27 December 2018

Shri. Asit Kadayan,
Advisor (QoS),
Telecom Regulatory Authority of India (TRAI), Mahanagar Door Sanchar Bhawan,
J.L. Nehru Marg, (Old Minto Road)
New Delhi - 110002, India
Email: advqos@trai.gov.in, Tel: +91-11-2323-0404

Subject: Submission on the Consultation Paper on Regulatory Framework for Over-The-Top (OTT) Communication Services in India *(Updated from the submission made on 10 December 2018)*

Dear Sir,

On behalf of the **Asia Internet Coalition (AIC) and its members**, I am writing to express our sincere gratitude to the Telecom Regulatory Authority of India (TRAI) for the opportunity to submit comments on the Consultation Paper on Regulatory Framework for Over-The-Top (OTT) Communication Services. The AIC is an industry association comprised of leading internet and technology companies. AIC seeks to promote the understanding and resolution of Internet and ICT policy issues in the Asia region. Our members include AirBnB, Amazon, Apple, Expedia, Facebook, Google, LinkedIn, LINE, Rakuten, Twitter and Yahoo (Oath).

The unprecedented transformation which India is currently undergoing, has posed many opportunities for companies offering OTT services. Consumer preferences and content consumption patterns over the internet have evolved over a period of time in a way that is expected to drive and determine the focus areas for the growth in the OTT market in India. India's online video advertising market will contribute close to INR 80 billion (US$ 1.13 billion) out of total digital advertising market of INR 185 billion (US$ 2.62 billion) in revenue by 2020. Advertising video on demand (AVoD) services will see a compound annual growth rate (CAGR) of 38% between 2016 and 2021. Music OTT subscription market is expected to grow from INR 1.15 billion (US$ 16 million) to INR 10.3 billion (US$ 146 million) by 2020.[1] OTT is successful because of its innovation and the value it gives to its end customer.

In seeking to create a "level playing field" between OTT providers, and legacy media and network providers, introducing rigid frameworks could stymie innovation and competition or cause irreversible consumer harms. Imposing a strict and unyielding regulatory framework based on telecommunications regulation and licensing could engender new risks. OTT service providers should not be subject to fresh regulations since they are not comparable to the services offered by telecom operators. Further, the new regulatory framework for OTT players would curtail innovation.

With India at the forefront of the global technology ecosystem, we find that this discussion around the regulatory framework for OTT services is timely and imperative. As responsible stakeholders in this process, we appreciate the ability to participate in public consultation process.

As such, please find appended to this letter detailed comments and recommendations, which we would like to respectfully request that TRAI consider when reviewing the regulatory framework for OTT services. We are grateful to TRAI for upholding a transparent, multistakeholder approach in developing a regulatory framework for OTT services.

Should you have any questions or need clarification on any of the recommendations, please do not hesitate to contact our Secretariat Mr. Sarthak Luthra at Secretariat@aicasia.org or at +65 8739 1490. Thank you for your time and consideration. We would also be happy to offer our inputs and insights directly through meetings and discussions with the relevant authorities.

Sincerely,

Jeff Paine
Managing Director
Asia Internet Coalition (AIC)

[1] https://www.ey.com/Publication/vwLUAssets/EY-digital-opportunity/$FILE/EY-digital-opportunity.pdf

Detailed Comments and Recommendations on the Regulatory Framework for Over-The-Top (OTT) Communication Services in India

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.

There is a clear contrast between the services offered by telecom service providers (TSPs) and those offered by OTT service provider(s) (OTTs). OTT services are inherently different from TSP services in a variety of ways, including technical, qualitative, and consumer-orientation. There is, in the first place, a much higher degree of control and ownership of TSPs of their end subscribers while OTT services are offered purely on "opt-in" basis to internet users. TSP's services are tariff based services offered to end users while OTT services are usually free of charge without any committed revenues from end users. In addition, OTT services run on top off and drive the usage of TSP services, proving that OTT services can't be a substitute for TSP services as they cannot be replaced with each other. Due to these fundamental differences, treating these two kinds of services as similar, or as substitutes for each other, and subjecting them to similar regulatory frameworks will be harmful for consumers, impractical and arbitrary. Therefore, OTT applications (apps or OTT apps) that do not interconnect with the public telephone network and provide any-to-any connectivity are not the "same or similar" to the services provided by TSPs because:

- OTTs and TSPs have fundamentally different technical and economic characteristics;
- apps typically provide a wider set of features than traditional services;
- apps are, unlike traditional services, accessible on any Internet-capable device; and
- apps operate in different layers than do traditional services.

Usage and Technological Differences between OTTs and TSPs

In this context, we submit the following points for the consideration of the Authority regarding the important differences between OTT communications applications and traditional services:

1. Implying that OTT communications applications and TSPs provide the same services or operate in the same market ignores critical differences between the two. OTTs are not the substitutes of TSPs; they depend on them. A consumer cannot even access OTT applications without first purchasing internet access service from a network operator. TSPs control the underlying broadband access infrastructure and are the gatekeepers to broadband internet access and therefore, OTTs themselves. Further, consumers typically have limited choices in their TSP and there may be costs associated with switching (and telecommunications regulations have been structured with those considerations in mind). By contrast, OTT applications cannot be offered without access to the physical networks that *only* TSPs deploy. OTT apps operate in a highly competitive market in which it is easy and often cost-free for consumers to switch between competing apps, and many consumers access multiple OTT communications apps from one device (thus, the rationale underpinning many legacy telecommunications regulations does not apply to OTT communications applications).

2. Equating OTT communications with traditional services is overly simplistic and ignores that OTTs often offer diverse functionalities, do not easily fall into straitjacketed categories, and may use messaging or calling merely to augment unrelated services and improve the consumer experience. Conceiving "communication services" as a sub-category of OTT applications creates an impractical distinction between communication functionalities and non-communication functionalities among OTT applications. For example, gaming, document editing, photo sharing, social media and many other fundamentally dissimilar functionalities allow users to communicate with each other. On a prima facie basis, the distinction between communication OTT providers and non-communication OTT providers is artificial and flawed, since today's applications can hardly be compartmentalized in such clear-cut categories. OTT services such as Whatsapp, Skype, Telegram, JioChat Messenger and Hike Messenger create dynamic ecosystems that enable user interaction in ways that are not possible through traditional telecom services.[2]

[2] In fact, some authors have increasingly moved away from the term "OTT" as well, in favour of nomenclature such as "Rich Interaction Applications" that more accurately captures the wide suite of functions that such internet applications perform. See, the Economic and Societal Value of Rich Interaction Applications in India, Page 6. -- https://www.broadbandindiaforum.com/files/reports-and-publications/THE%20ECONOMIC%20AND%20SOCIETAL%20VALUE%20OF%20RICH%20INTERACTION%20APPLICATIONS%20IN%20INDIA.pdf

Similarly, there are also OTT services that may be used for specific purposes, including for "business interaction".[3] For example, Flock[4] and Slack[5] are business focused applications, to allow employees and teams to communicate and collaborate with each other on a single platform. This integration of various functions on a single platform allows OTT services to offer a one-stop solution to users' communication needs and creates added value by reducing the time and money they spend on transactions, searches and information gathering.[6] It would be incorrect and inappropriate to characterize and regulate them as telecommunications services. Some additional examples of such communication service features are as follows:

- Messaging/calls in payment apps (such as PayTM)
- Messaging/calls in gaming apps (such as Call of Duty)
- Messaging/calls in rental apps (such as Airbnb)
- Messaging/calls in food ordering apps (such as Zomato)

Clearly, the above examples refer to very different kind of services. And since their usage and functionalities are, in turn, very different from traditional telecom services, there is little comparison between the two. For example, traditional messaging services can be used between two devices and include basic text and image content. An OTT messaging app may provide additional functionalities such as the ability to have group chats, and share documents and videos, among other features. Thus, OTT services provide expansive experiences to customers that go beyond conventional messaging and communication options provided by TSPs. OTT communications applications such as WhatsApp, Hike Messenger, and Google Hangouts provide rich messaging features not available through SMS, and they also have broad economic impact. A recent study estimates that for the year 2017, this consumer surplus for India provided by "Rich Interactive Applications" or "RIA" was a substantial INR 6.3 lakh crore (US$ 83 billion).

