

Executive Summary

Telecom Service Providers provide multiple services, however, all of those services are based on a limited natural resource that the TSPs have acquired from the Government by paying a licensing fee and signing a contract. We hope that the responses submitted to the earlier consultation paper on Regulatory Framework for Over-the-top (OTT) services will also be considered while analyzing the responses to the current consultation paper, as the issues dealt with are largely similar.

TSPs are given a license to use a limited natural resource. Natural resources belong to the State and the public at large. Any use of a natural resource has to be done for the benefit of the public. When it comes to the allocation of spectrum to TSPs, this is done for two reasons: (a) procurement of money by the Government for the allocation of the natural resource; and (b) benefits to the public in terms of the availability of that natural resource to the public at large.

The use of any portion of that natural resource by one TSP cannot overlap with the use of the same portion of that natural resource by another TSP. Therefore, bandwidth has to be allocated to different TSPs based on certain criteria such as their competence and capability to make the best use of the wavelengths that have been allocated to them. Their primary task is to make that natural resource useable to the rest of the society. In effect, they perform the task of a pipeline. TSPs are public utility providers. Ineffective use of a license by a TSP is contrary to the public interest as the wavelengths to be allocated for use by a TSP are limited, the barriers to entry are higher and there cannot be an unlimited number of TSPs competing in the market since the resource to be divided amongst them is limited. If a TSP does not use a license effectively, the public at large would suffer, development would slow down due to a lack of the availability of the natural resource and people's ability to exercise their

rights and freedoms would be curtailed.

Telecom Service Providers operate in the form of an oligopoly – there are few players in the market that provide the same services as a result of the limited natural resource that they are dealing with. With changing times, the services being provided by TSPs had to evolve. If they did not, they would die out. In earlier days, the primary task of a TSP was to provide a telegraph service. This then evolved into providing a telephone and telefax connection to businesses and homes. With 2G mobile phones and mobile networks came the SMS and mobile data. With evolving networks, mobile data became faster and more readily available. In the meantime, broadband access to home had also become cheaper and faster. Now, there are two modes of accessing the same, open and fast internet – broadband and mobile data. The services being offered by TSPs and the tariff plans that they offer have shifted in tandem with the changing technologies, but the primary task that a TSP has to perform remains the same – make the best and the most efficient use of the limited natural resource over which they have an oligopoly. Today, the primary task of a TSP is to provide access to the internet. They are the gatekeepers of the internet, holding the keys to the digital world in their hands, with the ability to charge money for a service that no OTT will ever be able to. The onus of generating profits for TSPs is on the TSPs; it is not on the Regulator, the public and OTT services to create an environment in which TSPs can flourish with their control over the limited resources. The criteria to be used by them for bidding on spectrum, allocating resources for development of their networks, staffs and other costs need to be kept in mind while creating their tariff structures. If TSPs are unable to create a tariff structure in which they can generate profits from their ability to provide access to a limited natural resource, then there is an inability or unwillingness among the TSPs to foresee their costs and create appropriate tariffs and bids.

This situation cannot be resolved by imposing similar costs onto OTT services. OTT services exist as a

polypoly. The reason that the OTT ecosystem has flourished is that it is not bound by the same restrictions and limitations as the TSPs. On the other hand, OTT service providers cannot sell access. They can only make their services available to those that already have access to the Internet. Innovations from the OTT ecosystem have led to increased efficiency in use of resources by the TSPs. The TSPs now have VoIP thanks to technologies developed for use over the internet. This has led to a decrease in costs and increase in efficiency of voice calls. OTT services operate with lower barriers to entry than TSPs. OTTs can operate in a free market without any limitations on the competition, so if a particular app does not provide sufficient QoS, then users are free to switch to any competitor. However, QoS of TSPs needs to be regulated because of the existence of an oligopoly over a limited natural resource. If the QoS of a TSP is below par, there are only a few options available to the users.

Unlike what TSPs would have us believe, the primary task of a TSP is not to make the largest profits; the primary task of a TSP is to make the best possible use of the wavelengths that they have exclusive access to. TSPs and OTT services cannot be seen to be competing with each other and do not require to be brought to the same playing field under the same restrictions and regulations, as the domains in which they are operating are not the same. We must not forget that TSPs are the sole gatekeepers of the Internet, with an ability to charge appropriately for that privilege.

OTT service providers are already regulated under the Information Technology Act, 2000 along with the Rules laid down under the said Act. TRAI has no power to regulate OTT services. The current laws permit for their regulation under the Information Technology Act, 2000 and the Rules made thereunder. Our country is already in the process of formulating a data protection law as well as undergoing a consultation process for the amendment of the Information Technology (Intermediaries Guidelines) Rules, 2011 under Section 87(2)(zg) read with Section 79(2) of the Information Technology Act, 2000.

