

**Consultation Paper on
Regulatory Mechanism for Over-The-Top (OTT) Communication Services, and
Selective Banning of OTT Services**

Response to the Consultation Paper

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A. Issues Related to Regulatory Mechanism for OTT Communication Services

- 1) What should be the definition of over-the-top (OTT) services? Kindly provide a detailed response with justification.**
- 2) What could be the reasonable classification of OTT services based on an intelligible differentia? Please provide a list of the categories of OTT services based on such classification. Kindly provide a detailed response with justification.**
- 3) What should be the definition of OTT communication services? Please provide a list of features which may comprehensively characterize OTT communication services. Kindly provide a detailed response with justification**
- 4) What could be the reasonable classification of OTT communication services based on an intelligible differentia? Please provide a list of the categories of OTT communication services based on such classification. Kindly provide a detailed response with justification.**

Combined Response for Q 1-4

OTT communication services providers and other OTTs can be distinguished on the basis of the following principles:

Core service: As per TRAI (2018), if the core service provided by an OTT is electronic communication, either peer-to-peer, one-to-many or many-to-many, then it can be designated as a Communications OTT service provider.

Transport, E-commerce, EdTech and other OTTs: By the above definition, though many OTTs may have communication services built into their applications, OTTs in verticals such as transport, hospitality, education, or e-commerce do not qualify as communication services since their core service is that of a marketplace or intermediary service and not communication services. Further the communication services in these applications are designed to only facilitate transactions in their marketplace services.

They also provide a number of non-communication services on their platform like registration, and user rating. Similarly, e-commerce sites of companies (for example, websites of companies that sell airline tickets) cannot be classified as communication services.

OTT video services: OTT services that are primarily broadcast in nature (i.e. one to many) and provide video downloads, video streaming and pay-per-view video services over the Internet shall be considered as OTT video services. These are in general Large Traffic Generators (LTGs) and consume a large amount of Internet bandwidth. There are service providers in EdTech, entertainment, and even HealthTech that can possibly come under this category if they are LTGs.

Exceptions for Email Services: Email has been traditionally conceptualised as a substitute for written or postal communication. With advances in technology and the capacity of the underlying internet infrastructure, it has evolved into near synchronous messaging. However, it is still being considered and used as a relatively asynchronous service compared to instant messaging, SMS or telephony. Therefore, email should be treated as an exception and not included in the list of communication services, like those provided by the MNOs. Email should not be considered as communications OTT service, until there is a shift and the use becomes observably substitutable.

Using the above definition, we shall designate OTT services such as WhatsApp, Skype, Viber, Hike, Facebook Messenger, Zoom as examples of OTT Communication services. Services such as Netflix, Amazon Prime video, Hotstar and Jiocinema shall be categorized as OTT video services. Here we have to rely on the principle of core service and the proportion of traffic fulfilling the core service to distinguish between the communications, video services and marketplace functions.

- 5) Please provide your views on the following aspects of OTT communication services vis-à-vis licensed telecommunication services in India: (a) regulatory aspects; (b) economic aspects; (c) security aspects; (d) privacy aspects; (e) safety aspects; (f) quality of service aspects; (g) consumer grievance redressal aspects; and (h) any other aspects (please specify). Kindly provide a detailed response with justification.**
- 6) Whether there is a need to bring OTT communication services under any licensing/regulatory framework to promote a competitive landscape for the benefit of consumers and service innovation? Kindly provide a detailed response with justification.**
- 7) In case it is decided to bring OTT communication services under a licensing/regulatory framework, what licensing/ regulatory framework(s) would be appropriate for the various classes of OTT communication services as envisaged in the question number 4 above? Specifically, what should be the provisions in the licensing/ regulatory framework(s) for OTT Communication services in respect of the following aspects: (a) lawful interception; (b) privacy**

and security; (c) emergency services; (d) unsolicited commercial communication; (e) customer verification; (f) quality of service; (g) consumer grievance redressal; (h) eligibility conditions; (i) financial conditions (such as application processing fee, entry fee, license fee, bank guarantees etc.); and (j) any other aspects (please specify). Kindly provide a detailed response in respect of each class of OTT communication services with justification.

8) Whether there is a need for a collaborative framework between OTT communication service providers and the licensed telecommunication service providers? If yes, what should be the provisions of such a collaborative framework? Kindly provide a detailed response with justification.

9) What could be the potential challenges arising out of the collaborative framework between OTT communication service providers and the licensed telecommunication service providers? How will it impact the aspects of net neutrality, consumer access and consumer choice etc.? What measures can be taken to address such challenges? Kindly provide a detailed response with justification

Combined Response for Q 5 - 9¹

The Integrated Sphere of Coopetition

Telcos and internet companies are traditionally regarded as complementary. This is not surprising. After all, internet companies provide content and applications that ride on connectivity provided by telcos. However, the growth of 5G technologies is seeing the growth of an integrated sphere of competition and cooperation between telcos and internet companies.