Attempting to regulate selectively the millions of applications on the internet would further be practically extremely difficult. This arbitrage in regulatory obligations would give a reason to circumvent and fragment the internet across types of services. It would also stifle the development of OTT providers that provide integrated service offerings driven by consumer demand. Such services are however the principal drivers of data consumption by the consumers and of rapidly increasing revenues of for the TSPs, thereby making them a beneficial proposition for all. Therefore, OTT services should not be segmented and their development should be left to the market forces. This will encourage all the players in the telecommunications sector to innovate, diversify and grow, which in turn will benefit consumers and the economy as a whole.

3. The diversity of OTT services can be evidenced by the multiplicity of devices that can use them. Any device (mobile, tablet, laptop, desktop) connected to the Internet (whether WiFi or mobile or fixed line) can use OTT applications, which is not the case for traditional services. Effectively, any proposal for additional regulation by the Authority will cast a very wide net bringing the entire software industry under a new regulatory framework. This level of disruption will raise new uncertainties for the industry.

4. Telecom networks and OTT applications operate in different layers (network layer and application layer respectively) and offer functionalities on different devices and compete for different groups of customers.

Recommendation: Given the rapid pace at which OTT services innovate and grow, the differences between OTT providers and TSPs will only increase in the future.[7] As a result, OTT services cannot be considered as substitutes for services provided by TSPs at present, and certainly not in the times to come. Further, on a prima facie basis, the distinction between communication OTT services and non-communication OTT services is artificial and flawed, since applications cannot be compartmentalized in these two categories.

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.

[3] The Economic and Societal Value of Rich Interaction Applications in India, Page 5.
[4] https://flock.com/in/
[5] https://slack.com/
[6] The Economic and Societal Value of Rich Interaction Applications in India, Page 13.
[7] The Economic and Societal Value of Rich Interaction Applications in India, Page 25.

As demonstrated in the answer to Question 1, TSPs and OTT services cannot be considered as similar nor as potential substitutes due to their fundamentally different natures. The so-called substitutability of OTT communications services for traditional services is especially misleading since it is not an option for the majority of users who still do not have access to smart devices, and thus do not have access to OTT apps. Substitutability should therefore not be considered as a criterion for making TSPs regulatory or licensing norms applicable to OTT service providers, not only because the scope of the services undertaken by the two players are radically distinct but also because different set of regulations are already applicable to these two kinds of services.

Before deep-diving into these differences, reference to the legislative framework in place for telecom infrastructure is crucial. Under the Indian Telegraph Act, the Central Government has the exclusive privilege to establish, maintain and work telegraphs (which falls within the scope of telecom infrastructure). It is under this statute, that the Central Government grants licenses (under the unified license regime) to third parties (such as TSPs) to establish, maintain and work different aspects of the telecom infrastructure and consequently requires to comply with the licensing norms. With the ability to operate telecom infrastructure in specified territories in India, the TSPs provide a bouquet of services such as access, internet, NLD, ILD services, etc (as opted by the TSP).

In contrast, OTT players do not maintain or work, and have no role to play, in the telecom infrastructure licensed under the Telegraph Act. Instead they merely provide applications that the public accesses on certain categories (content layer) of the telecom infrastructure (i.e. the public internet) which is fully operated by TSP/ISPs. On the one hand, OTT providers should therefore logically not fall within the TSP licensing regime. They are, on the other hand, already regulated by existing laws (including the Information Technology Act and related rules).

Key aspects differentiating between TSPs services and OTT services:

- **Connectivity**: Consumers can only access OTT services and applications, if they have their own Internet access. That is, OTTs are used independently of the underlying network. However, in the TSP market, the network and services are inseparable. An end user is the TSP's customer and can only use the TSP's network for telephone and SMS services. This means, for example, that a customer of Bharti Airtel's voice and SMS services cannot use Vodafone's voice and SMS services. In contrast, a customer purchasing Bharti Airtel's Internet access can download and use a variety of OTT apps on a single device.

- **Quality of service (QoS) capabilities**: TSPs operate and manage the telecommunications networks, and have sole control over the "last mile" networks that reach end users. Even where TSPs are resellers only and do not operate their own networks, they are able to guarantee network quality via interconnection and resale agreements with the network operator. Because TSPs ultimately control network and service quality, they are responsible for QoS obligations. In contrast, the nature of OTTs means that they run "over the top" of TSPs' networks. End users must purchase Internet access separately from the OTT service, meaning that OTT providers are not parties to the TSP-end user contracts and have no control over which networks the consumer uses. While OTT providers can improve their software capabilities, QoS is ultimately determined by the TSP's network.

- **Functional perspective:** A key element of substitutability is whether an end user can call or message any other end user via telephone numbers that interconnect with the public switched telephone network. OTTs do not use numbering resources that connect via the public switched telephone network whereas TSP services do. Additionally, TSPs offer telephony and SMS services on a stand-alone basis. In contrast, OTT services offer a wider range of functionalities beyond voice calls and messaging, including video conferencing, ability to share documents and multimedia, instant messaging, and translations, among others.

From an international perspective, we also find that OTT and TSP services are not treated as substitutes in other jurisdictions. Regulators and policymakers in other jurisdictions, such as in the European Union (EU) and Australia, have determined that non-interconnected OTT apps are not equivalent to or are not perfect substitutes for traditional telecom services.

Global OTT Policies and Regulations

We call the Authority's attention in particular to the EU's acknowledgment in the revised European Electronic Communications Code (EECC) of the fundamental differences between "number-based interpersonal communications services" (NB-ICS), such as those interconnected with the public telephone network, and

"number-independent interpersonal communications services" (NI-ICS), which includes non-interconnected OTT communications apps that ride over the network. The EU created separate regulatory regimes for NB-ICS and NI-ICS, subjecting NI-ICS to lighter touch regulation.

The Australian Competition & Consumer Commission (ACCC) determined in its April 2018 Communications Sector Market Study that there "is no basis for requiring equivalent regulatory treatment" of OTT and traditional voice services. The ACCC reasoned that "the extent of substitution from traditional voice services to OTT voice services is limited by technical shortfalls (such as any-to-any connectivity) and consequently we do not consider OTT services to be full substitutes for voice services at this time." The ACCC went on to state that the "emergence of OTT services has largely been a positive development for consumers," including in how OTT companies "provide[] consumers with new services (such as entertainment, social media, ride-sharing, shopping, etc.) and innovative alternatives to traditional communications services (such as voice and text messaging)," and that the ACCC "consider these developments have a strong pro-competitive impact on a variety of markets."

And as the Authority notes, Ofcom has similarly determined in the context of a review of the market for mobile call termination for the period of 2018 to 2021 that "there are no sufficiently close substitutes for termination of calls to mobile numbers for us to widen the market definition, nor are any likely to emerge over the period covered by this review. This means that, for example, voice calls terminated using Over the Top (OTT) services which do not use mobile number ranges, such as FaceTime, Skype or WhatsApp, are not part of the relevant markets."

Globally, many law and policymakers recommend a cautious approach to extension of existing telecom regulation to apps and consideration of opportunities to deregulate traditional services. For example, in a joint letter to the European Commission (EC) regarding reform of the European Union's telecoms framework, the governments of 10 European countries cautioned against "automatically extending" regulation to online apps, urging the EC to "consider deregulation of traditional telecoms services." Similarly, the Nordic National Regulatory Authorities recommended "a cautious approach to regulation" of online apps and that "possibilities to simplify, modernize and lighten existing regulation should be pursued."

Regulators and lawmakers are also actively reconsidering existing telecommunications regulatory frameworks in light of changes in the marketplace. For example, Hong Kong's Commerce and Economic Development Bureau (CEDB) has initiated a review of its broadcasting regulatory framework "with the aim of relaxing obsolete statutory requirements." The CEDB did not propose to extend existing obligations for traditional audiovisual services to online apps in part because "[t]hough OTT and other Internet TV and radio programme services are gaining their prominence, traditional media . . . are still highly pervasive and accessible to all in the family, young and old."

