



भारतीय दूरसंचार विनियामक प्राधिकरण
Telecom Regulatory Authority of India

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

New Delhi, India

07.07.2023

Written Comments on the Consultation Paper are invited from the stakeholders by 04.08.2023 and counter-comments by 18.08.2023. Comments and counter-comments will be posted on TRAI's website www.trai.gov.in. The comments and counter-comments may be sent, preferably in electronic form, to Shri Akhilesh Kumar Trivedi, Advisor (Networks, Spectrum and Licensing), TRAI on the email ID advmn@traigov.in.

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CONTENTS

Chapter	Topic	Page No.
Chapter I	Introduction and Background	1
Chapter II	Examination of the Issues Related to Regulatory Mechanism for Over-The-Top (OTT) Communication Services	9
Chapter III	Examination of the Issues Related to Selective Banning of OTT Services	58
Chapter IV	International Practices	69
Chapter V	Issues for Consultation	84

ANNEXURE

Annexure 1	DoT's Back Reference Dated 07.09.2022	88
	List of Acronyms	92

CHAPTER I: INTRODUCTION AND BACKGROUND

A. Introduction

- 1.1 In July 1992, the Government of India opened eight value added services (viz. Electronic Mail, Voice Mail, Data Services, Audio Text Services, Video Text Services, Video Conferencing, Radio Paging, Cellular Mobile Telephone) for private participation and introduced a licensing regime for telecommunication services in the country. Subsequently, in the year 1994, the licenses for cellular mobile telephone services were granted to private entities for the first time. Since then, many new telecommunication services have been brought under licensing regime. At present, the Government of India follows Unified Licensing Regime for telecommunication services. Eligible entities may obtain appropriate authorizations under Unified License from the Government and provide a range of telecommunication services to their customers.
- 1.2 In the year 1997, Telecom Regulatory Authority of India (hereinafter, also referred to as, “the Authority”) was established through an Act of Parliament namely ‘The Telecom Regulatory Authority of India Act, 1997’. The Authority is mandated to regulate telecommunication services, protect the interests of service providers and consumers of the telecommunication sector, and promote and ensure orderly growth of the telecommunications sector in the country.
- 1.3 India is currently the world’s second-largest telecommunications market. As on 31.03.2023, there were 1.172 billion¹ telephone subscribers in the country. Till about 2012, voice telephony and Short Message Service² (SMS) were the flagship telecommunication services in the country. Thereafter, internet

¹ Source: TRAI’s press release on Telecom Subscription Data as on 31st March 2023, accessible at <https://traai.gov.in/release-publication/reports/telecom-subscriptions-reports>

² Short message service (SMS) is a facility that enables a mobile device to send, receive and display messages of up to 160 characters. Messages received are stored in the network if the subscriber device is inactive and are relayed when it becomes active.

services, particularly Broadband³ internet services, have witnessed a remarkable growth in the country. The broadband subscriber base in the country leapfrogged by 55 times from a modest base of about 15 million in December 2012 to about 832 million in December 2022⁴. The compound annual growth rate (CAGR) of broadband subscriber base in India was about 49% during the period from the year 2012 to 2022.

1.4 With the growth⁵ in mobile and fixed broadband penetration, a wide variety of Over-the-top (OTT) services have become available to consumers. As per International Telecommunication Union (ITU), OTT is *an "application accessed and delivered over the public Internet that may be a direct technical/ functional substitute for traditional international telecommunication services."*⁶ The best-known examples of OTT are Whatsapp, Telegram, skype, etc.

1.5 In the past one decade, the OTTs have hugely impacted the telecommunication ecosystem worldwide. As a result, the impact of OTTs is being analyzed in many countries. In India, initial attempts to analyze the impact of OTT services were made in the year 2015 separately by Telecom Regulatory Authority of India (TRAI) and the Department of Telecommunications (DoT), Government of India. TRAI issued a consultation paper on Regulatory Framework for Over-the-top (OTT) services dated 27.03.2015⁷ for consultation with stakeholders. The said consultation process remained inconclusive. Besides, DoT issued 'Net Neutrality DoT Committee Report'⁸ in May 2015. The said report examined, *inter-alia*, the OTT services, and their impact on the telecom sector.

³ Broadband technology allows for high-speed transmission of voice, video and data over networks and ICT applications.

⁴ Source: TRAI's reports titled 'The Indian Telecom Services Performance Indicators' for October-December 2012 and October-December 2022, accessible at <https://traigov.in/release-publication/reports/performance-indicators-reports>

⁵ It is noteworthy that most of the growth has been witnessed in the mobile broadband segment, with only incremental growth in the fixed broadband segment.

⁶ Source: Recommendation D.262 (05/2019) issued by Telecommunication Standardization Sector of International Telecommunication Union (ITU-T), available at <https://www.itu.int/rec/T-REC-D.262-201905-I>

⁷ The said consultation paper is available at TRAI's website at URL: <https://traigov.in/sites/default/files/OTT-CP-27032015.pdf>.

⁸ The said report is available at DoT's web-site at URL: https://dotgov.in/sites/default/files/Net_Neutrality_Committee_report%20%281%29_0.pdf

1.6 Thereafter, in the year 2016, DoT, through a reference letter dated 03.03.2016, requested TRAI to provide its recommendations on net neutrality including traffic management and economic, security & privacy aspects of OTT services, etc. Considering the complexity of the issues, referred to in the DoT's reference letter dated 03.03.2016, and other interrelated issues, the Authority chose to deal with specific issues through distinct consultation processes. The Authority released the following recommendations and regulations pertaining to the issues referred to in the DoT's reference letter dated 03.03.2016:

Date	Recommendations and Regulations
08.02.2016	TRAI issued 'The Prohibition of Discriminatory Tariffs for Data Services Regulations, 2016'.
24.10.2017	TRAI sent the Recommendations on 'Regulatory Framework for Internet Telephony' to DoT.
28.11.2017	TRAI sent the recommendations on 'Net Neutrality' to DoT.
16.07.2018	TRAI sent the recommendations on 'Privacy, Security and Ownership of Data in the Telecom Sector' to DoT.

1.7 In respect of OTT services, the Authority issued 'Consultation Paper on Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 12.11.2018⁹ and raised various issues for comments and counter-comments from stakeholders. Based on the comments received on the issues raised in the said Consultation Paper and further analysis, the Authority sent its Recommendations on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.09.2020¹⁰ to DoT. The said recommendations are reproduced below:

⁹ The said consultation paper is available at TRAI's website at URL: <https://traigov.in/sites/default/files/CPOTT12112018.pdf>

¹⁰ The said recommendations are available at TRAI's website at URL: https://traigov.in/sites/default/files/Recommendation_14092020.pdf

"3.1 The Authority recommends that

- i. Market forces may be allowed to respond to the situation without prescribing any regulatory intervention. However, developments shall be monitored and intervention as felt necessary shall be done at appropriate time.*
- ii. No regulatory interventions are required in respect of issues related with Privacy and security of OTT services at the moment.*
- iii. It is not an opportune moment to recommend a comprehensive regulatory framework for various aspects of services referred to as OTT services, beyond the extant laws and regulations prescribed presently. The matter may be looked into afresh when more clarity emerges in international jurisdictions particularly the study undertaken by ITU."*

B. DoT's Back Reference Dated 07.09.2022

1.8 Thereafter, through a back reference dated 07.09.2022 (**Annexure 1**), DoT requested the Authority to reconsider the Recommendations on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.09.2020 and suggest a suitable regulatory mechanism for OTTs, including the issues relating to 'selective banning of OTT services' as part of its recommendations in accordance with the provisions of section 11 of TRAI Act 1997 (as amended). The said back reference is reproduced below:

"This has reference to the recommendations of TRAI of 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.09.2020. These recommendations have been considered by the Government and the following is submitted in this regard-

- i. Whereas TRAI has recommended that "No regulatory interventions are required in respect of issues related with Privacy and security of OTT services at the moment", it has not provided any detailed justification for recommending the same.*
- ii. In view of the humongous growth of OTT services in the recent past and these services having reached a matured stage, there is a need to*

holistically look into the various aspects of these services including regulatory, economic, security, privacy, and safety aspects. This is also in keeping with para 2.2 of the National Digital Communications Policy - 2018 which mentions the policy goal for "Ensuring a holistic and harmonized approach for harnessing Emerging Technologies". It has been mentioned therein that a policy framework for 'Over the Top' services will be developed.

- iii. The above-said recommendations dated 14.09.2020 are based on the Consultation Paper of TRAI dated 12th November 2018 on 'Regulatory Framework for Over-The-Top (OTT) Communication Services'. The consultation revolved mainly on the issue of imbalance between TSPs and OTT players providing services that can be regarded as same or similar to services offered by TSPs and issues relating to economic aspects of such OTT services. On the other hand, the Consultation Paper of 2015 titled 'Regulatory Framework for Over-The-Top (OTT) Services focused on possible regulatory and licensing framework for OTT services along with related safety, security, and privacy concerns in addition to Net Neutrality issues.*
 - iv. Further, recommendations dated 14.09.2020 are at variance to TRAI's earlier recommendations on Privacy, Security and Ownership of the Data in the Telecom Sector dated 16.07.2018 wherein it was concluded that "since these entities are not governed by the license conditions, application for Telecom Services Providers, the need for regulation of these entities of the digital ecosystem to ensure protection of consumers privacy and data security is urgent and inescapable."*
- 2. A kind reference is also invited to the recommendation no. 14 of the 26th report of the Parliament's Standing Committee on Communication and Information Technology on the subject 'Suspension of Telecom Services/ Internet and its impact' (attached as Annexure-1), gist of which is as under-*
- The Committee strongly recommended that the Department urgently examine the recommendation of TRAI and come out with a policy which will enable the selective banning of OTT services with suitable*

technological intervention, such as Facebook, WhatsApp, Telegram services during period of unrest/ crisis that are liable to be used by the terrorists or anti-national element/ forces of ferment trouble in the specified regions. The Committee look forward to positive development in this regard.

With respect to the abovementioned recommendation of the Parliament's Standing Committee, DoT replied that it will explore the possibility of regulation of OTT services and banning the services on selective basis in consultation with TRAI, MEITY and MHA.

3. In view of above it is requested that TRAI may reconsider its recommendations on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.09.2020 and suggest a suitable regulatory mechanism for OTTs, including issues relating to "selective banning of OTT services" as part of its recommendations in accordance with the provisions of section 11 of TRAI Act 1997, as mentioned in 2000."

1.9 The Authority analyzed the afore-mentioned back reference and sent its response dated 01.11.2022 to DoT. A relevant extract of the said response is reproduced below:

"2. ..., the following points are brought to your kind notice:

(a). In Para (i) it is mentioned that TRAI has not provided any detailed justification for recommending "No regulatory interventions are required in respect of issues related with privacy and security of OTT services". It may be noted that detailed justification has been given with respect to each aspect covered in the aforesaid recommendations. For example, on issues related with privacy and security of OTT services, sub para (ii) para 2.4 Chapter 2 of the recommendations of TRAI on 'Regulatory Framework for OTT communication services' dated 14.09.2020 may please be referred.