The growth in over-the-top (OTT) communication services, which rely on the Internet to provide their services, has been accompanied with significant reductions in the usage and revenues of text messaging services in the past years. In 2015, the consumption of text messaging declined in Germany by 41%, Italy by 40% and the UK by 15.3% (AGCOM, 2015; Ofcom, 2015). While the limited empirical analysis carried out to date suggests complementarity between internet messengers and SMS, the studies are relevant to limited geographies, and constrained by the inherent difficulty of estimating demand for services which are not charged (Wellman, 2019).

Further, while the majority of OTT services ride on internet connectivity provided by telcos, there is a growing trend of OTTs venturing into the space of the provision of internet connectivity. This phenomenon is enabled by the increasing availability of unlicensed spectrum and its potential to provide high quality connectivity. Similarly, the growth of VOIP

¹ Sridhar and Prasad, 2023, "5G and Beyond: Formulating a Regulatory Response" InViCT
<https://icrier.org/inviCT/5GandBeyond.pdf>

services provided by OTT players could potentially take business away from traditional mobile or fixed line telephony.

One way to compare the OTT and MNO services is to examine their mutual substitutability. (See Table 1)

Table 1. Substitutability of MNO and OTT services

Substitutability Factor of OTT services	Whether Substitutable	Remarks
Voice over IP, messaging, video calls and video broadcasting.	√	These are very similar to services MNOs provide. In the case of broadcast video, MNOs provide mobile video services. These are substitutable as they are functionally equivalent. Further, they can be provided over the Internet connection over Wi-Fi or any other mode without having a telco connectivity.
Voice over IP with termination on a public switched telecom network / public land mobile network	X	These are not currently substitutable as this requires conversion of IP address to the telephone numbering system using an Internet-PLMN/ PSTN bridge. While this service can be provided by MNOs and VNOs as they are licensed to interconnect to PSTN/PLMN, regulations prohibit OTT communication service providers to do the same unless licensed or authorized.
Emergency services that require interconnection to PLMN/PSTN or other networks that connect devices to the Emergency Service Provider.	X	Since OTT applications are closed apps and do not interconnect with other types of OTT services such as PLMN/PSTN, this service is not a substitutable service at present. However, even if the technology is available for this type of interconnection, since the Quality of Service provided by the OTT firms is based on the underlying Internet connectivity, the responsibility of providing Emergency services on OTT is difficult to enforce.

The Toll free 1-800 and 1-900 services.	X	These services need interoperability across originating and terminating service providers and services. These cannot be provided by the closed OTT service providers. Hence this service is non-substitutable.
Bulk messaging using broadcast services like SMS/ VoIP	√	Current SMS/ Voice calls can be substituted by OTT based Messaging/ VoIP apps. This service is substitutable.

Source: Adapted from Sridhar, 2019

But as OTT services are beginning to substitute telecoms services, and OTTs and other entities are carrying out backward integration into the provision of the network, telcos are also engaging in forward integration into the application layer, and backward integration into the product and device space as they attempt to compete in this changing landscape. The new elements of this competitive landscape stem from the hybridization of network provision, the growth of substitute services, and the jostling for a share of the pie earned by 'walled gardens'- end to end value networks comprising devices, connectivity services, and a variety of content and application companies. These new dynamics occasion the application of a new regulatory framework that introduces the concept of Diagonal Equity.

Vertical, Horizontal, and Diagonal Equity

The objective of vertical equity leads to recommendations that bring about greater equality between entities that operate in the same industry, hence can be said to be similar, but are at different levels of financial resources. An example is giving startups in the search industry some benefits that enable them to compete with the larger search engines.

The objective of horizontal equity leads to recommendations of similar regulatory treatment of dissimilar entities, with similar or dissimilar resources. For instance, regulation could be used to bring parity in the regulatory approach toward the public sector company and private sector companies in an industry, or between two business schools, one with only women participants, and the other with a mixed intake of students.

We introduce a new concept, that of diagonal equity. The objective of diagonal equity leads to recommendations of similar regulatory treatment of entities that operate in different industries. This stance flows from the recognition that there is a blurring of lines between two industries, telcos and communications OTTs, that demands a convergence of regulatory approaches.

In the world of technological neutrality, as argued above, the time has come to move away from approaches that treat telcos as providers of essential services and thereby subject to more stringent regulation than OTTs. It is time to adopt principles of diagonal equity across

telcos and significant OTTs, the details of which are provided below. This is not to say that the two kinds of entities are to be brought under the same regulatory umbrella. We propose a bifocal mode of regulation with razor sharp focus on a set of issues identified as critical to telecom connectivity, and, simultaneously, a clear picture of the transformative developments of the entire digital ecosystem that are underway. The intertwining of services provided by telecom equipment vendors, content distribution networks, connectivity service providers, software vendors, cloud infrastructure service providers, and content and application developers makes such a holistic view necessary for appropriate policy and regulatory frameworks for any part of the entire digital ecosystem.