In October 2017, the Australian Parliament enacted broadcasting reform legislation that in part eliminated media control and broadcast audience reach restrictions and was intended to "improve the sustainability of Australia's free-to-air broadcasting sector" and "reform[] outdated media regulation . . . to better reflect the contemporary digital media environment."

In November 2017, the US Federal Communications Commission (FCC) eliminated or revised several of its broadcast ownership rules to "reflect the present, not the past" of the media landscape. The FCC concluded that updating those rules – which principally limit a single entity's ownership of multiple media outlets – would afford broadcasters and local newspapers "a greater opportunity to compete and thrive in the vibrant and fast-changing media marketplace." Further, in the United States, the Communications Act distinguishes between telecommunications services, interconnected voice over Internet protocol (VoIP), and non-interconnected VoIP. The FCC imposes licensing/authorization requirements on providers of telecommunications services. In contrast, VoIP providers are not subject to licensing/authorization obligations. Further, non-interconnected VoIP providers are exempt from regulatory compliance obligations, such as interconnection, emergency call service, and interception obligations.

Criteria for Comparing OTTs and TSPs

OTTs and TSPs are clearly not substitutes. Other relevant factors that invalidates this substitutability include: ubiquity and adoption, consumer welfare, addressable markets, level of competition, maturity of industry, lifecycle of product/services, impact on economy (especially SMEs and startups), level of innovation, nature of the underlying technology and other technical considerations such as whether the service connects to the public telephone network, and switching costs, amongst other factors.

Even if functional comparison were the only criteria, consumers do not view OTT communications applications as substitutes for traditional telecom services. And regardless, it would be illogical for all functionally similar services to be regulated the same because then, for example, cars and bicycles or Airlines and Railways would have a common regulatory framework. Further, it must be recognized that substitutability in itself is a complex criteria: it comprises many considerations and factors and shouldn't be simply reduced to one factor. In this context, we submit the following points for the consideration of the Authority:

1. Several considerations are important for determining substitutability in the context of regulation besides functional similarity. For example, the players must: (i) compete in the same layer (e.g., network layer, application layer, etc.) with comparable rights to resources; (ii) offer functionally comparable services; (iii) compete for the same group of customers; (iv) operate in the same service area; and (v) offer services on comparable devices. Given the differences highlighted in our response to Question 1, it is clear that Internet communications applications and TSPs are far from being substitutable.

2. Invoking substitutability between the services to justify regulation or licensing requirements for OTT services will hurt consumers and industry. It will create a new barrier to entry for both new apps and service providers by raising the cost of service provision. Low barriers to entry, the open nature of the Internet, and rich interactions and experiences that OTT application and content providers enable are key to the continued growth of the digital economy. Ill-conceived regulatory and/or licensing obligations risk throttling Internet-based innovation as well as the nascent start-up ecosystem in India. Further, a poorly justified domestic regulatory framework can discourage foreign investment in India. It will encourage Indian Internet companies to move their operations to more permissive regulatory jurisdictions abroad, a trend prevalent even today.

3. The criterion of substitutability is contrary to the government's current approach to carriage (TSPs) and internet content (OTTs) which fall under the Department of Telecommunications (DoT) and Ministry of Electronics and Information Technology (MeitY), respectively. OTT services are already regulated under the IT Act framework, as elaborated by the consultation paper. In Chapter 4, the consultation paper has detailed the obligations applicable to TSPs that are not applicable to OTT service providers.

Further, the consultation paper has also delineated jurisdiction related issues, specifically data localization and CLOUD Act, which come under the ambit of MeitY.

4. Any finding of substitutability based on the test of "substantial functionality" as iterated in Para 2.2.8 is bound to be flawed, because:

    - It is not an objective test, as most OTT applications provide multiple functionalities (such as gaming, payments etc) and identifying whether the communications functionality is 'substantial' or 'ancillary' might depend on vague and varying factors. Such a test will invite uncertainty and litigation.
    - It will encourage some OTT service providers to attempt to disguise the communication (messaging and voice) features among non-communication features, in order to escape obligations imposed on communication service providers.
    - It will encourage OTT service providers to lower investments in their messaging and voice features in order to prove that they are ancillary, leading to a slowdown in the growth of these functionalities. This will hurt innovation, competition and customer choice.

Regulatory Approach

Regulators around the world treat Internet-based services and telecommunications in very different ways. Telecommunications are typically offered on a country-by-country basis reflecting network design, while the Internet services (OTT) marketplace is global, with services (and the benefits they bring) traversing national boundaries. Invoking substitutability between the services to justify regulation or licensing requirements for OTT services will hurt both consumers and industry.

Since there are no entry barriers for providing OTT services, even TSPs can enter the OTT market without any additional license, which many Indian players have recently done, whereas OTT providers cannot enter the TSP market without a license. In other words, TSPs have the right to operate in both the network and content / application layers whereas OTT providers are restricted to the application layer alone and cannot enter the network layer. As we will show in our answer to Question 5 below, the content layer is already regulated via horizontal regulations like the IT Act under which TSPs are already competing with OTT providers with equal parity.

Meanwhile, it is important to highlight that since OTT providers are regulated by a different set of laws, they do not enjoy any of the exclusive rights that are conferred to TSPs through their licenses. These include (i) the right to acquire spectrum, (ii) the right to obtain numbering resources, (iii) the right to interconnect with the PSTN, and (iv) the right of way to set up infrastructure.

Recommendations:

- A determination of substitutability between OTT and TSP services would generally require empirical evidence conducted in transparent and open proceedings that are dedicated exclusively to identifying whether products or services are substitutes in a given market. Empirical evidence can be gathered through a range of studies, such as market surveys of consumer experiences, traffic data from OTTs and TSPs, and a determination of relevant markets.
- OTT services and services provided by TSPs are not substitutable, which is why they are universally regulated by different legal frameworks that are adapted to their respective natures and confers them different rights and obligations. The question of treating substitutability as the primary criterion for the comparison of regulatory and licensing norms applicable to TSPs and OTT providers therefore should not arise.
- Applying legacy telecom norms to OTT providers will create new barriers to entry for both new apps and services by raising the cost of service provision. It is also key to being out the distinction between the network layer and the content layer, with TSPs having the right to operate in both the network and application layer whereas OTT providers are restricted to the application layer alone and cannot enter the network layer. Low barriers to entry, the open nature of the Internet, and the rich interactions and experiences that OTT application and content services enable are key to the continued growth of the digital economy. TRAI should consequently abstain from invoking the test of "substantive functionality" to compare OTT and TSP services.
- We request the Authority to consider that globally, many laws and policymakers recommend a cautious approach to extension of existing telecom regulation to OTT apps and consideration of opportunities to deregulate traditional services.

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.

There is no regulatory or licensing imbalance between TSPs and OTTs because legacy telecommunications regulations are ill-suited for OTT applications. TSPs and OTTs invest in different parts of the digital ecosystem. The perception that OTT service providers do not participate in infusing investment in telecom network is based on an outdated conception of the network infrastructure. In today's globalised world, the demand for data consumption is mostly driven by the consumption of online services that are created globally. To cater to this growing demand, OTT providers are investing in the global infrastructure required to host and carry content, and make it accessible to end users.

A significant way in which OTT providers drive investment is by building physical facilities such as data centres, fibre networks, servers and routers. There is a wide array of advanced and expensive physical equipment that underpins the operation of the internet, which requires significant investment, and much of it is carried out by OTT players and their network service providers.

As can be seen, focusing only on the impact of OTTs on TSP revenues would present an incomplete picture of the positive impacts of OTTs on consumers and the overall economy. It is easy to see that raising barriers for OTT players could hamper innovation in digital applications, and raise costs for users and the economy at large, instead of spurring investment.