If further regulation is considered necessary, it would have to be done under a new law.

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.

TSPs have the exclusive rights to commercialize a limited natural resource – spectrum. This cannot be done by anyone else without paying the appropriate charges and acquiring the appropriate rights from the Government. The task in front of TSPs is to make the best, most efficient and competitive use of the spectrum allocated to them in order to generate revenues necessary for sustenance and development of their networks. Under the latest technologies, TSPs are dedicating the entire spectrum towards a data pipeline with individual services such as voice calls travelling over the said data pipeline.

Due to their exclusive rights over the spectrum, TSPs are the gatekeepers to the Internet. They perform the task of a utility provider that provides the infrastructure over which transfer of information takes place. Earlier, that information took the form of transmission of text over the telegraph network using morse code. With an evolution of technologies, this changed into transmission of voice over landline phones. The next evolution in the telecommunications networks was the introduction of data over wired and wireless networks. Throughout the evolution of technologies, the core task of TSPs has remained the same, i.e. transmission of information, while the evolution of technologies has resulted in newer forms of information being transmitted by TSPs, going from morse code to voice to the Internet.

The only similar services between TSPs and OTT service providers are written and oral communications. Here, too, we need to be careful as this description in itself is too broad as it covers

communication that is ancillary to the purpose of a service, such as comments within collaborative document editing, comments on a webpage or communication within a video game. EU's draft Electronic Communications Code has taken a positive step in disregarding services where communication is an ancillary function. Our view of OTT services as covered under the present discussion paper, therefore, is limited to only those OTT services where written and/or oral communication is the primary objective of the service.

TSP networks and OTT service providers have diverged in the services that they provide. On one hand, OTT services have evolved from basic written and oral communication to include stickers, video calls and other forms of communication. On the other hand, the technologies in use by TSPs have now evolved beyond such services and gone into the realm of providing a pipeline for the Internet. Instead of OTT service providers offering services that are the same or similar to services being offered by TSPs, it is now the TSPs that are offering services that are the same or similar to services being offered by OTT service providers such as voice calls, written communication and video content over the Internet. These OTT services provided by TSPs are regulated under the Information Technology Act, 2000. They must adhere to the Information Technology (Intermediaries Guidelines) Rules, 2011 under Section 87(2)(zg) read with Section 79(2) of the Information Technology Act, 2000 in the same manner that any other OTT service must abide by the Act and these Rules.

While voice calls over the internet were possible on 3G networks, the latency and bandwidth available were insufficient for a reliable voice call. 4G (LTE) brought a large enough jump in both bandwidth and latency to make it possible for voice calls to take place over the mobile data network with latency below 0.1 second almost 99 percent of the time.¹ Research by Ofcom in UK showed an average latency

¹ The Difference Between 3G and 4G VOIP Calls, Idtexpress. Available at <https://www.idtexpress.com/blog/2018/02/05/difference-3g-4g-voip-calls/>, last seen on 30 November 2018.

of 53.1 milliseconds in 4G networks.² 5G networks aim to lower this latency even further, with URLLC (Ultra-Reliable Low-Latency Communications) networks targeting a latency as low as 1 millisecond.³

Spectrum allocated to TSPs is now no longer being used to transmit voice or written communication. It is being used to maintain an Internet connection with each device connected to the network, and to transmit data to and from such devices over the Internet. Since the basic service being offered by TSPs is now an active Internet connection with voice and text riding over the Internet, most TSPs now offer tariffs with unlimited voice communication since the primary service now is the Internet, and not voice calls or text messages. In this regard, OTT service providers are incapable of competing with 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.

No, substitutability should not be treated as the primary criterion for comparison of regulatory and licensing norms applicable to TSPs and OTT service providers. The realm in which they operate is not the same. TSPs are allocated a limited spectrum, with a requirement to maintain sufficient quality of service for the services being provided using that spectrum. The intention here being that the spectrum must be utilized optimally. Sub-par utilization of the spectrum would be detrimental to the growth of the economy and the exercise of the rights of the people of our country as the spectrum is a limited

2 Ofcom research shows 4G significantly outperforms 3G networks, Ofcom. Available at <https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2015/4g-outperforms-3g>, last seen on 06 January 2018.