(b). In para (ii), NDCP para 2.2 is referred to and mentioned that 'a policy framework for 'Over the Top' services shall be developed'. Whereas para 2.2 of NDCP states that "Promoting innovation in the creation of Communication Services and network infrastructure by developing a policy framework for 'Over

the Top' services", which is wider in scope and not limited to the OTT services as referred above in DoT letter.

(c). In para (iv), it is mentioned that recommendations of TRAI on OTT dated 14.09.2020, are at variance to TRAI's earlier recommendations on Privacy, Security and Ownership of the Data in the Telecom Sector dated 16.07.2018. Here it is clarified that aforesaid recommendations on OTT issued in 2020 are not at variance to TRAI recommendations on Privacy, Security and Ownership of the Data in the Telecom Sector dated 16.07.2018. The para referred i.e., "since these entities are not governed by the license conditions, applicable for Telecom Service Providers, the need for regulation of these entities of the digital ecosystem to ensure protection of consumers privacy and data security is urgent and inescapable", is para 2.35 Chapter 2 of the TRAI recommendations, which is not part of the recommendations. Rather it is mentioned in the internal discussions on analysis in the chapters. Further, the above para does not mention OTT services explicitly.

3. Considering the vast growth of OTT Services using Telecom Resources and new facts such as "Selective banning of OTT Services" referred in the aforesaid communication of DoT, the Authority is of the view that a fresh consultation process may be initiated to frame suitable regulatory framework for OTT. Accordingly, the Authority has taken necessary initiatives to start the consultation process to get a comprehensive input from various stakeholders for framing required recommendations on OTT Services."

C. The Present Consultation Paper

1.10 By way of issuing this consultation paper, the Authority is initiating a fresh consultation process for soliciting comments from stakeholders on 'Regulatory Mechanism for Over-The-Top (OTT) Communication Services, and Selective Banning of OTT Services'. For drafting this Consultation Paper, various documents, studies and reports available in the public domain, and published by government agencies/ departments, international bodies, telecom regulators in other countries, research agencies/ institutions, academic institutions,

operators, etc. were referred to. Excerpts from certain documents, which have domain relevance, have been included in this Consultation Paper, and wherever necessary, the web-links have been given as reference.

- 1.11 The Consultation Paper is divided into five chapters. This Chapter deals with the introduction and background. Chapter II examines the issues related to regulatory mechanism for Over-The-Top (OTT) communication services. Chapter III examines the issues related to selective banning of OTT services. The Chapter IV provides an overview of international practices on the subject. Chapter V summarizes the issues for consultation.

CHAPTER II
EXAMINATION OF THE ISSUES RELATED TO
REGULATORY MECHANISM FOR OTT COMMUNICATION SERVICES

A. Telecommunication services

- 2.1 As per the Telecommunications Regulation Handbook¹¹ issued by the World Bank and ITU, *"governments in most countries continue to see telecommunication as an essential public service. Even after telecommunication networks are no longer run by them, governments normally retain a regulatory role to ensure that telecommunication services are supplied in a manner consistent with national perception of the public interest"*.
- 2.2 The Annex on Telecommunications¹² of 'General Agreement on Trade of Services' (GATS), a treaty of World Trade Organization (WTO), defines the term 'telecommunication' as *"the transmission and reception of signals by any electromagnetic means"*.
- 2.3 In India, the Indian Telegraph Act, 1885, the Indian Wireless Telegraphy Act, 1933, and the Telecom Regulatory Authority of India Act, 1997, together provide a regulatory framework for telecommunication services. The Section 1(k) of the Telecom Regulatory Authority of India Act, 1997 defines telecommunication service as below:
"telecommunication service" means service of any description (including electronic mail, voice mail, data services, audio tex services, video tex services, radio paging and cellular mobile telephone services) which is made available to users by means of any transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature, by wire, radio, visual or other electro-magnetic means but shall not include broadcasting services.

¹¹ Source: https://www.itu.int/ITU-D/treg/Documentation/Infodev_handbook/1_overview.pdf

¹²Source: https://www.wto.org/english/tratop_e/serv_e/12-tel_e.htm

2.4 As per the Section 4 of Indian Telegraph Act, 1885, "[w]ithin India, the Central Government shall have the exclusive privilege of establishing, maintaining and working telegraphs: Provided that the Central Government may grant a license, on such conditions and in consideration of such payments as it thinks fit, to any person to establish, maintain or work a telegraph within any part of India:..."

2.5 Section 3 of the Indian Telegraph Act, 1885 defines the terms 'telegraph' and 'message' as below:

"telegraph" means any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, Radio waves or Hertzian waves, galvanic, electric or magnetic means;

"message" means any communication sent by telegraph, or given to a telegraph officer to be sent by telegraph or to be delivered;

2.6 At present, the Government of India, through the Department of Telecommunications (DoT), follows a regime of Unified License, under which, it grants authorizations¹³ to eligible entities to provide telecommunication services. A relevant extract of the Unified License Agreement is given below:

"WHEREAS by virtue of the provisions of Section 4 of the Indian Telegraph Act, 1885, the Licensor enjoys exclusive privilege to grant License for telecom services and the Licensee has requested the Licensor for grant of Unified License Whereupon and in pursuance to the said request, the Licensor has agreed to grant Unified License ...".

¹³ There are nine service authorizations under Unified License viz. (a) Access Service, (b) Internet Service, (c) National Long Distance (NLD) Service, (d) International Long Distance (ILD) Service, (e) Global Mobile Personal Communication by Satellite (GMPCS) Service, (f) Public Mobile Radio Trunking Service (PMRTS), (g) Very Small Aperture Terminal (VSAT) Closed User Group (CUG) Service, (h) Audio Conferencing/ Audiotex /Voicemail Service, (i) Machine to Machine (M2M) Service.

- 2.7 The Unified License Agreement defines the term 'service' as "*collection, carriage, transmission and delivery of messages over Licensee's network in Service Area as per authorization under this License.*"
- 2.8 Apart from granting authorizations under Unified License, the Government also grants a few stand-alone licenses and authorizations for providing telecommunication services e.g., Captive Mobile Radio Trunking Service (CMRTS) license, Authorization to provide In Flight and Maritime Connectivity (IFMC) service, etc.

B. Evolution of online services and OTTs

- 2.9 In the early part of the development of the telecommunication services sector, the main product was voice. This is changing fast. With today's Internet Protocol (IP) networks, data is increasingly replacing voice as the main product. The changes in network technology have supported the creation of an ecosystem of online applications including over-the-top (OTT) services that introduce completely new use cases including the Internet of Things (IoT), connected cars, smart education, smart health, smart agriculture, etc.
- 2.10 In some use cases such as messaging, consumer preferences have switched from traditional telecommunication services to OTTs. With OTTs used increasingly for messaging and to some extent for voice communication, globally, the general trend is a transition from voice and SMS towards data as a primary source of revenue for telecom service providers. In India, composition of the revenue basket of wireless access service providers has undergone a sea-change in the period from the year 2013 to 2022. The following table presents a comparison of the composition of average revenue per user (ARPU) per month from wireless service in the Quarter Ending (QE) December 2022 vis-à-vis the ARPU per month from GSM¹⁴ service in QE June 2013.

¹⁴ GSM is an acronym for Global System for Mobile Communication. In terms of subscriber base, GSM service constituted more than 90% of wireless service segment in the QE June 2013.

S. No.	Item	Quarter Ending June 2013		Quarter Ending December 2022		
		Revenue (excluding service tax) per subscriber per month (in Rs.)	Percent share of total revenue from subscribers	Revenue (excluding GST) per subscriber per month (in Rs.)	Percent share of total revenue from subscribers	
1.1	Usage from Home Service Area	Rental revenue	19.54	15.79%	0.81	0.50%
1.2		Revenue from calls	72.53	58.60%	14.79	10.10%
1.3		Revenue from SMS	3.99	3.22%	0.23	0.20%
1.4		Revenue from data usage	10.02	8.10%	125.05	85.10%
1.5		Revenue from other VAS ¹⁵	7.33	5.92%	1.44	1.00%
1.6		Other revenue	2.08	1.67%	3.33	2.30%
2	Usage outside Home Service Area	Revenue from out- roamers	8.28	6.69%	1.31	0.90%
3	Total revenue from subscribers		123.77	100%	146.96	100%
4	Net inter-operator settlement charges receivable		-12.32		-5.82	
5	Net Revenue (ARPU) per month		111.45		141.14	

Table 2.1: Composition of ARPU per Month - Wireless Service¹⁶

¹⁵ VAS is an acronym for Value Added Service.

¹⁶ The figures for the Quarter Ending June 2013 correspond to GSM service, while the figures for Quarter Ending December 2022 correspond to entire wireless service segment. Source: TRAI's reports titled 'The Indian Telecom Services Performance Indicators' for April-June 2013 and October-December 2022, accessible at <https://traigov.in/release-publication/reports/performance-indicators-reports>

2.11 As may be seen from the above table, the contribution of data usage in the revenue from mobile subscribers has grown to more than 10 times from 8.10% in the quarter ending (QE) June 2013 to 85.1% in the QE December 2022.

2.12 While on one hand, with the passage of time, Internet data usage has become the most prominent revenue driver in telecommunication services sector in India, the number of Internet data users have also grown manifold in the country. The Internet subscriber base in India grew to more than 4 times from 198.39 million in QE June 2013 to 865.90 million¹⁷ in QE December 2022¹⁸. The following figure depicts the growth in the number of Internet subscribers in the country from 2005 to 2022.