It may be pertinent to revisit TRAI's recommendation on "Regulatory framework for Internet Telephony" issued on October 24, 2017. The regulator while examining the arguments on revenue loss to existing TSPs by introducing telephony services over public internet noted that "*internet use is growing at an unprecedented high rate, and existing providers will generate revenue from data services which will be required by a subscriber to make even an internet telephony call. The Authority is of the view that increasing*

revenue realisations from data services ***due to increasing internet traffic will not only compensate for the loss of conventional voice traffic but will also increase the revenue potential****...".* The telecom regulator, in this respect also noted the presence of symbiotic relationship between accessibility of services over the public internet and telecom sector.[8]

Under recent reforms, India's telecom players can now determine the nature, scope, and scale of their investments in the market based on their own commercial considerations. Because the Authority forbears on end user tariffs, TSPs are free to set price of Internet access for their subscribers. And thanks to liberal norms for entry, exits, and mergers, players continue to invest in one or more parts of the industry. There have been substantial investments in optical fibre networks in recent years. Recent massive investments in 4G networks are primarily due to revenue opportunities offered by OTT applications. OTT music, video functionalities continue to drive growth of data and the accompanying revenues for TSPs.

Despite the lack of availability of comprehensive, data-driven reports on network investments, it appears that India's telecoms market is flourishing. In November 2017, the Department of Telecommunications (DoT) stated that "India now has the second largest network in the world." As of August 2017, India surpassed the 1 billion subscription mark in telephone subscribers, reaching over 1.2 billion, with overall tele-density in India at 93.74%.

Infusion of investments in the telecom networks for network capacity expansions based on technology upgrades is not solely dependent on regulatory or licensing regimes in the country. Even though TRAI has been proactive in regulating tariffs, most TSP services are either under forbearance or offered well below defined tariff ceilings, indicating healthy business offerings driven by competition within TSPs.

If, upon thorough, transparent, and objective review, the government determines that TSPs are not investing at what seems to be appropriate levels, then there may be other limiting factors at play that would not implicate OTT providers. In particular, excessive spectrum fees have been highlighted as barriers to investment. Other impediments to investment may include high licensing fees, difficulty in obtaining rights-of-way, lack of infrastructure sharing, and limits on foreign investment. While India's National Digital Communications Policy is intended to address some of these issues, the focus should be on streamlining and easing regulatory burdens in order to promote network investment rather than impose unwarranted, harmful regulatory obligations on OTT providers.

It is also important to note that OTT apps already participate in infusing investment in the networks, facilities, and equipment of the internet. A new study by Analysys Mason, shows that since 2014, online service providers (OSPs) have invested over US$ 300 billion in internet infrastructure. This amounts to US$ 75 billion per year, which is more than double the 2011–13 average annual investment of US$ 33 billion.

Further, network operators are also continuing to announce ambitious investments. The following offers a few recent examples.

- **Bharti Airtel.** In September 2018, Bharti Airtel announced[9] plans to invest INR 10 billion (US$ 143 million) over the next year in the state of Karnataka alone, along with 13,000 new mobile sites and deployment of 4,5000 km of fiber optic cables between 2018 and 2019.
- **Vodafone Idea.** In June 2018, Vodafone announced[10] an investment of INR 80 billion (US$ 1.15 billion) ahead of its merger with Idea Cellular.
- **Jio.** Since rolling out services in September 2016, Jio has reportedly[11] invested at least INR 2.2 trillion (US$ 33 billion) in its network. Jio's parent company, Reliance, expects to continue a range of investments in fiber business and fiber-to-the-home, as well as digital services, content, and the Internet of Things (IoT).

[8] TRAI Recommendation on 'Regulatory framework for Internet Telephony'; available at https://trai.gov.in/sites/default/files/Recommendations_24_10_2017_0.pdf

[9] Airtel reveals network investment plans for UP and Uttarakhand, Telecom Lead. Available at: https://www.telecomlead.com/telecom-services/airtel-reveals-network-investment-plans-for-up-and-uttarakhand-86495

[10] Vodafone to invest Rs 8,000 cr in India in June; monetise Indus stake for additional fund, Times of India. Available at: https://timesofindia.indiatimes.com/business/india-business/vodafone-to-invest-rs-8000-cr-in-india-in-june-monetise-indus-stake-for-additional-fund/articleshow/64513319.cms

[11] Reliance Industries to further invest in Jio to expand fibre and content network, ET Telecom. Available at: https://telecom.economictimes.indiatimes.com/news/reliance-industriesfurther-jio-investments-to-based-on-actual-growth-and-performance-fitch/64187995

OTT providers also have a positive indirect impact on investments in telecom networks.[12] Increasing demands for OTT services have fuelled demands for the underlying telecommunication services.[13] This has in turn increased revenue opportunities for TSPs as is evident from the following:

- On a global level, increasing demands for mobile applications have increased revenues from mobile data services, which grew at an annual average rate of 34% between 2010-2014.[14]
- Increasing demand for OTT services has encouraged growth in data traffic for TSPs. Several TSPs in Africa recorded growth of more than 50% in data traffic in 2015, which in turn increased data revenues as a share of total revenues. [15]
    - Finally, over 60% of Internet traffic crosses a content delivery network - a significant investment by OTT providers to improve the efficiency of the transport and delivery networks.[16]
- In Europe and Africa, SMS volumes continued to increase for TSPs, even after the introduction of Whatsapp.
- The recent massive investments in 4G networks in India are primarily due to revenue opportunities offered by OTT applications. OTT music, video applications continue to drive growth of data and the accompanying revenues for TSPs.

The digital opportunity is not a zero sum game; all players stand to benefit and the opportunities in this regard are only expanding. There is a virtuous cycle between TSPs and OTT providers: rising demand for online services is stimulating even more demand for broadband connections. Innovation in meeting consumer demand is creating value for all players. It is worth noting that the amount of revenue that OTT providers invest as a proportion of their revenue is high. Indeed, on average, the three largest application and content providers by revenue collectively invested 9% of their 2011-2013 revenues in networks facilities and equipment.[17]

The growth of OTT apps expands, not reduces, the avenues for greater revenues for TSPs. With OTTs offering progressively richer services, incentives for investment in networks will increase further. This will attract and make available greater funds to enable deployment of newer technologies and investment in network capacity and quality. OTTs have provided investment and revenue opportunities across the economy, not just for TSPs alone. OTT communications applications such as WhatsApp, Hike Messenger, and Google Hangouts provide rich messaging features not available through SMS, and they also have broad economic impact. A recent study conducted by WIK-BIF found that that "rich interaction applications" like WhatsApp, Facebook Messenger, Google Hangouts and Hike created a consumer surplus of US$ 98 billion (INR 6.3 lakh crores) in India. This is equivalent to 4.3% of India's GDP of US$ 2264 billion (INR 147 lakh crores) in 2016. A 2017 report by WIK found that each 10% increase in usage of "Rich Interactive Applications" or "RIAs" led to an average increase of US$ 5.6 trillion in global GDP (0.33% of GDP) from 2000 to 2015.[18] And according to one study, a five percent increase in WhatsApp penetration in 2015 is associated with a US$ 22.9 billion increase in global GDP.[19] In this context, viewing OTTs as free riders on TSP networks, not subject to any regulation is incorrect. OTT services deliver massive consumer value and are regulated under the framework of the Information Technology Act (IT Act).

Another study, by ICRIER in 2017, determined that during the period 2015-16, OTTs contributed a minimum of US$ 20.4 billion (INR 1357.6 billion) to India's GDP. The study forecasts that by 2020, OTTs could contribute a minimum of US$ 270.9 billion (INR18275.9 billion) to India's GDP.

Thus, OTT services provide expansive experiences to customers that go beyond conventional messaging and communication options provided by TSPs.