Net Neutrality

Since the controversial term “Net Neutrality” (NN) was coined by Professor Tim Wu of Columbia Law School in 2003, most of the debates on NN revolved around the harmful consequences of Telecom and Internet Service Providers (TISPs) exercising control over the data traffic in their networks. The focus on TISPs in the net neutrality debate stems from the unique position they have traditionally held in the internet value chain conceptualized as a two-sided market with content and application providers (CAPs) on one side and end users on the other with the TISP as a bottleneck monopoly in between them.

Clearly, a dominant TISP can hinder competition in a downstream market in a number of ways, including by exercising market power in pricing, or by vertical arrangements (either formal or informal) with content and application providers. As is obvious, the original conception of net neutrality was appropriate only for the early days of the internet. The outdated assumption that all innovation takes place within the CAPs and TISPs can only be ‘dumb’ pipes (hence not innovative), and the belief that only TISPs could misuse gatekeeper functions are two fundamental pillars on which the original formulation of net neutrality rested. Both are questionable.

In the current context the most important tasks for advocates of net neutrality is to ensure QoS in the public network, and competitive markets in the provision of network slicing. If not done properly, the construction of network slices for private networks could affect the capacity and reliability requirements of network capacity allocated for PLMNs. As a result, public users would be at a significant disadvantage. Further, the market for network slices could be distorted by the actions of influential CAPs. The following are the contours of the new approach that would address these challenges

1. Allocate enough capacity network slices for public network that guarantees the broadband requirements defined by the regulator. The objective should be to ensure good 4G-level connectivity. The current requirement in India is 2 Mbps downlink speed for an individual connection.

The Body of European Regulators for Electronic Communication (BEREC) has developed a useful regulatory assessment methodology in order to provide guidance to National Regulatory Authorities (NRAs) with the implementation of the net neutrality provisions of the Regulation (BEREC, 2017). It is intended to help regulators in the monitoring and supervision

of the net neutrality provisions of the Regulation based on various net neutrality measurement tools and harmonised measurement methodology for quality of service. According to the Regulation, TISPs must describe the minimum, normally available, maximum and advertised download and upload speed in their fixed network contracts. For mobile network subscriptions, TISPs must describe estimated maximum and advertised download and upload speeds. One of the important uses of TISPs disclosing the advertised service parameters and their subsequent measurement is to detect unreasonable Traffic Management Practices including throttling and traffic shaping of certain applications or content. Apart from TISPs submitting all the QoS parameters, third party tools are also available for detecting traffic prioritization as given in Sridhar (2019). Such a methodology can be used to monitor the performance of the public internet.

2. The contractual technical agreements for private network slices should be filed by the communication service providers periodically with the regulator to ensure that the mentioned QoS for public network slices as given in (1) are possible. If there are any anomalies detected, then the regulator can take remedial measures to address the same.
3. Since CDNs are not directly providing services to end users, they should not be made subject to Net Neutrality rules, including for any traffic prioritization at the behest of TISPs or CAPs.
4. The space of specialized services should be broadened to include the various possibilities that emerge with 5G technologies.

While net neutrality takes on new dimensions in a 5G world, the regulator cannot restrict themselves to ensuring fair access to the internet for CAPs and end users. Many CAPs have become essential gatekeepers on the internet and acquired significant market power. Hence, the spirit of net neutrality has to be extended to the digital ecosystem as a whole.

Interconnection and Data Portability

A similar exercise of identifying underlying economic principles and applying them equitably across telcos and internet companies needs to be carried out in the case of interconnection. For telecom networks, interconnection is mandatory for all licensed operators. The setting of interconnection charges must reconcile the objectives of facilitating competition, and enabling wholesale cost recovery and promoting investment in infrastructure to achieve rapid diffusion of telecom services. Low access charge would dis-incentivize infrastructure investment and ignore potential economies of scale and network externalities. On the other hand, high charges would disincentivize market entry and amount to exercise of market power. An underlying driver of interconnect regulation is the perception of voice telephony as a basic need.

Similar principles can be invoked for VOIP services, social networks, instant messengers, and indeed any service that exhibits network externalities. Inability to interconnect restricts competition. Given the role being played by social networks and other internet sites in the politics of a country, the ability to interconnect, like voice telephony, could well be regarded as

a public good. Hence some form of interconnect regulation is relevant for internet companies just as it is for telecom regulators, and we must ask if it has been levied to the required degree.