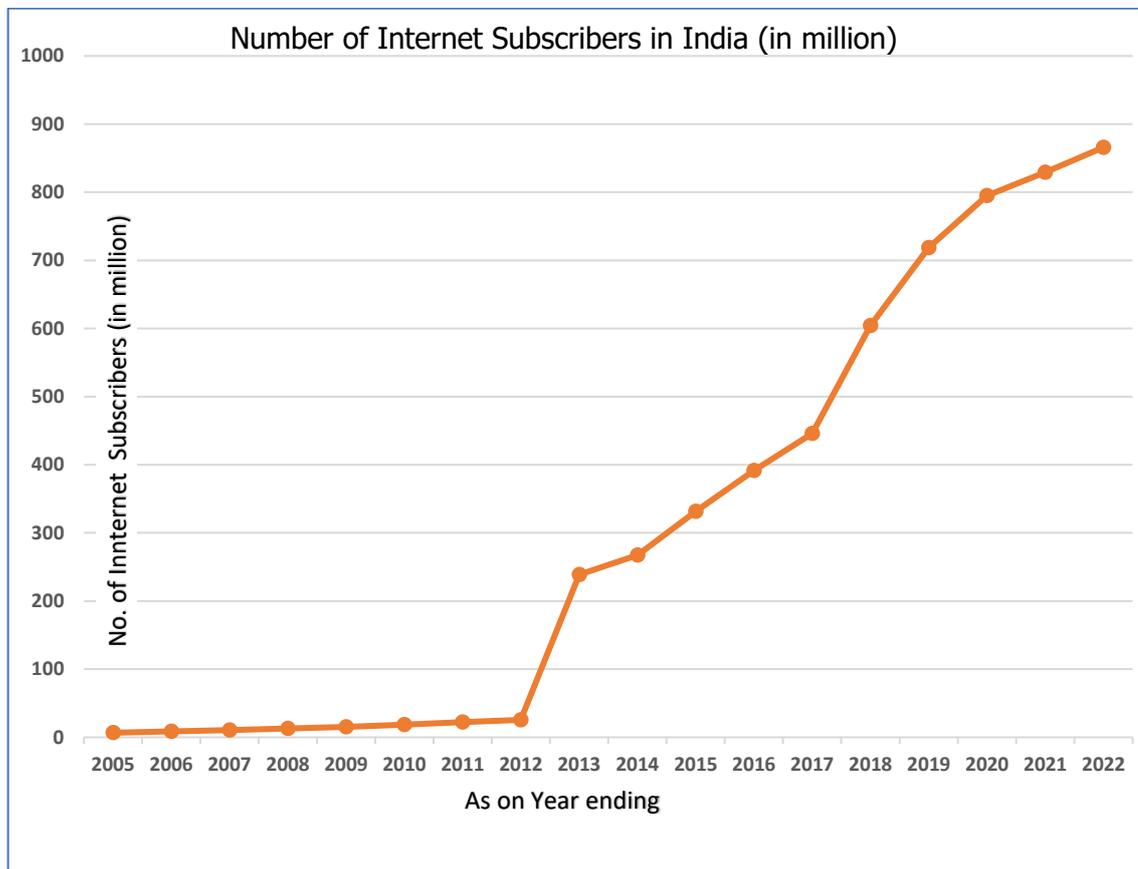


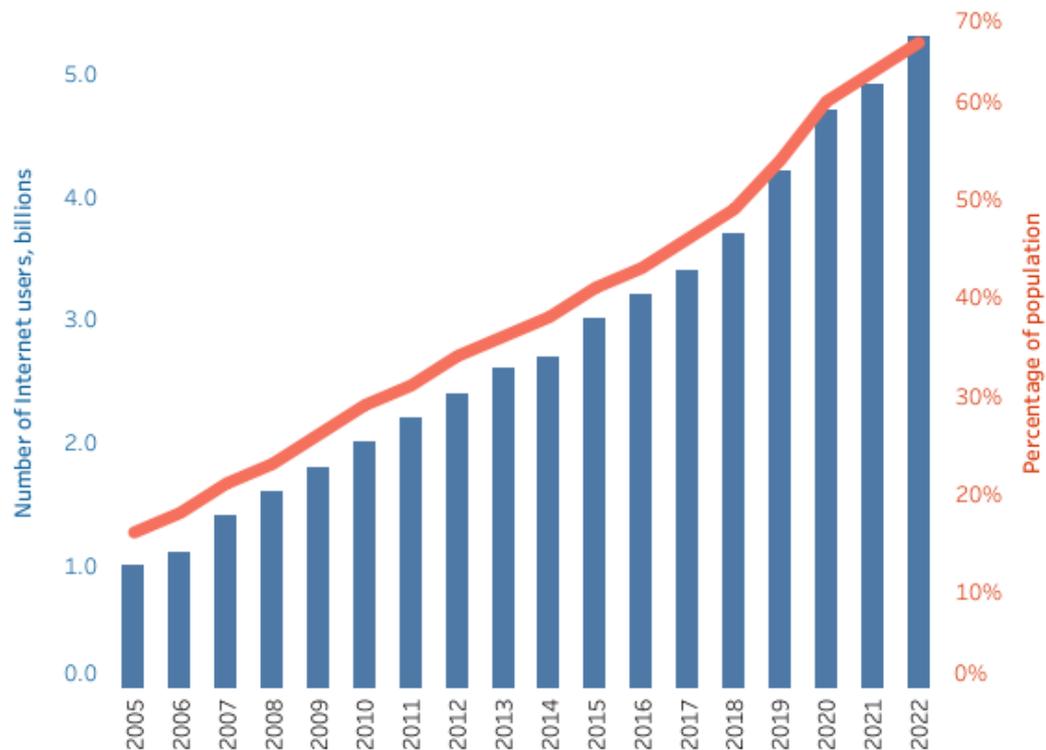
Figure 2.1: Statistics on Internet Subscribers in India

¹⁷ The wireless Internet subscriber base and wireline Internet subscriber base stood at 833.49 million and 32.41 million respectively as on 31.12.2022.

¹⁸ Source: TRAI's reports titled 'The Indian Telecom Services Performance Indicators' for April-June 2013 and October-December 2022, accessible at <https://tra.gov.in/release-publication/reports/performance-indicators-reports>

2.13 Similar growth trends in Internet subscriber base have been observed globally. According to ITU data¹⁹, worldwide an estimated 5.3 billion people used the Internet in 2022. The global Internet penetration rate increased from 16% in 2005 to 66% in 2022. The following figure depicts the global statistics on Internet users from 2005 to 2022.

Individuals using the Internet



Source: ITU

Figure 2.2: Global statistics on Internet users²⁰

2.14 With a view to capture the services that make up the internet ecosystem, the Global System for Mobile communications Association (GSMA) has adapted a framework named 'The Internet Value Chain'. The said report identified five main segments of internet value chain as below:

- (a) Content Rights,
- (b) **Online Services,**
- (c) Enabling Technology & Services,

¹⁹ Source: <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

²⁰ ibid

- (d) Internet Access Connectivity, and
- (e) User Interface.

2.15 The following figure depicts the internet value chain, propounded by the GSMA in its report titled 'The Internet Value Chain 2022':

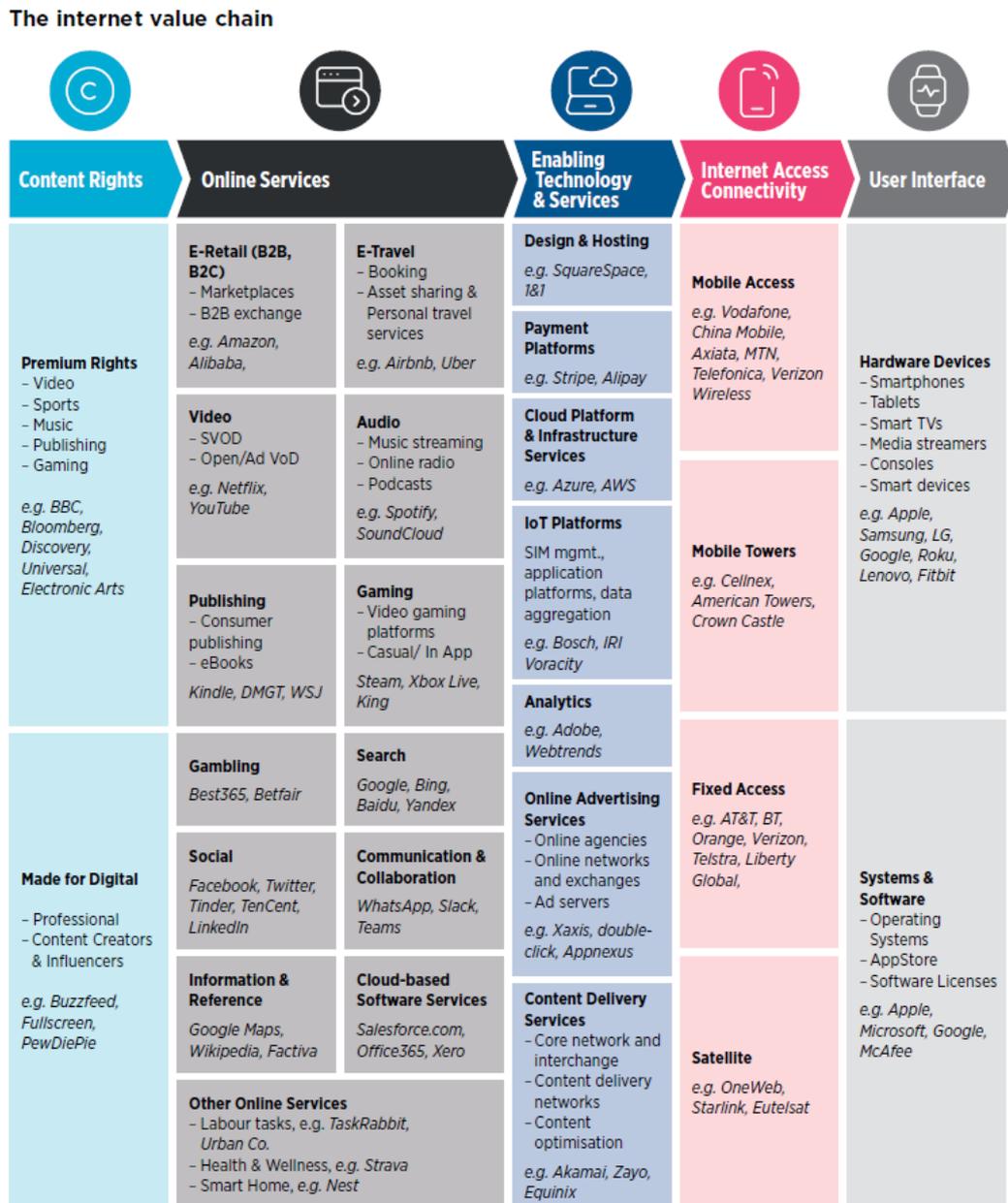


Figure 2.3: Internet Value Chain (GSMA, 2022)²¹

²¹ Source: <https://www.gsma.com/publicpolicy/resources/internet-value-chain>

2.16 Using the above framework, GSMA has quantified the overall size of the internet value chain based on the 2020 revenues of each of the sub-segments. Based on this approach, GSMA has estimated the total revenue of the internet value chain in 2020 as USD 6.7 trillion globally. As per GSMA, 'Online Services' segment generated over half of this revenue. The following figure depicts the contribution of each segment in the internet value chain in 2020.