---

[12] Impact of online communication services on the telecommunications market in Africa, available at <https://en.idate.org/impact-of-online-communication-services-on-the-telecommunications-market-in-africa/ >, last accessed on 28 November 2018.
[13] NASSCOM Response to TRAI consultation paper on regulatory framework for OTT players, Page 2.
[14] B. Williamson, Next generation communications & the level playing field – what should be done?, available at <http://www.ccianet.org/wp-content/uploads/2016/06/Next-Gen-Comm-Level-Playing-Field.pdf>, last accessed on 28 November 2018.
[15] The Mobile Economy Sub-Saharan Africa 2018, available at <https://www.gsma.com/mobileeconomy/sub-saharan-africa/ >, last accessed on 28 November 2018.
[16] Investment in networks, facilities and equipment by content and application providers, available at <http://www.analysysmason.com/research/content/reports/content-application-provider-internet-infrastructure-sept2014/ >, last accessed on 28 November 2018.
[17]David Abecassis et al., Analysys Mason Report: Investment in Networks, Facilities, and Equipment by Content and Application Providers (Sept. 2014) ("Analysys Mason") at 33.

[18] Dr. Rene Arnold et al. The Economic and Societal Value of Rich Interaction Applications in India. Broadcast India Forum. November 2017. Access here
[19] Rosie Mate and Greg Rafert. The Global and Country-level Economic Impacts of WhatsApp. Analysis Group. Access here

Recommendations:

- In view of the above, the Authority should focus more on unshackling TSPs from unnecessary and expensive regulation which severely limits their ability to invest in networks.
- OTT providers operating in India are already investing a lot in setting up network infrastructure globally as well as in the country, either directly or indirectly, buying services from TSPs and other infrastructure providers (Data Centres space etc.), thus supporting TSP's business growth and investments.
- TRAI should hold that internet applications, content and Internet access are complementary & symbiotic services. Just as network operators benefit from new revenues by making digital content and services available to Internet users, providers of applications and content benefit from an accessible, fast, efficient and reliable Internet. Therefore, there is no need to impose additional regulation to compel investments in infrastructure that are spontaneously driven by market forces, as many OTT providers already invest heavily in various parts of the network infrastructure.
- Subjecting OTT services to the same regulatory framework as that applied to TSP services, or imposing new regulations for artificially stimulate investments in network infrastructures will distort the market and only serve to limit the potential of the OTT ecosystem, hamper innovation in the country and impact consumers in a negative manner.

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.

Competition is always to the benefit of businesses as well as consumers if it is fostered in a conducive and balanced environment. Most importantly a competitive environment also enables consumers to avail better data connectivity at a lower prices. Such an environment has led to an accelerated adoption of OTT services and increase in demand for more data. Furthermore, the growth in OTT services and the consequent increase in data traffic also generates growth for TSP's business.

The rationale for requiring TSPs to interconnect and interoperate does not apply to OTT communications services. Forced interoperability would destroy the OTT market. OTTs complement TSP services with each functioning in different markets. Mandatory interoperability among OTTs and/or between OTTs and TSPs would effectively eliminate OTTs by forcing them into the TSP market. The result would be the destruction of competition, as well as substantial consumer harm.

Interoperability Among OTT Services

Lack of interoperability, as it refers to users' ability to move or switch between OTT services, has not been seen as a serious barrier to competition. The rationale for requiring TSPs to interconnect and interoperate does not apply to OTT communications services. TSPs offer essential services including access to emergency services. If TSP services did not interoperate or interconnect, potentially large populations would be cut off from communications and life-saving access to emergency services.

There has been no evidence of consumer harm due to a lack of interoperability of OTT applications. On the contrary, consumers have a vast range of choices at low to zero costs because the OTT market is highly competitive and has low switching costs. Consumers find it extremely easy to acquire knowledge about different apps and switch from one to another. This is corroborated by the Competition Commission of India in its order *in re* Vinod Kumar Gupta and WhatsApp Inc., which has stated as follows:

> *"The Commission also observes that there are no significant costs preventing the users to switch from one consumer communication apps to another. It may be due to the following reasons:*
>
> - *all consumer communication apps are offered for free of cost or at a very low price (mostly free),*
> - *all consumer communication apps are easily downloadable on smartphones and can co-exist on the same handset (also called 'multi homing') without taking much capacity along with other apps,*
> - *once consumer communication apps are installed on a device, users can pass on from one app to its competitor apps in no-time,*
> - *consumer communication apps are normally characterised by simple user interfaces so that costs of switching to a new app are minimal for consumers, and*

- *information about new apps is easily accessible given the ever increasing number of reviews of consumer communication apps on apps store like google play store etc."*

Further, the OTT economy is arguably more competitive than TSP services. Constant new entry is a feature of the online space because the barriers to entry for online services are low. The products offered are typically software-based, which means they can be rolled out, adopted, and built upon much more quickly (and cheaply) than industrial products. A new mobile app requires minimal staff, capital investment and infrastructure. The rise of cloud-computing platforms has dramatically decreased the time and capital necessary to start and scale an online service. Moreover, app stores provide pre-existing distribution platforms for applications to reach users and scale quickly.

The above factors all make it easier for new services to compete with established products on the merits, and to do so quickly. This constant competition has led to a high rate of churn among the most popular online services.

- It is notable that technology is organically moving toward even technical interoperability, with Windows apps that can 'talk' to Android and iOS apps and vice versa. Music apps across platforms allow sharing of media, playlists etc. Crucially, these developments are not in pursuance of any regulatory mandates, but in response to market conditions.
- India has a robust antitrust regime that is equipped to deal with issues relating to abuse of dominance. The Competition Commission of India, associated with the Competition Act, 2002 is the competent forum to address such matters. Thus, no regulatory measures based on a notion of perceived consumer harm will be justified.

Interoperability between Telecom and OTT Services

The interoperability between telecom and OTT services has already been examined by the Authority in its Recommendations on Regulatory Framework for Internet Telephony published in 2017. In its recommendations, the Authority has noted that the present regulatory framework permits Unified Access Service Licensee (UASL), Cellular Mobile Telecom Service (CMTS) licensees and Unified Licensee (access service) to provide unrestricted Internet Telephony, which extends to both PC to Phone and Phone to PC calls within India as well as abroad. Additionally, ISPs in India are presently permitted to provide one-way PC-to-Phone Internet Telephony service for International Long Distance outgoing calls only on PSTN/PLMN to such countries where termination of Internet Telephony calls is permitted.

Thus, telecom and OTT services are already interoperable, to the extent provided above. There already exists a regulator to address competition issues arising from lack of interoperability. In this context, sweeping regulations regarding interoperability will be economically unjustified and misplaced.

It is possible that forcing interoperability of OTT apps with traditional network-based services can lead to a loss of popular innovative features and functions available on apps. Further, market forces are also working adequately to enable OTT providers and TSPs to collaborate on improving services such as SMS for the digital age. TRAI in its consultation paper has already noted that TSPs have the option to adopting services such as Rich Communication Services (RCS), which is an example of how OTT providers are heavily contributing for making SMS clients more capable for content rich interactions via RCS, which will organically improve interoperability.

Finally, interoperability between OTTs is also not possible due to technical reasons. This is because many OTT communication services are encrypted end-to-end. In order to make them interoperable, it will require assigning and handshake of keys which in turn will be an an enormous re-architecting challenge. This would also compromise the safety and privacy of the OTT services.

Recommendation: TRAI should recommend that there is no reason to require interoperability between OTT services, as evidence states that consumers are benefiting from the dynamic and competitive market created by multiple OTT ecosystems. Further, there already exists a regulator to address consumer issues arising from lack of interoperability between OTT services (the Competition Commission of India). Until this is exhaustively proven, market forces (such as the RCS example above) should be allowed to continue to operate in the status quo.

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.

Safeguarding India's national security interests and maintaining law and order is imperative. Consequently, the lawful interception of communication, in the interests of national security and law and order, is an essential prerogative of the government.

As articulated in the Consultation Paper, all the services offered by OTT providers ride on network/services offered by TSPs which are well aligned with all applicable guidelines or safeguards for national security. Currently, there is no private network allowed to be run by OTT providers of their own so all the underlying network supporting OTT services are managed, controlled and provided by TSPs. Additional lawful interception for OTT providers would hence be meaningless, unless OTT providers are allowed/enabled to create their own network independent of TSPs.