3 Ultra-Reliable and Low-Latency Wireless Communications: Tail, Risk and Scale, Mehdi Bennis, Merouane Debbah and H. Vincent Poor. Available at <https://arxiv.org/pdf/1801.01270.pdf>, last accessed on 07 January 2018.

natural resource. Two different TSPs cannot make use of the same spectrum at the same time. Therefore, it is essential to regulate and maintain quality of service in terms of making the spectrum useful to the public by the TSPs.

OTT service providers, on the other hand, provide services that require transmission of data over the Internet. OTT service providers do not have any control over how the infrastructure is developed or controlled. TSPs own, control and provide such infrastructure in the form of a pipeline to the Internet using the spectrum that has been allocated to them. This gives TSPs a distinct edge over OTT service providers. All information transmitted by TSPs over the latest technologies takes place in the form of transmission of packets of data, however, voice traffic packets in VoLTE have priority over data packets. Hence, even in situations of instability or high latency in voice calls through OTT services, voice calls are stable with low latency when placing a call through the TSP.

Therefore, even though the act of transmitting voice or text might have similar outcomes whether it is done through a TSP or an OTT service provider, the outcomes vary significantly. In addition, the task of a TSP is to make optimum use of the spectrum allocated to them in order to make that spectrum useable by the public. Today, this means making that spectrum available in the form of an open Internet. This ability rests solely in the hands of TSPs without any possibility of any competition from OTT service providers when it comes to making the spectrum available for use.

The need of the hour is for TSPs to further refine tariffs and for regulation of TSPs to be reduced; it is not to increase regulation of OTT service providers.

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

Telecom networks are based on the use of a limited natural resource (spectrum) that is allocated to service providers. No two entities can use the same spectrum at the same time. This spectrum is now used for the provision of voice, text and Internet connections to the people. Due to the limited number of entities that have the rights to use the spectrum, TSPs have an oligopoly on the use of the spectrum. Without their use of the spectrum, mobile Internet would not exist.

As observed by Professor Tim Wu, Professor of Law at Columbia University in his seminal paper on net neutrality, the argument for a neutral Internet must be understood as the concrete expression of a system of belief about innovation, whose adherents view the innovation process as a survival-of-the-fittest competition among developers of new technologies. Models of development must not vest control in any initial prospect-holder, private or public, who is expected to direct the optimal path of innovation, minimizing the excess of innovative competition.⁴ OTT service providers cannot be blamed for any perceived or actual lack of investments in telecom networks. The core services being provided by TSPs and OTT service providers are not the same as the former exploits a limited natural resource, while the very existence of the latter makes the former's services more useful and necessary for the public.

If TSPs are unable to generate sufficient investments and profits, then they need to revise their tariff plans in order to generate increased profits from their data traffic.

⁴ Network Neutrality, Broadband Discrimination, Tim Wu, Journal on Telecom and High Tech Law. Available at http://adam.curry.com/enc/20140501152806_timwu2003netndoc.pdf, last accessed on 30 November 2018.

Q.4 Would inter-operability among OTT services and also inter-operability 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.

Yes, inter-operability among OTT services would promote competition and benefit the users as it would lower the barriers for entry. Before the Internet was walled off into closed ecosystems, communication over the Internet was based on open standards such as Newsgroups,⁵ Internet Relay Chat (IRC),⁶ Extensible Messaging and Presence Protocol (XMPP)⁷ and email. Being based on open standards, they promote competition among different service providers as the barriers to entry into these ecosystems are low. Users of these standards are not locked into a single client as they can easily switch to another service provider that can connect them to the same userbase over the same technological standard. Some of the most popular modern closed chatting software originated as XMPP clients with their dedicated servers, and then evolved into a closed environment with user lock-in once they had a large base. Advancements made in these closed software were not propagated back to the open standard, thus raising the barriers for entry for new developers as they now had to compete with established software with their locked-in large userbase.

Conversion back to open standards cannot be forced, as that would mean depriving society of the advances that have been made in technologies. Instead, we need to focus on developing and promoting the adoption of open standards to avoid vendor lock-in, innovation and collective advancement. Government sponsored development of open standards and educational campaigns regarding their

5 RFC 1036 – standard for interchange of USENET messages

6 RFC 1459 - Internet Relay Chat Protocol

7 <https://xmpp.org/>

benefits are required to drive mass adoption of open standards before any action can be taken to prevent further vendor lock-in in the sphere of online communication.

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.

Although it cannot be denied that there are differences between the surveillance and law enforcement requirements imposed on TSPs and OTT service providers, most of these differences fall away when one takes a closer look at the current as well as the developing legal scenario in India and the world at large.