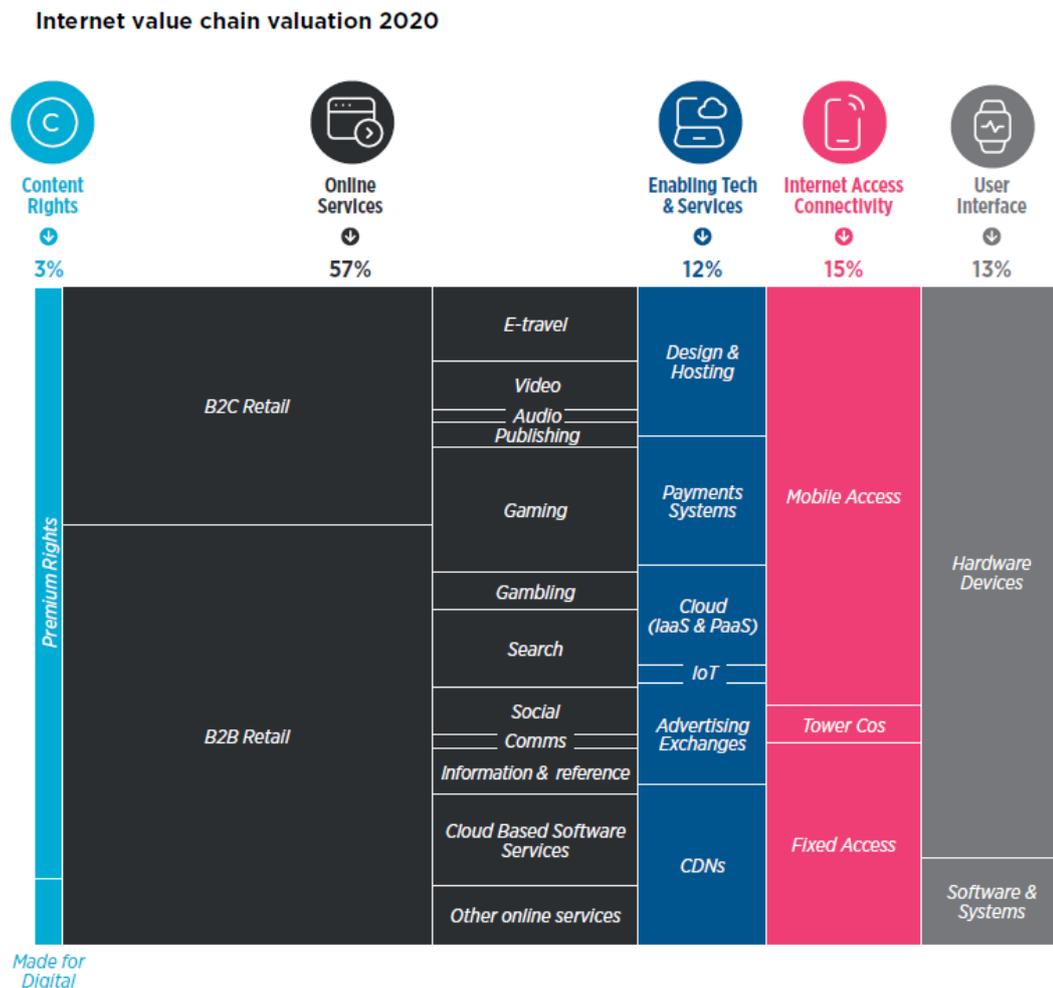


Figure 2.4: Internet Value Chain Valuation²²

2.17 As can be seen from the Internet Value Chain propounded by GSMA, 'Online Services' constitute a variety of services. An early attempt to classify the online services enabled by internet was made by Detecon International GmbH in its

²² Source: <https://www.gsma.com/publicpolicy/resources/internet-value-chain>

study paper of 2013 on 'The rise of OTT players-what is the appropriate regulatory response?'²³ authored by Shirley Baldry, Dr. Markus Steingröver, and Markus A. Hesse. In the said paper, Detecon segmented online services based on a broad set of use cases as below:

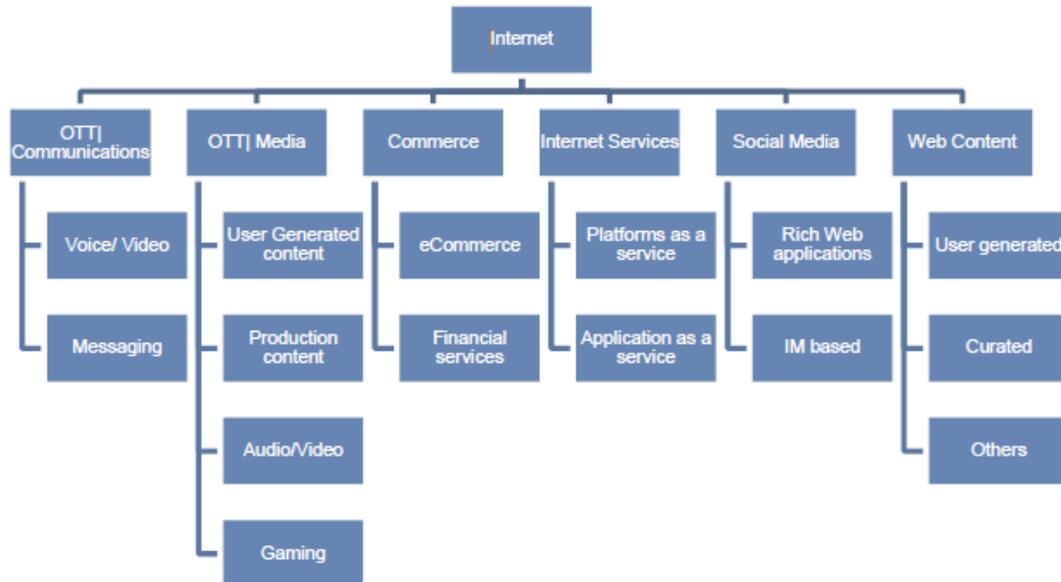


Figure 2.5: Classification of online services²⁴

2.18 ITU-T in its technical report²⁵ on 'Economic Impact of OTTs' (2017) took note of the above classification of online services as below:

"A recent study by Baldry, Steingröver, and Hessler (2013) provides a categorisation of online services. It seems clear that there is a great variety of online services. It is instructive to note that only the first two columns of Figure ... ("OTT communications" and "OTT media") represent OTT services in the Baldry, Steingröver, and Hessler taxonomy – the rest are online services, but not necessarily OTT services. "

2.19 As mentioned above, worldwide an estimated 5.3 billion people used the Internet in 2022. Catering to this large and growing market of internet users

²³ Source: https://www.afraiti.org/wp-content/uploads/2017/04/Paper_OTT_Player.pdf

²⁴ ibid

²⁵ Source: https://www.itu.int/dms_pub/itu-d/oth/07/23/D07230000030001PDFE.pdf

are OTT app developers, virtually unfettered by barriers to market entry. Launching a new mobile app requires minimal staff, capital investment and infrastructure. With the rise of cloud computing, mobile app companies no longer need to build expensive and complex data centers; they can rent computing power and start and grow their businesses. New entrants can easily distribute their mobile apps to millions of people through app stores that provide instant access to a global audience. Given these market conditions, OTT apps have flourished.²⁶

2.20 The OTT landscape is remarkably dynamic and competitive, as users increasingly spread their time between more and more applications. The decreasing cost of high-speed Internet connectivity²⁷ and the increasing processing power and storage space on personal devices allow people to move easily between different apps, add new ones or use several at the same time. There is considerable overlap between the user bases of competing applications, and OTT technologies impose virtually no constraints on end users from using many similar applications concurrently, a process known as 'multihoming'. In Germany, for instance, a May 2020 report by the Bundesnetzagentur (Federal Network Agency) found that 65% of survey respondents practise multihoming for communication OTT applications.²⁸

C. Benefits of OTT services

2.21 OTT services have transformed the economies of both developed and developing countries; moreover, this effect has clearly trickled down to small businesses and to individuals. Historically, these benefits have tended to be concentrated in developed countries; however, as the process of digitalization

²⁶ Source: Output Report on ITU-D Question 3/1 'Emerging technologies, including cloud computing, m-services and OTTs: Challenges and opportunities, economic and policy impact for developing countries' accessible at <https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/Publications.aspx>

²⁷ In India, the average revenue realization per GB of wireless data usage in the year 2014 was Rs. 268.97 per GB. (Source: https://traf.gov.in/sites/default/files/Wireless_Data_Service_Report_21082019.pdf). It declined to Rs. 10.10 per GB during the quarter ending December 2022. (Source: <https://traf.gov.in/release-publication/reports/performance-indicators-reports>)

²⁸ Source: <https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/Publications.aspx>

accelerates, and as more and more people worldwide are connected to the Internet, these benefits accrue to developed and developing countries alike. This tendency is closely linked to the growth in the availability and affordability of mobile broadband (and smart phones), which has deepened network coverage and opened it up to the masses.²⁹

- 2.22 ITU-D in its report of 2021³⁰ mentions that the COVID-19 "*pandemic has highlighted that for most people the Internet is no longer just a convenience, but a necessity. People with reliable Internet access have been able to use OTTs to more easily access and share critical health information, maintain contact with friends and family, work remotely, and otherwise mitigate the adverse impact of social distancing, quarantines and similar measures.*"
- 2.23 ITU-D in its report of 2021³¹ further mentions that "*by creating value for consumers, OTTs stimulate demand for broadband networks and services that, in turn, incentivize network operators to deploy and expand infrastructure as consumers require increasing bandwidth. In other words, the availability of OTTs creates a virtuous cycle that increases the value of broadband network services and thereby drives further take-up and adoption of higher-value data plans. ... OTT companies and telecommunication service providers engender benefits for each other in a symbiotic, complementary and mutually reinforcing manner. Richer OTT applications drive demand and willingness to pay for enhanced network access, whilst improved access coverage and quality enable greater use of messaging and other applications. OTT applications drive the demand for Internet connectivity services, thus increasing traffic and, consequently, the revenue of telecommunication service providers.*"

²⁹ Source: https://www.itu.int/dms_pub/itu-t/opb/tut/T-TUT-ECOPO-2017-PDF-E.pdf

³⁰ Source: <https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/Publications.aspx>

³¹ *ibid*

2.24 In its report on OTTs (2023), Esya Center³² reinforces the above point. As per this report, there is a virtuous cycle of OTT adoption and growth of telecom service provider (TSP) networks as depicted in the following figure.