In our view, current Indian law more than adequately addresses all concerns on the lawful interception of OTT communication.[20] Further, there are strong issues of privacy, ensuring trust in end users and enforcement (due to the large number of players) that would make looking at interception for OTT providers alone a difficult task. As such, no additional safeguards need to be instituted. Should such issues however arise, they should not be looked at only in the context of 'TSP-like' OTT services but holistically, for the Internet in India as a whole.

Multiple statutory frameworks allow the Indian government to lawfully intercept communication to preserve law and order, and protect national security. Key among these are the Telegraph Act, 1885 and the Telegraph Rules, 1951; the Information Technology Act, 2000 ("**IT Act**"), and relevant rules[21] framed under the IT Act; and the Code of Criminal Code Procedure, 1973 ("**CrPC**").[22]

Internet applications such as OTT services will be subject, in particular, to sections 69 and 69B of the IT Act, and the rules[23] framed under these sections, which lay down procedural safeguards. Under section 69 of the IT Act[24], the central and the state governments are authorized to intercept, monitor or decrypt any information[25] generated, transmitted, received or stored in any computer resource[26] on one of a number of grounds, including the security of the state, the defence of India, and public order, among others. Section 69B of the extant legislation allows the government to authorize the monitoring and collection of traffic data or information generated, transmitted, received or stored in a computer resource.[27] As in the case of section 69, this monitoring and collection of information under section 69B can be for one of a number of reasons, including cyber security.[28] Law enforcement agencies also routinely rely on Section 91 of the CrPc to obtain information from internet companies,[29] including OTT service providers.

Further, intermediaries such as OTT service providers are legally obligated to share information with law enforcement agencies[30], authorized for "investigative, protective, cyber security activity".[31] This current legal framework will only be strengthened with the passage of India's personal data protection law.

Issues Related to Lawful Interception

There are no issues related to lawful interception of OTT communication stemming from the regulatory framework per se. We believe that existing laws pertaining to law enforcement access to data already address this issue and are sufficient in this regard.

Therefore, there is no need for any additional rules in this regard.

---

[20] Response to TRAI Consultation Paper on Regulatory Framework for Over-the-top (OTT) Services. Available at:https://cis-india.org/internet-governance/resources/net-neutrality/2015-03-27_cis_trai-submission_regulation-OTTs

[21] Information Technology (Procedure and Safeguards for Monitoring and Collecting Traffic Data or Information) Rules, 2009.

[22] Page 21, IAMAI's response to TRAI Consultation Paper 2015, available at < https://trai.gov.in/sites/default/files/IAMAI_CP_27Mar2015_C.pdf >, last accessed on 24 November 2018

[23] Information Technology (Procedure and Safeguards for Monitoring and Collecting Traffic Data or Information) Rules, 2009.

[24] Footnote section 69

[25] Section 2(1)(v) - Definition of Information: "includes [12] [data, message, text], images, sound, voice, codes, computer programmes, software and data bases or micro film or computer generated micro fiche."

[26] Section 2(1)(k) - Computer resource is defined to include a 'computer, computer system, computer network, data, computer data base or software', most of which are defined terms under the IT Act.

[27] Footnote section 69B

[28] Footnote section 69B

[29] Page 21, IAMAI's response to TRAI Consultation Paper 2015, available at < https://trai.gov.in/sites/default/files/IAMAI_CP_27Mar2015_C.pdf >, last accessed on 24 November 2018

[30] Nasscom Response To Trai Consultation Paper On Regulatory Framework For On Players, pg. 18 available at https://trai.gov.in/sites/default/files/NASSCOM_CP_27Mar2015_C.pdf.

[31] Rule 3(7) of the Information Technology (Intermediaries guidelines) Rules, 2011.

The consultation paper has raised this question in the context of the use of security practices by OTT players, particularly encryption of communications. It suggests that miscreants may use encrypted communication services for "spreading rumour without getting traced." However, what it fails to note is that several OTT players are actively working with the government in order to introduce new features to curb the spread of rumours, to identify fake news, and to develop techniques of traceability that would stop anonymous proliferation of content. Over the last few months, several such consultations have taken place successfully, resulting in the introduction of a host of new features in this regard.

Encryption

We are of the opinion that the encryption methods and other security related measures instituted by OTT players are critical for safeguarding the privacy of users. Research suggests that it is in the national interest to encourage the use of strong encryption policies by OTT service providers, and that its social benefits must be weighed against the perceived costs to law enforcement access.
Encryption policies in India need to be evaluated in light of the following:

- The Supreme Court has recently declared the right to privacy to be a fundamental right in India, of which informational privacy is a critical facet. OTT service providers seek to safeguard informational privacy through the usage of several security measures, including a variety of encryption methods.
- The use of secure pathways for communication serves to reduce the risk of cyber-crimes. It protects financial assets and proprietary data, enhances national security and thwarts cyber-enabled crime. Strong encryption prevents enormous losses that could otherwise take place when unauthorized access is attempted through increasingly sophisticated tools by cyber criminals.

Separation of TSP and OTT Responsibility

As regards the separation of TSP and OTT responsibility, we believe that these are not comparable market players for reasons highlighted in our responses to Questions 1, 2 and 7. They operate in different layers, with TSP operating in the infrastructure layer and OTT in the application layer. Furthermore, TSP licenses confer several exclusive rights that OTT players do not enjoy. These include, for example: (i) the right to acquire spectrum, (ii) the right to obtain numbering resources, (iii) the right to interconnect with the PSTN, and (iv) the right of way to set up infrastructure. Also, OTTs enjoy no exclusive right to deploy their applications. TSPs can and often do provide their own OTT applications. On the other hand, an OTT application provider would need a license to deploy a TSP Network. As a consequence, since OTTs do not enjoy the same rights than TSPs, they should not share the responsibilities attached to these right.

In light of the above, we do not believe that any additional obligations should be imposed on OTT applications to facilitate lawful interception, and therefore it is fair and justifiable that they should have differential responsibility in this regard.

While existing mechanisms are perfectly fit for current law enforcement purposes, the government may work towards strengthening them in the light of evolving challenges through multilateral dialogues and stakeholder consultations, which have proven to be successful in the recent past. The creation of additional data access obligations would only create regulatory uncertainty and impact the ease of doing business in India.

Recommendation: TRAI should hold that there are no issues that remain unresolved *vis-à-vis* the lawful interception of OTT communication. As the Internet and Mobile Association of India has pointed out in 2015[32], any changes to the current legal framework will lead to delays in enforcement and an inconsistent approach. If it does recommend any measure, it should in consultation with MeitY and will have to apply to all communication/ internet as the whole.

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.

No such additional provisions are required as OTT providers do not offer any 'telecom services' and OTT services are highly dependent on the level/QoS of internet access to the end user which is controlled and

[32] Page 21, IAMAI's response to TRAI Consultation Paper 2015, available at < https://trai.gov.in/sites/default/files/IAMAI_CP_27Mar2015_C.pdf >, last accessed on 24 November 2018

managed by TSPs. The last mile (broadband, wireless or fixed line) access to the user is an enabler for any emergency services which can be offered by the TSP only as they provide and control the last mile. Any such obligation for OTT providers will be meaningless as they would not be in a position to support the very purpose of emergency services in the absence of their ability to manage the last mile access to the users.

Emergency services are an important part of the digital ecosystem. For emergency services, regulators in other jurisdictions have drawn a critical distinction between services for which consumers expect emergency services access, and those for which there is no such expectation. Ofcom in the United Kingdom and the Federal Communications Commission in the United States, [33] for example, have acted to ensure that the public receives emergency calling and other regulatory protections when purchasing "mainstream" services that are likely to be used as a consumer's primary form of two-way, real-time voice communication.[34] This approach ensures that customer expectations about the capabilities of their services are met, while innovative offerings that do not have attached legacy expectations are not unnecessarily burdened or discouraged.

Indeed, imposing emergency obligations on new services that differ from traditional circuit-switched voice calling may have unintended and undesirable consequences. Introducing new options may cause confusion, as customers may not understand which services can connect them to emergency help and which cannot. Moreover, when callers reach emergency services using traditional platforms, those calls are delivered using proven methods. Services that do not provide emergency calling should likewise clearly disclose their limitations, including reminding consumers to retain and use their existing mobile or landline services to make emergency calls.