India currently has correctly placed obligations upon TSPs and OTT service providers under different laws. While the former has a duty to make spectrum useable by the public in the form of communications services, the latter is a part of a free market ecosystem that exists on top of the Internet. Without the former, the latter cannot exist, however, the reverse is not true.

While TRAI can regulate the use of the spectrum by TSPs, TRAI has no power to regulate or even make recommendations to the Department of Telecommunications regarding OTT service providers. Their regulation can and does happen through a separate law – the Information Technology Act, 2000 along with certain sections in the Indian Penal Code, Criminal Procedure Code, and sectoral laws, amongst others. Intermediaries such as OTT service providers, including TSPs in their provision of OTT services, are required to abide by the Information Technology (Intermediaries Guidelines) Rules,

2011 under Section 87(2)(zg) read with Section 79(2) of the Information Technology Act, 2000. The Ministry of Electronics and Information Technology (MeitY) is currently undertaking a public consultation in order to amend these Rules. The amendment aims to further regulate intermediaries such as OTT service providers. TRAI has no power to regulate OTT services. Instead, the power under the current laws rests with MeitY. If action is required beyond the scope of what is permissible under the Information Technology Act, 2000, then a new law would be needed for this purpose.

Surveillance of Internet networks is provisioned by Sections 69 and 69B of the Information Technology Act, 2000 read with the Information Technology (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009 as well as the Information Technology (Procedure and Safeguards for Monitoring and Collecting Traffic Data or Information) Rules, 2009. These, along with Section 5 of the Indian Telegraph Act, 1885 read with Rule 419A of the Indian Telegraph Rules, 1951, lay down the substantive and procedural frameworks under which Law Enforcement Agencies may collect communications data and meta-data from communications service providers. In the case of TSPs, their respective service licenses contain clauses that further outline certain security conditions in support of the broader legislative framework.

The telecommunication interception law in our country (Sections 5 and 26 of the Telegraph Act) is outdated as it was framed during the British era for foreigners to rule over an indigenous population. It was made before the Constitution of India was framed, in a time before fundamental rights had been granted to the population of India. The lawful interception requirements under the License Agreements were made with the same assumptions regarding privacy and security as were prevalent in during the British rule. In 2017, a nine-judge bench of the Supreme Court of India has recognized that the Right to Privacy is protected as an intrinsic part of Right to Life and Personal Liberty under Article 21 of the

Constitution and other freedoms guaranteed under Part III of the Constitution.⁸ Instead of requiring backdoors, weakening of encryption or increased surveillance on OTT platforms, we need to revisit and review the surveillance and interception provisions under the Telegraph Act, the Rules framed thereunder and the lawful interception requirements under the License Agreements for compliance with the Right to Privacy as per the Supreme Court's judgment.

Today, doctors and lawyers are conducting confidential communications with their clients over end-to-end encrypted communication platforms such as WhatsApp. Journalists are using these platforms to communicate with their sources. Members of police and armed forces are sharing information internally through these platforms. Financial information is also shared by people over these platforms. If these platforms are required to impose any form of surveillance or interception, then the right to privacy and freedom of speech and expression along with the entire digital economy of the country would be at high risk. Encryption now forms the backbone of the digital economy. A large part of a sustainable digital economy is based on trust. If a country requires weakening of encryption or any form of backdoors, then the encryption and security products originating from or taking place in that country cannot be trusted for undertaking any task that involves personal data. Platforms that are required to implement such requirements would be faced with a choice to stop conducting business in India, weaken the security for their users across the globe, or to split their user base into (a) a global community except India with high security and (b) an isolated group of users in India that face high risk with weakened security. In such a situation, no OTT communication service originating in India would be trusted by the rest of the world. We recommend against any surveillance or interception measures on any OTT platform.

8 K.S. Puttaswamy and Ors. v. Union of India and Ors [W.P.(C). No. 494/2012]

While Section 43 of the Information Technology Act, 2000 read with the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011 protect only sensitive personal data or information, India is currently in the process of formulating a new data protection law. This law would impose restrictions and requirements upon OTT platforms for the collection, use, storage, transmission, sale and other activities related to personal data. It would be prudent for TRAI to take a wait-and-watch approach towards further developments in this area instead of attempting or recommending any regulation of OTT platforms at this juncture. Instead, it would be prudent to revisit the existing surveillance and interception requirements in light of the Supreme Court's judgment of the Right to Privacy.