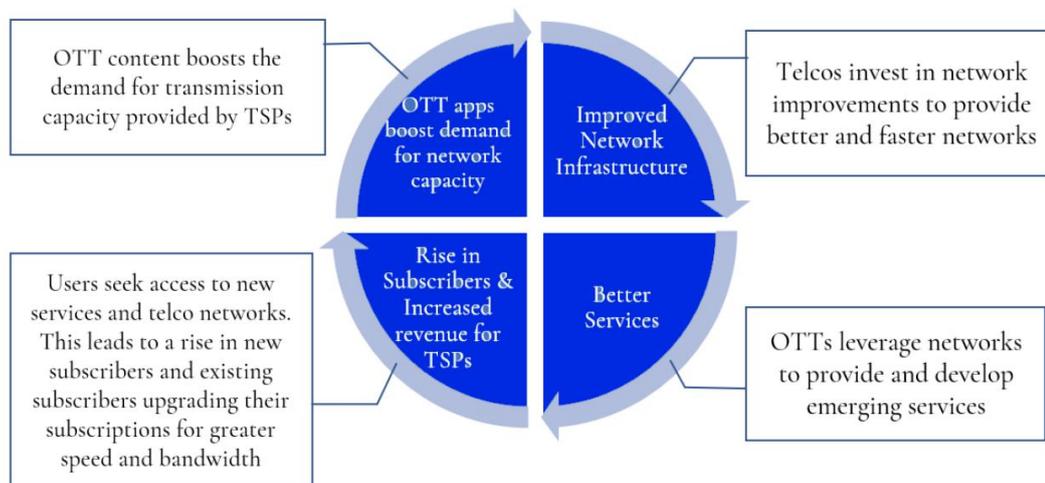


Figure 2.6: The virtuous cycle of OTT adoption and growth of TSP networks ³³

2.25 ITU-D in its report of 2021³⁴ further mentions that *"because OTT companies and network operators have both enjoyed the benefits of consumer hunger for broadband access, both sectors have invested heavily in the infrastructure to support it. ...*

While most sub-scale OTTs rely on MNO infrastructure for last-mile delivery to customers, hyperscale OTT service providers such as Facebook and Google are increasingly investing in infrastructure and connectivity projects around the world. ...

Given the high data use of their customers, OTT providers have a growing vested interest in supporting the availability of high-speed broadband for users around the globe. As such, they are increasingly investing in network infrastructure."

³² The Esya Centre is a New Delhi based technology policy think tank. Source: <https://www.esyacentre.org/documents/2023/1/31/regulation-of-ott-communications-services-justified-concern-or-exaggerated-fear>

³³Source: <https://www.esyacentre.org/documents/2023/1/31/regulation-of-ott-communications-services-justified-concern-or-exaggerated-fear>

³⁴ ³⁴ Source: <https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/Publications.aspx>

D. OTT Services

2.26 If policy or regulatory measures were to be enacted for OTT services, it would presumably be necessary to establish a regulatory definition for OTT services. Keeping this in mind, this section begins with the definition of OTT services.

(1) Definition of OTT Services

2.27 The term 'OTT' was coined more than a decade ago. Since its inception, there have been numerous attempts worldwide to define the term. This section presents the definitions of the term OTT, as declared by various jurisdictions and forums, in a chronological order.

2.28 In July 2013, the Organisation for Economic Co-operation and Development (OECD) Communications Outlook (2013) described OTT services as "*video, voice and other services provided over the Internet rather than solely over the provider's own managed network*"³⁵.

2.29 In March 2015, The Office of Communications (Ofcom), United Kingdom in its Mobile Call Termination Market Review 2015-18 defined OTT service³⁶ as "*a type of service provided "over the top" of an existing data network connection such as a fixed or wireless broadband connection.*"

2.30 In January 2016, Body of European Regulators for Electronic Communications (BEREC) in its 'Report on OTT Services'³⁷ defined OTT service as "*content, a service or an application that is provided to the end user over the public Internet*".

³⁵ Source: https://www.potraz.gov.zw/wp-content/uploads/2016/01/Consultation_OTT.pdf

³⁶ Source: https://www.ofcom.org.uk/_data/assets/pdf_file/0025/74257/annex_15_glossary.pdf

³⁷ Source: <https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-ott-services>

- 2.31 In May 2019, ITU-T in its Recommendation D.262 (05/2019) defined OTT as *"an application accessed and delivered over the public Internet that may be a direct technical/ functional substitute for traditional international telecommunication services"*. The Recommendation noted, however, that *"[t]he definition of OTT is a matter of national sovereignty and may vary among Member States"*.
- 2.32 In the year 2020, Commonwealth Telecommunication Organization (CTO) in its report on 'Over The Top (OTT) Applications & Internet Value Chain'³⁸ defined OTT as *below*:
- "OTTs can be content, a service or an application that is provided to the end user over the public Internet."*

(2) Classification of OTT Services

- 2.33 Many jurisdictions have attempted to group OTT services in various classes. This section presents the classification of OTT services, as provided by various jurisdictions and forums, in chronological order.
- 2.34 The DoT Committee Report on Net Neutrality (May 2015)³⁹ classified OTT services into two groups as below:
- "(i) OTT communications services – These services (e.g. VoIP) provide real-time person to person telecommunication services. These services are similar to the telecommunication services provided by the licensed telecom service providers (TSPs) but are provided to the users as applications carried over the internet using the network infrastructure of TSPs. Essentially OTT communications services compete with the services provided by TSPs riding on the infrastructure created by TSPs.*
- (ii) OTT application services – All other OTT services such as media services (broadcasting, gaming), trade and commerce services (e-commerce, radio*

³⁸ Source: <https://cto.int/wp-content/uploads/2020/05/CTO-OTT-REPORT-2020.pdf>

³⁹ Source: https://dot.gov.in/sites/default/files/Net_Neutrality_Committee_report%20%281%29_0.pdf

*taxi, financial services), cloud services (data hosting & data management platforms/applications), social media (Internet based intermediary applications like Facebook, YouTube) offer services to end-users using the network infrastructure created by TSPs but do not directly compete with the service offerings for which the TSPs have obtained a licence under the applicable law i.e. the Indian Telegraph Act, 1885.*⁴⁰

2.35 BEREC in its Report on OTT Services (January 2016)⁴¹ considered the following taxonomy for OTT services the most useful:

- "(a) OTT-0: an OTT service that qualifies as an electronic communication services (ECS)⁴²;*
- (b) OTT-1: an OTT service that is not an ECS but potentially competes with an ECS;*
- (c) OTT-2: other OTT services"*

2.36 Commonwealth Telecommunication Organization (CTO) in its report on 'Over The Top (OTT) Applications & Internet Value Chain' (2020) mentioned as below:

*"OTTs can be distinguished between those that are electronic communication services (OTT-ECS), those that potentially compete with electronic communication services (OTT-Com), those that potentially compete with broadcasting services (OTT-Content) and those that neither compete with electronic communication services nor broadcasting services (OTT-Other)."*⁴³

⁴⁰ https://dot.gov.in/sites/default/files/Net_Neutrality_Committee_report%20%281%29_0.pdf

⁴¹ Source: <https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-ott-services>

⁴²As defined in the European electronic communications code (Directive (EU) 2018/1972), electronic communications services are normally provided for payment via electronic communications networks. This includes – except for services providing, or exercising editorial control over, content transmitted using such networks and services – the following types of services:

(i) internet access service – a publicly available electronic communications service that provides access to the internet, and thereby connectivity to virtually all end points of the internet, irrespective of the network technology and terminal equipment used;

(ii) interpersonal communications service;

(iii) services used wholly or mainly for sending signals, such as transmission services used for the provision of machine-to-machine services and for broadcasting

Source: <https://eur-lex.europa.eu/EN/legal-content/glossary/electronic-communications-services.html>

⁴³ <https://cto.int/wp-content/uploads/2020/05/CTO-OTT-REPORT-2020.pdf>

E. OTT Communication Services

- 2.37 As outlined in Chapter I of this Consultation Paper, the Authority, in the year 2018, issued 'Consultation Paper on Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 12.11.2018 and raised various issues for comments and counter-comments from stakeholders. In the said consultation paper, the Authority observed that *"OTT services could theoretically be considered in the broadest sense to mean all online services (for instance, e-commerce platforms or applications offering aggregating services). However, in the background of DoT's reference letter dated March 3, 2016 and the issues already covered in the consultations that have preceded this one, the Authority has chosen in this consultation to focus only on the regulatory issues and economic concerns pertaining to such OTT services as can be regarded the same or like the services provided by the telecom service providers. Unless otherwise implied or explicitly stated in the context, the term OTT services used in this consultation paper is restricted within this scope."* The stakeholder consultation process, initiated through the afore-mentioned consultation paper dated 12.11.2018, culminated in the Authority's recommendations on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.02.2020 to DoT. It is noteworthy that DoT, through its back reference dated 07.09.2022, has requested TRAI to *"reconsider its recommendations on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.02.2020 and suggest a suitable regulatory mechanism for OTTs, including issues relating to "selective banning of OTT services" as part of its recommendations"*.
- 2.38 Keeping the above in view, the present consultation is focused on the following:
- (a) Identification of a suitable regulatory mechanism for OTT communication services, and
 - (b) Examination of the issues related to selective banning of OTT communication services.

2.39 Taking into account - (a) the definition of OTT provided by ITU (May 2019), and (b) the classification of OTT services provided in the DoT Committee Report on Net Neutrality (May 2015), as mentioned in the para 2.31 and 2.34 above, an OTT communication service may be characterized by the following twin features:

- (i) It is accessed and delivered through an application (App) over the public Internet, using the network infrastructure of telecom service providers; and
- (ii) It is a direct technical/ functional substitute for traditional telecommunication services provided by the telecom service providers.

2.40 Prior to examining the issues related to OTT communication services, it appears necessary to ascertain the universe⁴⁴ of OTT communication services, and to identify the classes⁴⁵ (or categories), if any, of OTT communication services. Accordingly, the Authority solicits comments of stakeholders on the following set of questions:

Issues for consultation:

Q1: What should be the definition of over-the-top (OTT) services? Kindly provide a detailed response with justification.

Q2: 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.

⁴⁴ In mathematics, and particularly in set theory, category theory, type theory, and the foundations of mathematics, a universe is a collection that contains all the entities one wishes to consider in a given situation. Source: [https://en.wikipedia.org/wiki/Universe_\(mathematics\)#:~:text=In%20set%20theory%2C%20universes%20are,or%20Morse%E2%80%93Kelley%20set%20theory](https://en.wikipedia.org/wiki/Universe_(mathematics)#:~:text=In%20set%20theory%2C%20universes%20are,or%20Morse%E2%80%93Kelley%20set%20theory)

⁴⁵ In set theory, a class is a collection of sets that can be unambiguously defined by a property that all its members share. Source: ibid

Q3: 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.

Q4: 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.