This key distinction between different types of services has shaped regulatory responses to emerging services world-wide. The European Commission has observed that the regulatory treatment of VoIP depends on the nature of the service being offered.[35] In countries like Singapore, Hong Kong, and the United States regulators have drawn distinctions between emerging services and services that have the same characteristics as traditional telephony, and tailored emergency service rules accordingly.[36] For example, Singapore does not require all providers to offer access to emergency services, but does require customer notice when access is not provided.

With respect to OTT applications, it is important to consider the following:

- OTTs, which require consumer permission for location functionality, do not always have the persistent and granular geolocation information that is required for emergency services to locate emergency callers. The device operating system (OS) serves as a layer between OTT communications apps and these location inputs, meaning that an app's access to geolocation information is subject to the framework of the device OS and to user permissions for location data access. And even if geolocation information based on Wi-Fi is available, Wi-Fi is still not a consistently reliable substitute for the persistent, unlimited access to comprehensive caller geolocation information available to the network operator. For example, power outages, which are common causes of emergencies in the first instance, can affect Wi-Fi availability and positioning accuracy. And, depending on the type of device used by the caller, Wi-Fi may only capture the location of the last place where the user is logged in. As such, requiring OTT communications apps to provide access to emergency services could in fact compromise, rather than expand, access to emergency services.
- Most public-safety answering points (PSAP) are currently not equipped to handle incoming emergency communications from OTTs that are not interconnected with the PSTN. They will have to upgrade their IT systems and invest in new technologies.

---

[33] The U.S. regulator has imposed obligations on "interconnected VoIP" because they allow users to both make calls to the public switched telephone network ("PSTN") and receive calls from the PSTN. *See* 47 C.F.R. § 9.3 (interconnected VoIP service, among other things, "permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network.").

[34] *See* Ofcom, *Ofcom says VoIP providers must offer access to 999*, July 26, 2007, http://media.ofcom.org.uk/news/2007/ofcom-says-voip-providers-must-offer-access-to-999/ (discussing imposition of emergency calling on "mainstream" VoIP services); 47 C.F.R. § 9.5 (imposing 911 calling obligations on interconnected VoIP providers).

[35] European Commission, Commission Staff Working Document on the Treatment of Voice over Internet Protocol (VoIP) under the EU Regulatory Framework, June 14, 2004, *available at* http://ec.europa.eu/information_society/newsroom/cf/dae/itemdetail.cfm?type=371&typeName=Policy%20and%20legislation&item_id=13631.

[36] *See, e.g., E911 Requirements for IP-Enabled Service Providers*, First Report and Order and FNPRM, 20 FCC Rcd. 10,245, 10,256-57 23 (2005) ("VoIP 911 Order"); Info-communications Development Authority of Singapore, *IP Telephony Framework*, http://www.ida.gov.sg/Policies-and-Regulations/Industry-and-Licensees/Licensing/Framework-and-Guidelines/IP-Telephony-Framework; Office of the Communications Authority of the Government of Hong Kong, *Know More about IP Telephony Service*, http://www.ofca.gov.hk/mobile/en/consumer_focus/education_corner/guide/advice_lfs/ipts/.

- The reason telco operators have emergency services requirements is because they own the network and they know where consumers are located – automatically. Location is based on GPS information and tower location information. Operators have both and can therefore route calls properly.

Recommendation: TRAI may consider reiterating its recommendation in its Consultation on Regulatory Framework for Internet Telephony, in which it recognised the limitations of Internet Based Services and recommended the following *"In view of the above, the Authority recommends that the access service providers providing Internet Telephony service may be encouraged to facilitate access to emergency number calls using location services; however they may not be mandated to provide such services at present. The subscribers may be informed about the limitations of providing access to emergency services to Internet Telephony subscribers in unambiguous terms."*

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.

We believe there is no "non-level playing field" issue between OTT service providers and TSPs, as OTTs and TSPs provide different services, do not operate in the same network layer, and because – as discussed above – there are fundamental technical and business differences between traditional services and apps.[37] OTT providers offer an array of different services that are accessed by users through the data services provided by TSPs. Thus, the services provided by TSPs, while they enable access to OTT services, are fundamentally different – as explained earlier. Whether the app provides communications or any other function or service over the Internet, the nature of such a service and the regulatory regime applicable to it cannot be compared to the provision of internet access services *per se*.

As a result, the question of a level playing field for the two service providers does not arise. In fact, levelling the playing field between OTT providers and TSPs through regulatory or licensing norms may not even be possible in most cases. For instance, regulations that govern the spectrum licensing requirements for TSPs will not apply to OTT providers since only TSPs are allowed to directly use spectrum.[38] The notion that OTT providers are not subject to any licensing or regulatory requirements is misplaced as well. OTT providers are already strongly regulated under the IT Act[39], which regulates all "electronic communication".[40] Thus, there is no need for any additional licensing or regulatory requirements for OTT services.[41]

Another flaw in the approach that OTTs should be subject to burdensome TSP licensing and regulatory obligations in order to "level the playing field" is that TSPs are increasingly entering the OTT market in order to expand their range of service offerings and adapt to shifting consumer preferences. Imposing TSP obligations on OTTs would only hamper TSP entry into the OTT market. Instead, regulators should focus on facilitating TSP growth into OTT markets by maintaining a hands-off approach to the burgeoning OTT market.

"Levelling the playing field" does not emerge as a good premise in the analysis of extending specific legacy regulatory requirements to online service providers. Rather, the appropriate regulatory goal should be to make regulatory burdens on all providers as light as possible while still achieving critical policy objectives.

The regulatory impetus for TSPs is closely linked to the nature of the service and its indispensability to the general public. The National Digital Communications Policy (NDCP) 2018 refers to "*recognizing communication systems and services as essential connectivity infrastructure at par with other connectivity infrastructure like Roadways, Railways, Waterways, Airlines etc.*" In fact, telecom has been seen as an essential

[37] Access Now position paper: Protecting digital rights in the "OTT" debate, available at https://www.accessnow.org/access-now-position-paper-protecting-digital-rights-ott-debate/, last accessed on 28 November 2018.
[38] #NetNeutrality: Issues with the TRAI's consultation paper on Internet Services Licensing, available at <https://www.medianama.com/2018/11/223-net-neutrality-trai-consultation-ott-internet-licensing/>, last accessed on 28 November 2018.
[39] NASSCOM Response to TRAI consultation paper on regulatory framework for OTT players, Page 7.
[40] Preamble, Information Technology Act, 2000.
[41] Page 26, IAMAI's response to TRAI Consultation Paper 2015, Page 19, available at < https://trai.gov.in/sites/default/files/IAMAI_CP_27Mar2015_C.pdf >, last accessed on 24 November 2018

commodity from the time of National Telecom Policy 2012, which had sought to "*recognise telecom, including broadband connectivity as a basic necessity like education and health and work towards Right to Broadband.*"

The regulation of an essential resource is fundamentally different from the regulation of any other service. OTT applications operate in an extremely competitive market, and OTT providers do not control critical infrastructure that holds value to the public. Thus, the regulatory framework for the two cannot be the same.

It should be noted that, as explained above, competition laws, consumer protection laws and information technology laws already govern the relevant facets of internet services, so it would be incorrect to characterize this market as unregulated. On the contrary, a far broader range of laws and regulations are applicable to an OTT service provider depending on the nature of services sought to be provided by it. Therefore, it would result in incoherent regulatory governance if additional regulations applicable to a different industry are imported for a specific sub-section of OTT players.

The impact of a potential license raj for OTT players would also have an enormous spill over effect on consumer welfare, which cannot even be predicted at this stage. Not only would individuals, companies and entire industries that rely on various OTT services find their costs increasing disproportionately, it would also result in much confusion as regards to who comes under the purview of such "levelling" regulation.

Moreover, licensing requirements or other heavy-handed regulatory obligations could create barriers to entry and expansion for app providers, particularly start-ups that lack the resources to obtain a license or establish locally in every country where their applications are provided. This could result in Indian consumers not being able to access the full benefit of global online applications, depriving the Indian public of innovative and useful technology.