On the question of compliance where the TSP or a content provider is based outside India, the Information Technology Act has broad territorial jurisdiction that extends to computer networks outside the country as well. Under Section 75 of the Act, this jurisdiction can apply to an offence or contravention (say that of sensitive data protection rules) as long as it involves a computer, computer system or computer network located in India. While MLATs have proven to be a slow method for getting access to data, the proper way of approaching the situation would be to participate in multi-national agreements for faster access to data across borders for law enforcement purposes. Any approach that is based on requirements to store data or a copy of the data within India would hamper innovation and the use of the latest technologies in the country by increasing the cost for compliance and raising barriers for entry. This would impact all industries and all sectors as every sector is now dependant upon digital communication, storage, transfer and processing of data.

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.

Emergency services, if made accessible via OTT platforms, will have to take one of three forms:

1. Require every emergency service control room to be present and active on every popular OTT platform. This option is infeasible as it would require additional equipment and personnel in emergency service control rooms.
2. Connect from OTT platform to emergency service control rooms – this would require interoperability with TSPs as asked under question 4 above. There are multiple reasons for not recommending this approach. It would increase the barriers for entry for new players in the OTT communications market without any significant direct advantage to end users. The communication would pass through the OTT platform. The reliability of the communication would depend upon the presence or absence of a reliable data connection with low latency and low load on the network. Selective data streams cannot easily be prioritized over other data streams without violating fundamental principles of Network Neutrality. Even in the best of situations, contacting emergency service control rooms via OTT applications would be less reliable than contacting emergency services without going through the OTT platform.
3. Alternatively, a much simpler route could be taken – whenever a user attempts to contact emergency services, the default dialler app on the user’s device could be automatically opened to place an emergency call through the TSP’s network. This does not require any new infrastructure to be developed, maintained or monitored. It would also not require any

additional Quality of Service checks. OTT platforms would need to develop the capability to route calls to emergency numbers through the device's default dialler app. In case a user is accessing an OTT platform through a device that does not have the capability of making a phone call, the user can be provided directions for calling emergency services.

Because of the above, especially due to higher reliability and priority of calls placed through a TSP's network, we recommend that any provision for OTT platforms to mandatorily make emergency services accessible through their platforms should take the form of transmitting such communication through a TSP's network instead of the OTT platform.

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.

OTT providers and TSPs that provide same or similar services (written and oral communication) exist and operate in entirely different realms. While the objective achieved through the use of these two might be the same – communication in written or oral form – TSPs and OTT providers are not in direct competition with each other. One of them has an oligopoly over the use of a limited natural resource in the form of spectrum, while the other faces unlimited competition.

TSPs have multiple distinct advantages over OTT services:

- TSPs have an oligopoly over the use of radio wave spectrum. They have exclusive rights to make this spectrum useful by providing access to this spectrum to the public at large. OTT

providers cannot enter this space.

- Communication through TSP's network can reach any other user of any TSP, so a user can call or write messages to any user of any TSP's network. However, communication through most OTT services is limited to users of that particular OTT service. Users of any popular instant messaging service, for example, can only reach other users of that instant messages services. In order to overcome this limitation, some OTT messaging services have incorporated an ability to send SMS through that OTT app in case the intended recipient of the message is not a user of that app.
- Voice calls made through TSP networks are prioritized over voice calls made through OTT platforms. Packets of data containing TSP's VoIP are prioritized over other data packets, while packets of data containing OTT VoIP compete with all other data packets. OTT services rely on the quality, stability and load of a data connection at any moment. If a data connection is under high load, then a voice communication over that connection is likely to suffer from dropped packets or high latency, while voice communication through the TSPs network would not suffer the same fate due to prioritization of these packets.

Additionally, OTT service providers are required to comply with the Information Technology Act, 2000, including the requirements mentioned under our comments to Question 5 above.

There is no non-level playing field between TSPs and OTT service providers as the two are not playing in the same field. OTT service providers can never run a TSP out of business, as an OTT service cannot exist without a TSP. Unfair regulation of a TSP is a concern that needs to be examined separately.

Q.8 In case, any regulation or licensing condition is suggested to be 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.

N/A.

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

As mentioned in our comments to Questions 5 and 7 above, OTT service providers are already regulated under the Information Technology Act, 2000 along with the Rules laid down under the said Act. TRAI has no power to regulate OTT services. The current laws permit for their regulation under the Information Technology Act, 2000 and the Rules made thereunder. Our country is already in the process of formulating a data protection law as well as undergoing a consultation process for the amendment of the Information Technology (Intermediaries Guidelines) Rules, 2011 under Section 87(2)(zg) read with Section 79(2) of the Information Technology Act, 2000. The correct body for undertaking such an exercise is the Ministry of Electronics and Information Technology. If regulation is considered necessary beyond what is permissible under the Information Technology Act, 2000, it would have to be done under a new law.