F. Juxtaposition of OTT Communication Services and Traditional Telecommunication Services

- 2.41 TRAI in the Consultation Paper on Regulatory Framework for Over-the-top (OTT) Services⁴⁶ dated 27.03.2015 described OTT provider as *"a service provider offering ICT (Information Communication Technology) services, but neither operates a network nor leases network capacity from a network operator. Instead, OTT providers rely on the global internet ...to reach the user, hence going "over-the-top" of a telecom service provider's (TSP's) network"*.
- 2.42 DoT Committee Report on Net Neutrality (May 2015) provided an outline of the *modus-operandi* of OTT applications. It said that *"OTT applications are enabled by layering of communications networks through Internet Protocols (IP) that permit the applications layer to function independent of the media layers. IP has facilitated the separation of "carriage" from "content", which has allowed content provided by OTT service providers to be carried over the top of communication networks to directly serve end-users at the edges of the network. In OTT transactions, the network operators link the OTT service*

⁴⁶ Source: <https://traigov.in/sites/default/files/OTT-CP-27032015.pdf>

provider and end-users without being responsible for the content carried over it.”⁴⁷

- 2.43 Traditionally, an entity desirous of offering telecommunication services such as voice, video, and messaging to its customers in the country would first obtain a suitable service license under Section 4 of the Indian Telegraph Act, 1885 from the Government; and then establish a telecommunication network to provide voice, video, and messaging services to its customers. However, the delayering of telecommunications networks through Internet Protocol⁴⁸ has facilitated the OTT communication service providers to directly offer voice, video, and messaging services to end users over the top of telecommunication networks through OTT applications.
- 2.44 Apart from voice, video, and messaging services, OTT applications also offer many features that go well beyond traditional telecommunication services. For example, Instant messaging services through OTT applications provide richer services than traditional short messaging service (SMS). OTT messaging includes ‘one to many’ broadcast messages, in addition to private or direct messaging. The OTT messaging apps possess a wide range of capabilities such as voice and video messages as in Whatsapp, Facetime, Skype, etc., messages using geo-location information as in Ola, Uber, Zomato, Swiggy, etc., or photo sharing, as in Instagram, Snapchat, etc. In short, rather than offering simple substitutions for voice, video and SMS, OTT applications offer a range of features over and above the traditional telecommunication services.
- 2.45 ITU-D in its report of 2021⁴⁹ states that “*communications-based OTTs typically differ in a number of ways from traditional telecommunication services. For example, OTTs generally do not provide connection to a public network and*

⁴⁷ Source: https://dot.gov.in/sites/default/files/Net_Neutrality_Committee_report%20%281%29_0.pdf

⁴⁸ Internet Protocol (IP) is a ‘network layer’ communications protocol for delivery of packets from the source host to the destination host solely based on the IP addresses.

⁴⁹ Source: <https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/Publications.aspx>

instead create a type of closed-user group within the application. Thus, OTTs do not require scarce numbering resources, nor do they require interconnection agreements with traditional operators."

G. Need for developing a policy and regulatory framework for OTT communication services

2.46 In the year 2018, the Government announced National Digital Communication Policy (NDCP) 2018. The NDCP 2018 *"seeks to unlock the transformative power of communications networks - to achieve the goal of digital empowerment and improved well being of the people of India; and towards this end, attempts to outline a set of goals, initiatives, strategies and intended policy outcomes"*.⁵⁰

2.47 The NDCP 2018 has three missions namely (a) Connect India, (b) Propel India, and (c) Secure India. Under the Propel India Mission, the NDCP 2018 states that *"the recent past has witnessed an unprecedented transformation in the Digital Communications Infrastructure and Services sector with the emergence of new technologies, services, business models and players. There is hence an imperative need to review the existing licensing, regulatory and resource allocation frameworks to incentivize investments and innovation to optimise new technology deployments and harness their benefits"*. Towards this, the NDCP-2018 envisages to ensure *"a holistic and harmonized approach for harnessing Emerging Technologies"* by promoting *"innovation in the creation of Communication services and network infrastructure **by Developing a policy framework for 'Over The Top' services'**"* as a strategy to achieve the goals of the Propel India Mission.

2.48 In this background, through the back reference letter dated 07.09.2022, DoT has mentioned, *inter-alia*, as below:

⁵⁰ Source: <https://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf>

"ii. In view of the humongous growth of OTT services in the recent past and these services having reached a matured stage, there is a need to holistically look into the various aspects of these services including regulatory, economic, security, privacy, and safety aspects. This is also in keeping with para 2.2 of the National Digital Communications Policy -2018 which mentions the policy goal for "Ensuring a holistic and harmonized approach for harnessing Emerging Technologies". It has been mentioned therein that a policy framework for 'Over the Top' services will be developed."

2.49 Keeping the above in view, this section attempts to examine various aspects of OTT communication services considering the studies undertaken by ITU, and other developments on the subject around the world.

(1) ITU's Technical Report on Economic Impact of OTTs (2017), and the Indian context

2.50 In the year 2017, International Telecommunications Union (ITU) issued a Technical Report on Economic Impact of OTTs⁵¹ (hereinafter, referred to as "the ITU's Technical Report"). Chapter 3 of the ITU's Technical Report outlines the opportunities and impacts associated with OTT services. Chapter 4 outlines policy challenges with respect to OTT services.

2.51 The ITU's Technical Report in Chapter 3 mentions that "*concerns are widespread that OTTs may be impacting the revenues and profits of traditional network operators. This could in turn depress investments that are needed in fibre-based infrastructure, and in new mobile access technologies such as LTE. Different interpretations are possible as to the relevance and severity of this threat*". The ITU's Technical Report indicates that there "*seems to be little doubt that revenue is declining for a number of traditional services, especially for SMS. The cause is not proven, but the observed trends are suggestive of*

⁵¹ Source: https://www.itu.int/dms_pub/itu-t/opb/tut/T-TUT-ECOPO-2017-PDF-E.pdf

substitution effects. Substitution effects are arguably also important for international voice calls.”

- 2.52 In the Indian Context, in the period from the year 2013 to 2022, the number of outgoing SMS per subscriber per month declined by about 55% from 27 (for GSM service in the Quarter Ending June 2013) to 12.26 (for wireless service in the Quarter Ending December 2022)⁵². In the same period, the revenue from SMS per subscriber per month decreased by about 94% from Rs. 3.99 (for GSM service in the Quarter Ending June 2013) to Rs. 0.23 (for wireless service in the Quarter Ending December 2022)⁵³.
- 2.53 Further, in the period from the year 2013 to 2022, the number of outgoing international long distance (ILD) voice minutes of usage (MOU) per wireless subscriber per month declined by 83% from 0.3 (for GSM service in the Quarter Ending June 2013) to 0.05 (for wireless service in the Quarter Ending December 2022) in the country.
- 2.54 As per the Publication titled 'The State of the Network' (2022 Edition)⁵⁴ of Telegeography, at the global level, *"2015 marked a turning point in the international voice market - the first time since the Great Depression that international call traffic declined, even if only by one half percent. It's been a race downhill ever since, as the slump in voice traffic has turned into a rout. Carriers' traffic declined by 9% in 2017 and 4% in 2018 and a further 6% in 2019. The COVID-19 pandemic spurred a short term rally in international call volumes in early 2020, but things pretty much returned to the new normal. Traffic fell a further 7% in 2020, slightly faster than the two previous years. ... calculation suggests that cross-border OTT traffic overtook international carrier*

⁵² Source: TRAI's reports titled 'The Indian Telecom Services Performance Indicators' for April-June, 2013 and October-December, 2022, accessible at <https://traigov.in/release-publication/reports/performance-indicators-reports>

⁵³ *ibid*

⁵⁴ Source: <https://www2.telegeography.com/hubfs/LP-Assets/Ebooks/state-of-the-network-2022.pdf>

traffic in 2016, and would near 1.4 trillion minutes in 2021, dwarfing the 375 billion minutes of carrier traffic projected by TeleGeography.”

2.55 The ITU’s Technical Report further mentions that *“the loss in traditional voice and SMS revenues needs to be understood in the context of compensating increased revenues for (mobile) data services. ... The data consumption of a WhatsApp message does not generate sufficient network operator revenue to offset what an SMS would have generated, but when one factors in the increased number of messages, increased volume of content per message (and for voice, longer duration for voice calls), and all of the other data hungry applications, the effects of online and OTT services on revenues are complex overall...”*

2.56 In the eight years period from the year 2014 to 2022, the volume of monthly wireless data usage in India grew by about 156 times from 92.4 million GB⁵⁵ (December 2014) to 14.4 trillion GB (December 2022)⁵⁶. In the same period, the average revenue from data usage per wireless subscriber per month in the country increased by about 5.6 times from Rs. 22.19 (for GSM service in the Quarter Ending December 2014) to Rs. 125.05 (for wireless service in the Quarter Ending December 2022)⁵⁷. In this period, the wireless Internet subscriber base in India grew by about 3.35 times from 248.53 million (as on 31.12.2014) to 833.49 million (as on 31.12.2022)⁵⁸.

2.57 With respect to the growth in data usage far exceeding the growth in revenue from data usage, the ITU’s Technical report states as below:

“A few years ago, claims were widespread that Internet traffic growth was driving unbounded costs, that flat rate prices prevented network operators from charging to recover their costs, and that regulatory intervention was therefore

⁵⁵ GB is an acronym for Giga Byte.

⁵⁶ The information furnished by telecom service providers to TRAI

⁵⁷ Source: TRAI’s reports titled ‘The Indian Telecom Services Performance Indicators’ for October-December 2014 and October-December 2022, accessible at <https://tra.gov.in/release-publication/reports/performance-indicators-reports>

⁵⁸ *ibid*

required to address the claimed market failure. Concerns along these lines are visible both in developed and developing countries.

This is a persuasive narrative, but alternative interpretations are also possible. These alternative views generally are based on claims that growth in traffic does not necessarily equate to an equivalent growth in cost.

Factors in this alternative assessment include:

- Internet traffic growth is indeed healthy, but no longer seems to reflect explosive growth. The percentage growth in both fixed and mobile traffic volumes appears to decline year over year This trend is visible in multiple forecasts, and has been visible (for fixed broadband) since the nineties.*
- Relevant unit costs also decline year over year (an effect known as Moore's Law), and offset any increase in traffic volume, It has been claimed that this decline slightly exceeds the rate of increase in traffic for the fixed network at present. If so, this would suggest that fixed network prices are stable or declining because the corresponding costs are stable or declining.*
- Prices for both fixed and mobile broadband services do not appear to be "stuck" at any particular level, but rather appear to respond to normal forces of supply and demand.*

The decline in unit costs for key traffic-dependent items of equipment (for instance, large routers and long haul DWDM equipment used by network operators) appear to more than offset the increase in the amount of equipment required to carry fixed network traffic. For the mobile network, the combined effect of increased traffic-dependent equipment volumes and declining unit cost appears to be in line with the increase in the monthly price paid by consumers (ARPU). In neither case are there indications of market failure."

- 2.58 In the Indian context, in the period from the year 2012 to 2022, the monthly average revenue per user (ARPU) for wireless service grew by about 44% from

Rs. 98 (For GSM service in Quarter Ending December 2012) to Rs. 141.14 (for wireless service in Quarter Ending December 2022)⁵⁹.