The ability of an end user to migrate to an alternate network is a mirror image of his/ her ability to connect with users in other networks. Telecom networks are required to facilitate such migration by measures like mobile number portability. This facilitation increases the contestability of the telecom market and mitigates the possible abuse of a dominant position. One could argue that end users could benefit from similar possibilities of portability with respect to internet messengers, social networks, email applications, and so on. Therefore, just as it is important to insist on mobile number portability to promote competition in telecom markets, it is important to hold internet companies to similar standards with regard to data portability. To what extent has this been done?

Interconnection, interoperability and portability are measures that provide choices for the consumers and prevent lock-in effects. The interconnection and the interoperability through standardized interfaces have been in existence for telecom networks. However, these are new areas for the regulation of OTT communications. Our recommendations are as follows:

1. The current domestic MTC regulation of Bill & Keep needs to be reviewed given the likely asymmetries in the traffic flows between OTT apps and PSTN/PLMN.
2. The network providers shall facilitate the set up of media gateways of adequate capacity for the interconnection of Internet Telephony services with carrier networks.
3. The international MTC for calls originating in OTT communication apps terminating on PSTN/PLMN in India shall be as per the existing MTC regulations.
5. For the VNOs, the existing regulations on numbering schemes and number portability are applicable.
- 6 The OTT communication providers shall enable interconnection with other OTT communication apps through open protocols such as XMPP, much the same way internetworking is mandated for carrier networks.
7. The significant OTT communication providers shall provide subscriber data portability, similar to number portability as mandated for carrier communication, to enable consumers to port from one OTT communication app to another.

Universal Service

Governments aim to achieve universal provision of basic telecom services through a universal service obligation imposed on telcos. This obligation takes the form of a universal service levy and also certain rollout obligations.

Moreover with the internet traffic going up exponentially especially in the pandemic years, has led to unprecedented strain on the telcos who have expended huge resources to maintain their networks driven mainly by traffic from a few leading OTT players

Global debate has started around the need for OTT players to pay a fair share for the development of the networks that are used by them to deliver their services. The European Digital decade package has committed to developing adequate frameworks so that all market actors benefiting from the digital transformation assume their social responsibilities and make a fair and proportionate contribution to the costs of public goods, services and infrastructures, for the benefit of all Europeans. Recently, the 'fair share' resolution was included in a competition policy document by members of the European Parliament. They voted in favour of a 'policy framework' that would call on big tech companies to contribute to telco capex budgets (Telecom TV, 14 June 2023).

An interesting case study is that of South Korea, where SK Telecom asked Netflix to contribute to the cost of network expansion when Netflix traffic exploded on SK Broadband's network 26 fold over two years. Netflix sued SK Broadband, claiming it had no obligation to negotiate with or pay for the use of SK Broadband's network. However this argument of Netflix was rejected by the court in June 2021, holding that since Netflix is receiving network services in the form of management of network quality and maintenance work to maintain its explosive surge of viewers, it must pay a reasonable price to be negotiated between the parties. While Netflix has filed an appeal against the Seoul court decision, which is currently pending, meanwhile, In December 2020, the National Assembly of South Korea promulgated the so-called Netflix Law which requires content providers that attract an average of more than 1 million users per day and account for more than 1 percent of Korea's internet traffic are responsible for ensuring network stability and to pay a fee to cover network use (Feigenbaum & Nelson, 2021).

In a world where a profusion of connectivity services have emerged, OTT service providers cannot continue to 'ride for free' The universal service levy, which is presently being borne by the infrastructure provider/telco needs to be actually paid by those who utilize the infrastructure being set up by others. Hence, they need to pay a levy to ensure the quality of the public internet. This can be charged both as a IUC charge in case of OTT Communication players and as a Broadband Infrastructure levy in case of other OTT players. Hence, significant OTTs, such as OTT video service providers, shall pay a fee to cover their use of the networks and contribute to a Broadband Infrastructure Fund to finance the rollout of the connectivity infrastructure that carries their traffic .

We propose a Broadband Infrastructure Levy to be applied at 3% of India operations to VNOs, significant OTT communication service providers and significant OTT video service providers to contribute to the Broadband Infrastructure Fund. The applicable revenue should be net of revenue earned on the basis of specialized contracts between service providers and the network operator.

The Universal Service Levy remains at the government mandated rate of 5% of AGR to be applicable for network providers.

Summary of Proposals for OTT Regulations

Regulatory Aspect	OTT Communications Service Providers
Type of Licensing	General Authorization, if significant, else Registration
Interconnection regulation	Universal interconnection and portability between all types of service providers
License and Regulatory Fees	Fixed Authorization fee + Broadband Infrastructure Levy @3% as percentage of AGR for Significant OTT Communication and Video Service Providers Fixed Registration Fee for non-significant OTTs
Emergency Services	Yes, if significant
QoS	Yes
Net Neutrality	No