized for specific applications based on extensive use of traffic management in order to ensure adequate service characteristics.
BEREC (2012)	Specialized services are usually designed to provide guaranteed characteristics of end-to-end connections (e.g. quality of service, availability and/or security). These characteristics are generally stated in contractual arrangements. Technically, specialized services typically rely on access restrictions and extensive use of traffic management techniques or strictly enforced capacity planning and provisioning.
Digital Europe ³⁰	“Specialized services” are designed for specific content, applications or services, or a combination thereof. Such services rely on traffic management or other networking techniques to ensure the desired or necessary level of network resources that determine subscriber experience (such as capacity, quality) with the aim to securing enhanced quality characteristics. They are delivered from end-to-end and are not marketed or widely used as a substitute for Internet access services.
Dynamic Coalition on net neutrality	“Specialized services” are electronic communications services that are provided and operated within closed electronic communications networks using the Internet Protocol, but not being a part of the Internet. The expression “closed electronic communications networks” refers to networks that rely on strict admission control.
Amendment 235	“Specialized service” means an electronic communications service optimized for specific content, applications or services, or a combination thereof, provided over logically distinct capacity, relying on strict admission control, offering functionality requiring enhanced quality from end to end, and that is not marketed or usable as a substitute for internet access service.

Conditions to the application of Specialized Services

- “Quality of service to specialized services is not secured by giving these services an explicit higher priority level than the internet-based services, but rather by having adequate capacity reserved for the specialized services without this being done at the expense of Internet traffic.”

³⁰ http://www.digitaleurope.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=721&PortalId=0&TabId=353

- Providers of content, applications and services and providers of electronic communications should therefore continue to be free to conclude specialized services agreements on defined levels of quality of service as long as such agreements do not impair the quality of internet access service.
- Amendment 236 states that “Providers of internet access, of electronic communications to the public and providers of content, applications and services shall be free to offer specialized services to end-users. Such services shall only be offered if the network capacity is sufficient to provide them in addition to internet access services and they are not to the detriment of the availability or quality of internet access services. Providers of internet access to end-users shall not discriminate between functionally equivalent services and applications.”