2.59 In India, with the passage of time, the mobile network technology has advanced from 2G (GSM and CDMA), 3G (WCDMA etc.), 4G (LTE etc.) and now 5G. The GSMA in its paper titled 'The Benefits of Technology Neutral Spectrum Licences' (June 2019)⁶⁰ has provided an assessment of the improvement in spectral efficiency and data speed with the evolution of mobile network technology as below:

"For data, GSM has an average spectral efficiency of 0.16 bits per Hz. For HSPA (3G) this is 0.8 bits per Hz i.e. a 5-fold improvement. In other words, if an operator refarms one 2x5 MHz block of 900 MHz spectrum from GSM to 3G (HSPA) this would improve throughputs by a factor of 5. Furthermore, if an operator implements 2x2 MIMO in 3G, this increases the average spectral efficiency by 1.3 times to 1.04 bits per Hz. Thus an operator using the same amount of spectrum can deliver 6.5 times higher throughputs compared to GSM. However, MIMO in 3G is relatively rare whereas it is now common in 4G deployments. 4G (LTE) effective spectral efficiency depends on the 3GPP technology release and the age of handsets in the network. If an operator deploys, say, LTE release 10 in the 900 MHz band the spectral efficiency gains are even bigger compared to 3G. Without MIMO the spectral efficiency for 4G is 1.46 bits per Hertz (bits/ Hz) compared to 0.8 bits/Hz for 3G (HSPA). LTE radios deployed today in sub-1 GHz spectrum are invariably 2x2 MIMO hence the spectral efficiency for LTE in 900 MHz is 1.9 bits/Hz compared to just 0.16 bits/Hz for GSM. This means if an operator refarms 900 MHz from GSM to 4G, data throughput increases by a factor of 11.9."

⁵⁹ Source: TRAI's reports titled 'The Indian Telecom Services Performance Indicators' for October-December 2012 and October-December 2022, accessible at <https://traigov.in/release-publication/reports/performance-indicators-reports>

⁶⁰ Source: <https://www.gsma.com/spectrum/wp-content/uploads/2019/06/Benefits-of-Technology-Neutral-Spectrum-Licences.pdf>

2.60 The use of higher MIMO⁶¹ in 4G and 5G technologies results in an even greater increase in data throughput. GSMA, in the afore-mentioned paper, illustrates the average spectral efficiencies in various mobile network technologies as below:

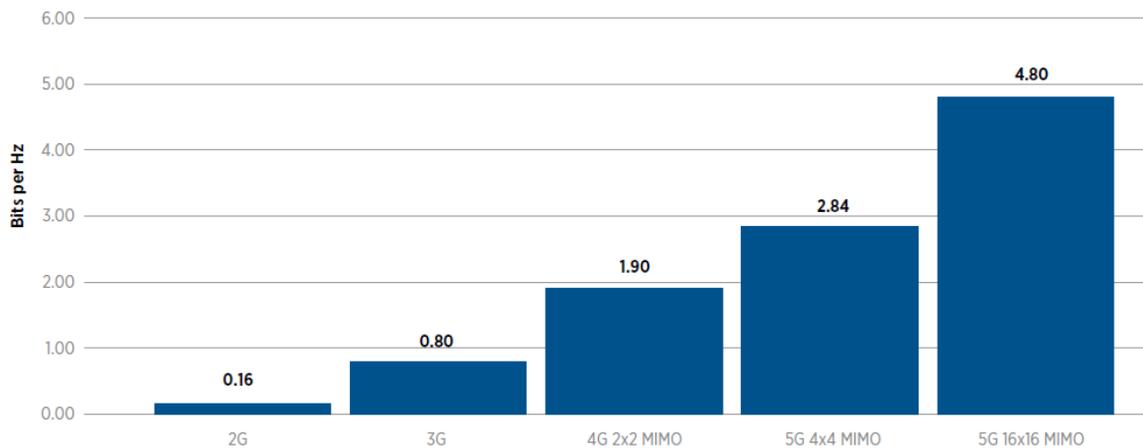


Figure 2.7: Average spectral efficiencies in various mobile network technologies⁶²

2.61 The above figure suggests that for the same quantum of access spectrum, the data throughput has grown manifold from 2G networks (which were prevalent till the year 2012) to 5G networks (which are being deployed now). From this description, it may be inferred that the cost of delivery of unit mobile data in access networks has declined significantly with the evolution of mobile network technology.

2.62 While substantial efficiencies have been obtained in access networks through the evolution of mobile network technology, the backbone networks, which are generally optical fiber based, have also witnessed a significant improvement in the efficiency in delivering data with the passage of time. As a result, the prices of international internet bandwidth (which is a factor input for both mobile and fixed-line broadband services) have declined substantially. As per the

⁶¹ MIMO (multiple-input, multiple-output) technique is used to increase the data throughput by using multiple transmitter antenna and multiple receiver antenna.

⁶² Source: <https://www.gsma.com/spectrum/wp-content/uploads/2019/06/Benefits-of-Technology-Neutral-Spectrum-Licences.pdf>

Publication titled 'The State of the Network' (2022 Edition)⁶³ of Telegeography, "across a range of markets, 10 GigE prices fell 18% compounded annually from Q2 2018 to Q2 2021. A comparable sample of 100 GigE port⁶⁴ prices fell 30% over the same period".

2.63 Further, in respect of the overall impact of OTT services on societal welfare, the ITU's Technical Report states, *inter-alia*, as below:

"Societal welfare is the sum of producer welfare and consumer welfare. Consumers presumably view OTT services as offering better price/ performance than the services for which they substitute (otherwise, they would not be purchased). The OTT service is either less expensive than an equivalent service, or else offers better value overall.

Most analyses of the economic impact of OTT services tend to be incomplete to the extent that

- they consider only costs to producers, ignoring benefits to consumers;*
- they often ignore real benefits that flow to producers of the services;*
- they may not be clear as to the assumptions that they are making;*
- they may not be clear as to the comparison they are making, and in particular as to the counterfactual scenario that they are assuming. Exactly what is compared is being compared to what?*

Online services tend to intensify competition, and thus to reduce the spread between cost and price (i.e. the profit margin). They reduce market inefficiencies caused by imperfectly informed consumers. The increase in market efficiency has two distinct effects on societal welfare.

- First, the reduced retail prices transfer societal welfare from producers to consumers. This transfer is, in a static economic analysis, neutral in principle to societal welfare, even though it is harmful to producers. What producers lose, consumers gain.*

⁶³ Source: <https://www2.telegeography.com/hubfs/LP-Assets/Ebooks/state-of-the-network-2022.pdf>

⁶⁴ The prices of 10 GigE and 100 GigE port refers to the prices paid by telecom service providers for leasing the Ethernet internet bandwidth of 10 Gbps and 100 Gbps respectively.

- *Second, the reduced retail prices lead to increased consumption due to the price elasticity of demand. More of the product or service is consumed. This effect (formally referred to as a reduction in deadweight loss) represents a real and unambiguous gain in societal efficiency, benefitting both suppliers and consumers.*

For OTT services, the relevant benefits to producers can be assumed to flow primarily from increased overall consumption of network services; and secondarily (but relatedly) from an increased number of subscribers to the network due to the enhanced desirability of the service. OTT services have presumably eroded profit margins for telecommunications market segments that previously had been highly profitable, namely SMS and international voice calls; nonetheless, data revenues are growing substantially, presumably due both to an increase in the number of subscribers and an increase in traffic volume per subscriber, both of which benefit from online services usage in general and OTT service usage in particular. Overall consumer willingness to pay (WTP) presumably also benefits from the use of online services.

In some countries, the net effect is an increase in network operator revenues rather than a decrease. Circumstances could however vary greatly from one country to the next.”

2.64 In the Indian context, in the ten-year period from the year 2012 to 2022, the quarterly Adjusted Gross Revenue (AGR) of access service segment grew by about 86% from Rs. 274.55 billion (in Quarter Ending December 2012) to Rs. 510.23 billion (in Quarter Ending December 2022).

2.65 The ITU’s Technical Report in Chapter 4 reflects on the issues of competitive neutrality (the level playing field) for OTT services. It states, *inter-alia*, as below:

“There are few who would disagree with the general proposition that similar services that are similarly situated, and that compete with one another, should be subject to obligations that are similar (to the extent that doing so is practical). Specifically, one could argue that it is important to maintain

competitive neutrality between OTT services and the underlying networks with which they compete. Doing so would serve to maintain competitive neutrality. Philosophically, one can argue that the choice between traditional versus OTT services should be made by the market, with as little interference as possible by regulatory authorities.

This seemingly straightforward principle is difficult to apply in practice. Are the new services really effective substitutes, are they imperfect substitutes, are they economic complements, or are they something else? Is the original rationale for the original regulatory obligation really relevant to the online service that competes with it? How practical and proportionate is it to impose the traditional obligation on a new service – does it impose unreasonably high costs? ...

The range of services to which any specific obligation should apply, must be considered in light of the goals of the obligation and the proportionality of that obligation being applied to any specific service or service type. This implies that the social benefits of the obligation and its scope need to be proportionate to the economic costs entailed for each regulated provider, and the static and dynamic competition effects of partial or universal application of the obligations. A preference for a level playing field can be part of the assessment of proportionality, but it is only one of the many elements. ...

The answers to these questions would appear to be crucial; however, the most appropriate answers might well vary from one service to the next, and also from one country to the next.”

- 2.66 In the Indian context, as already indicated, the telecom service providers (TSPs) need a telecommunication service license under Section 4 of Indian Telegraph Act, 1885 to offer telecommunication services to their consumers through telecommunication networks. On the other hand, OTT communication service providers offer voice call, and messaging and video call services similar to the services provided by TSPs, without any such license.

2.67 The telecom service providers in India are regulated by several laws, including the Indian Telegraph Act, 1885, the Wireless Telegraphy Act, 1933 and the Telecom Regulatory Authority of India Act, 1997. The terms and conditions of the Unified License Agreement entered by the telecom service providers with the Central Government are binding upon them. However, presently none of these obligations are applicable to OTT communication service providers. Some of the obligations under the Unified License Agreement⁶⁵, which the telecom service providers are required to adhere to are listed below:

- (i) Lawful Interception: The Licensee is required to ensure that the traffic passing through its network can be monitored.
- (ii) Privacy and security: The Licensees are required to ensure the protection of privacy of communication and to ensure that unauthorized interception of messages does not take place. The license agreement also restricts the Licensee from employing bulk encryption equipment in its network and mandates the ensuring of network security. The Licensee is also required to provide the call data records of all the specified calls handled by the system at specified periodicity, as and when required by the security agencies in the format prescribed from time to time.
- (iii) Emergency Services: The Licensee is mandated to provide, either independently or through mutually agreed commercial arrangements with other telecom service providers, all public utility services as well as emergency services including toll free services like police, fire, ambulance.
- (iv) Roll-Out Obligations: The Licensees, which obtain radio frequency spectrum from the Government, are required to roll out specific network services within specified timelines.
- (v) Calling Line Identification (CLI): As per the security conditions laid down in the Unified License Agreement, CLI facility is to be provided by Licensee, and should not be tampered.