Licensing requirements could also impair the ability of Indian businesses to use online applications to grow and reach more people. The global reach of online applications makes them useful to business, including small businesses, because it enables companies to reach a larger potential customer base that extends beyond India's borders. This increases their business and collectively expands the Indian economy. Licensing requirements could fragment applications and services provided over the Internet and therefore erode the utility and usefulness of a global outlet for Indian businesses. Keeping the Internet open, decentralised, and free of barriers is critical to helping Indian businesses remain competitive in today's increasingly digital economy.

Further, enacting licensing or other prescriptive regulatory requirements might set precedent for other countries to follow suit with reciprocal regulations for online applications, one effect of which would be to build walls for Indian digital entrepreneurs trying to expand beyond India's borders.
And as TRAI notes in the consultation paper at Para 2.2.8, the multiplicity of functionality offered by such platforms may make it difficult to practically segregate communication from non-communication related OTTs. Thus, we may find ourselves in a position where OTT applications that provide the same basic functionality, are treated differently under law simply on account of the different ancillary functionalities they offer, which may be seen as competing with TSPs. With increased innovation in the development of OTTs, such distinctions will become more and more complicated, and would soon give rise to entirely new "non-level playing field" considerations across OTT applications. As a matter of policy, regulators should prioritise clarity and predictability. Otherwise, regulation risks becoming obsolete with development of new technology and services. The lack of regulatory justification for imposing TSP restrictions for OTT players, coupled with difficulty of enforcement, and the extremely negative impact it may have on consumers, would make any regulatory intervention highly cumbersome and potentially undermine the authority of the regulator who seeks to impose them.

Recommendations:

- Policy makers should take an innovation-first approach by identifying the rules that are barriers to innovation; clarifying the original public interest values served by legacy policies to determine which values remain relevant; leveraging technology to help address today's concerns.[42]
- Rather than seek to impose existing TSP obligations on OTTs in order to create a so-called level playing field, regulators should focus on mechanisms to relieve TSPs of burdensome and unnecessary regulatory obligations. Two key areas that could be considered from de-regulation or a lighter touch approach to TSP regulation include streamlining and simplification of licensing (such as move to a notification-only approach to ease market entry), as well as reduced spectrum and licensing fees. The global ICT sector has changed and merits looking at which legacy laws and regulations are still need needed, which should be modified, and should be eliminated.

[42] Tennenhouse and Gillet What About Innovation? Intermedia vol 42(1), Spring 2014

- The operation of OTT providers should be left to the market forces, as there is no need to level the playing field between OTT providers and TSPs, by the virtue of them operating in the network and content layers respectively. Regulating OTT providers in the same manner as TSPs will do nothing to level the playing field between OTT providers and TSPs and may even be detrimental to telecom revenues, as it will make business more cumbersome for OTT providers[43] which will affect the demand for mobile data services.

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.

Legacy telecommunications regulations should not be automatically extended to online applications because of the fundamental technical and business differences between traditional services and apps. Based on the fundamental differences between OTTs and TSPs, licensing and other regulatory obligations are unjustified and unreasonable. For example, most OTTs are free (or very low cost). The high costs of licensing and regulatory compliance would be another factor that could effectively eliminate the OTT market.

As stated in the answers to Question 4 and 5, current Indian laws more than adequately address content regulation, interception, competition and other relevant concerns that may impact OTT providers. Therefore, OTT providers do not require any additional regulations and licensing conditions over and above those that are already applicable to them under relevant laws of India

We instead strongly urge the Authority to consider reducing the legacy regulatory barriers on TSPs, especially licence fees, spectrum usage charges, other levies and taxes, to improve the business case for TSPs. A less burdensome regulatory regime will benefit all stakeholders as well as the economy at large.

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

Regulating OTT providers will stifle innovation and work against the goals of a "Digital India"

As we have stated throughout this submission, TRAI's thoughts to regulate OTT services amount to an attempt to regulate the whole internet. Any such attempt will kill innovation in India, and hurt the Indian government's flagship Digital India programme[44] ("**Digital India**").

Through Digital India, the Indian government wants to transform the country into a digitally empowered society,[45] recognizing the enormous social and economic potential of the internet. The open internet is a key driver of innovation and economic growth in India.[46] In 2015, the internet economy contributed nearly 3% of India's Gross Domestic Product.[47] In 2016, the consumer surplus[48] created by OTT services alone was equivalent to 4.3% of India's GDP that year.[49] Further, it is estimated that enabling internet access in India to comparable levels in more developed countries can create 65 million jobs, accelerate GDP growth by 110%, increase per capita income by 29% and reduce extreme poverty by 28%.[50]

However, much of the value created by the internet is only because of its open and inclusive nature.[51] This was recognized by Sri Ravi Shankar Prasad, the Union Minister for Electronics and Information Technology, when he expressed the Indian government's categorical support for an "open, plural and inclusive"[52] internet that

[43] NASSCOM Response to TRAI consultation paper on regulatory framework for OTT players, Page 8.
[44] Footnote the Digital India webpage
[45] http://www.digitalindia.gov.in/content/vision-and-vision-areas.
[46] NASSCOM 2015 responses, Page 16.
[47] Creating a $200 billion Internet Economy. Study for the Internet and Mobile Association of India (IAMAI) by the Boston Consulting Group.
[48] Consumer surplus is an economic measure of consumer benefit, which is calculated by analyzing the difference between what consumers are willing and able to pay for a good or service relative to its market price, or what they actually do spend on the good or service. It is therefore an estimate of the consumers' perception of value of the service relative to other available alternatives. See The Economic and Societal Value of Rich Interaction Applications in India, Page 10.
[49] The Economic and Societal Value of Rich Interaction Applications in India, Page 11.
[50] Page 2, IAMAI's response to TRAI Consultation Paper 2015, available at < https://trai.gov.in/sites/default/files/IAMAI_CP_27Mar2015_C.pdf >, last accessed on 24 November 2018
[51] Page 25, http://icrier.org/pdf/open_Internet.pdf
[52] Page 21,22, http://meity.gov.in/writereaddata/files/Booklet_Final_20160517.pdf

allows access "without discrimination".[53] As the Telecommunications Authority of Trinidad and Tobago has observed, "regulatory oversight of OTT services […] implies regulatory oversight of an aspect of the Open internet." Thus, regulating OTT services will truncate the open internet and dilute its ability to fuel innovation. This in turn will affect the government's Digital India programme, which relies heavily on the ability of online services to create opportunities.

In Order to Spur Network Investment, Policymakers Should Focus on Removing Barriers to Network Deployment.

We note two key areas—access to infrastructure and access to spectrum—where policy reform can quickly spur network deployment.

Building a network is a complex undertaking. It can require: digging trenches underground to install conduit for fiber, installing or improving utility poles to run fiber above ground, and a myriad of construction permits, among other things. Governments can work to streamline regulations in this area – ensuring clear expectations for industry on what is needed to deploy, while minimizing unnecessary and unreasonable delays. Governments should take action to maximize the sharing of utility poles and other existing infrastructure to reduce construction costs. Studies have found that these measures can cut costs by 20-30%.[54] By adopting clear and predictable processes that encourage infrastructure sharing, governments can provide certainty and spur investment in new and existing networks.

Spectrum is the lifeblood of wireless Internet access, and also should be a principal focus for policymakers. As global mobile data traffic is projected to grow eleven-fold by 2018,[55] it is critical that governments take steps to make more spectrum available.

---End of Submission---

[53] Page 7, http://meity.gov.in/writereaddata/files/Booklet_Final_20160517.pdf
[54] *See Preserving the Open Internet*, Report and Order, 25 FCC Rcd. 17,905 (2010) ("2010 Open Internet Order"); *See* European Commission, *European Economy: Market Functioning in Network Industries – Electronic Communications, Energy and Transport*, Occasional Papers 129, Feb. 2013, *available at* http://ec.europa.eu/economy_finance/publications/occasional_paper/2013/pdf/ocp129_en.pdf.
[55] Cisco Mobile Forecast at 18.