⁶⁵ Source: <https://www.dotindia.co.in/unified-licnse.html>

- (vi) Call Detail Record (CDR): The Licensee is required to maintain all commercial records/ Call Detail Record (CDR)/ Exchange Detail Record (EDR)/ IP Detail Record (IPDR) about the communications exchanged on the network, which must be archived for at least two years for scrutiny by the Licensor for security reasons.
- (vii) Customer verification: The Licensee is under an obligation to ensure adequate verification of each customer in the format prescribed by the Licensor, before enrolling him as a subscriber. The licensee is required to check the *bonafide* of the customer, verifying details as per Customer Acquisition Form (CAF).
- (viii) Customer Grievance Redressal: The license conditions require the Licensee to be responsive to the complaints lodged by its subscribers, rectify the anomalies within the mean time to restore (MTTR) specified and maintain the history sheets for each installation, statistics, and analysis on the overall maintenance status. Further Licensee is also mandated to notify in writing to its customers, all the policy and arrangements with respect to repair, fault rectification, compensation, or refunds.
- (ix) Network interconnection: The Licensee is required to provide interconnection to the networks of the eligible telecom service providers and is under an obligation to abide by the regulations on interconnection prescribed by TRAI.
- (x) Merger conditions: The license conditions require that whenever amalgamation or restructuring i.e., merger or demerger is sanctioned and approved by the High Court or Tribunal, scheme of amalgamation or restructuring shall be effective only after the written approval of the licensor for transfer/merger of licenses.
- (xi) Entry/ Exit obligations: In case a Licensee wants to surrender its license, it may surrender the license or any service authorization under this license, by giving notice of at least 60 Calendar days in advance to the Licensor (DoT) and at least 30 Calendar days' notice to each subscriber.

- 2.68 At present, telecom service providers are required to pay a onetime non-refundable entry fee for each authorized service, prior to signing the license agreement. Additionally, telecom service providers are also under an obligation to pay an annual license fee which is a percentage of the Adjusted Gross Revenue (AGR). Under the Unified License Agreement, the license fee currently is 8% of the AGR. Further, in case the telecom service providers obtain radio frequency spectrum, they have to pay spectrum related charges as per the provisions specified in the relevant Notice Inviting Applications (NIA) document for the auction of frequency spectrum or conditions of spectrum allotment/ Letter of Intent/ directions/ instructions of DoT.
- 2.69 In addition to the Unified License Agreement, the telecom service providers are also required to adhere to the regulatory obligations under the provisions of the Indian Telegraph Act, 1885, which are listed below:
- (i) Interception: The Indian Telegraph Act, 1885 puts a general obligation on telecom service providers to prevent unauthorized interception of messages and to maintain secrecy. The said Act also restricts any 'telegraph officer', which includes any person employed by a license holder, from altering, intercepting, or divulging the contents of any message, except as required by law (Section 26). Designated public officials have the right to intercept telephonic communications under identified circumstances (Section 5) and as per rules framed under the Indian Telegraph Act, 1885.
 - (ii) Universal Service Obligation⁶⁶: The Universal Service Obligation (USO) Fund was established with fundamental objective of providing access to basic telegraph services to people in remote and rural areas at affordable and reasonable prices. Subsequently, the scope of USO Fund was widened to provide access to telegraph services (including mobile services, broadband connectivity and ICT infrastructure creation) in rural and remote areas. The Indian Telegraph (Amendment) Act, 2003 giving

⁶⁶ Source: <https://usof.gov.in/genesis>

statutory status to the Universal Service Obligation Fund (USOF), and the rules for administration of the fund known as Indian Telegraph (Amendment) Rules, 2004 were notified on 26.03.2004. As per the Indian Telegraph Act 1885 (as amended in 2003 and 2006), the USO Fund is to be utilised exclusively for meeting the Universal Service Obligation. These services include provision of public telecom and information services, provision of household telephones in rural and remote areas, provision of additional rural community phones in areas after achieving the target of one Village Public Telephone in every revenue village etc. The Licensees are required to pay a USO Levy of 5% of their Adjusted Gross Revenue (AGR), as part of their License Fee to DoT.

2.70 Following are some of the key obligations applicable to telecom service providers under the regulations⁶⁷ framed by TRAI:

- (i) Interconnection: Telecom service providers are mandated to pay interconnection charges that are specified under the Telecommunication Interconnection Usage Charges Regulations, issued by TRAI.
- (ii) Billing & Metering (Code of Practice): Telecom service providers are required to follow the Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulations, 2006, issued by TRAI.
- (iii) Tariff protection: The Telecommunication Tariff Order, 1999 (as amended) requires telecom service providers to abide by the obligations pertaining to transparency, continuity, billing methods etc. in tariffs.
- (iv) Quality of Services (QoS): Telecom service providers are required to meet the QoS benchmarks notified by TRAI. In case of non-compliance, telecom service providers are liable to pay financial disincentives.
- (v) Grievance redressal: Under the Telecom Consumers Complaint Redressal Regulations, 2012, issued by TRAI, each telecom service provider is required to have a complaint resolution center which must resolve

⁶⁷ Source: <https://www.trai.gov.in/sites/default/files/CPOTT12112018.pdf>

complaints within the time frame specified by TRAI. Consumers can contact this center on a toll-free number to register their complaints.

- (vi) Unsolicited Customer Communication (UCC): The Telecom Commercial Communication Customer Preference Regulations (TCCCPR), 2018 issued by TRAI mandates that every Access Provider shall ensure that any commercial communication using its network only takes place using registered headers assigned to the senders for the purpose of commercial communication. It also mandates that every Access Provider shall establish Customer Preference Registration Facility (CPRF) and shall make necessary arrangements to facilitate its customers, on 24 hours X 7 days basis throughout the year.
- (vii) Mobile number portability (MNP): The Telecommunication Mobile Number Portability Regulations, 2009, issued by TRAI, give customers of a telecom service provider the freedom to port to another telecom service provider.

2.71 The Information Technology Act, 2000 (IT Act)⁶⁸ and the rules framed under it place certain regulatory obligations on body corporates or intermediaries which includes TSPs and providers of OTT services that can be regarded as same/ similar to the services provided by TSPs. Some of the regulatory obligations are given below:

- (i) Lawful Interception obligations: Section 69 of the IT Act gives the power to the Government to intercept, monitor or decrypt any computer resource. This provision also lays down a penalty of imprisonment upto seven years for an intermediary who does not assist the Government in interception or monitoring. Further Section 69B of the IT Act also empowers the Government to monitor and collect traffic data or information through any computer resource for cyber security.
- (ii) Takedown obligations: Section 69A of the IT Act empowers the Government to issue directions to any intermediary for blocking for

⁶⁸ Source: <https://legislative.gov.in/actsofparliamentfromtheyear/information-technology-act-2000>

public access of any information in any computer resource. The provision also prescribes a punishment of imprisonment upto seven years for any intermediary who fails to comply with the direction issued under it.

- (iii) Privacy and cybersecurity obligation: Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information), 2011 requires every service provider to outline a detailed privacy policy that is applicable to all users, that articulates nature of data collected, type of data that is collected and for what purpose including retention and further use. Additionally, India has consumer protection laws, financial regulations, competition law that ensures different aspects of user interest are protected. Further, Section 72 A of the IT Act provides for punishment for disclosure of information in breach of lawful contract.
- (iv) Intermediary liability: Rule 3(7) of the Information Technology (Intermediaries Guidelines), 2011 lays down a positive obligation on part of intermediaries like Internet Platforms and Services to comply with all lawful orders and render assistance to government agencies that are lawfully authorized. Section 79 of the IT Act states that intermediaries are exempted from liability for third party information or communication links made available or hosted by them subject to certain conditions. This includes the condition that the intermediary must observe due diligence while discharging its functions. However, this exemption does not apply if (i) the intermediary has conspired or abetted or aided or induced the commission of an unlawful act; or (ii) upon receiving actual knowledge, or on being notified by the appropriate agency that any information, data or communication link controlled by the intermediary is being used to commit the unlawful act, the intermediary fails to expeditiously remove or disable access to that material.
- (v) Encryption obligations: Section 69 of the IT Act requires entities to abide by any order to decrypt a computer resource. Section 84A allows the Government to prescribe suitable modes or methods of encryption for promotion of e-commerce and e-governance in the country.

2.72 The following table provides a comparison of the obligations imposed on the licensed telecom service providers vis-à-vis OTT communication providers:

S. No.	Obligation	Applicability on	
		Licensed Telecom service providers	OTT Communication service providers
1	the obligations under the Indian Telegraph Act, 1885	Yes	No
2	the terms and conditions under the License Agreement	Yes	No
3	the regulatory fees payable to DoT under the License Agreement	Yes	No
4	spectrum related charges payable to DoT for the right to use of spectrum	Yes	No
5	obligations under the regulations/ orders/ directions issued by TRAI	Yes	No
6	obligations on body corporates or intermediaries under The Information Technology Act, 2000	Yes	Yes

(2) ITU's recommendations on 'Collaborative framework for OTTs' (2019)

2.73 In May 2019, ITU-T issued its recommendations D.262 (05/2019)⁶⁹ on Collaborative framework for OTTs'. These recommendations provide a collaborative framework in order to promote competition, consumer protection, consumer benefits, dynamic innovation, sustainable investment and infrastructure development, accessibility and affordability in relation to the

⁶⁹ Source: https://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-D.262-201905-I!!PDF-E&type=items

global growth of the over the top (OTT) applications. An extract of the said recommendations is given below:

"6 Creating an enabling environment to encourage competition, innovation and investment in the digital economy

6.1 In view of the evolving telecommunication environment, Member States are encouraged, in coordination with stakeholders, to promote competition, and encourage innovation and investment in the international telecommunication ecosystem.

6.2 To promote fair competition, innovation and investment in a highly dynamic and fast-moving industry, Member States should assess the economic, policy and consumer welfare impacts of OTT in all critical areas affected, including their regulatory frameworks and existing economic incentives with respect to the provisioning and use of OTTs.

6.3 Member States are encouraged to consider and develop enabling policies and/or regulatory frameworks to foster fair competition between network operators and providers of OTTs. Member States are also encouraged to examine, if necessary, the reduction of the regulatory burden upon traditional networks and telecommunication services.

6.4 An important element of competition policy and regulation is the identification and definition of relevant markets, and in this context, Member States should consider the fundamental differences between traditional international telecommunication services and OTTs, including the cross-border and global nature of OTTs, low barriers to entry for OTTs and integration of the markets amongst other factors.

7 Relationship between OTT and network operators

7.1 In the new communication ecosystem, connectivity and services, while no longer tethered together, all remain critically interdependent. Given that network operators and OTT are part of the same ecosystem, Members States should consider the important inter-dependencies between them, which may include how consumer demand for OTT can lead to an increase in demand for data from telecommunication service providers as well as a decrease in demand for traditional international telecommunication services.

7.2 Member States should encourage mutual cooperation as far as practical between OTTs and network operators, with a view to fostering innovative, sustainable, viable business models and their positive roles in fostering socio-economic benefits.

7.3 Member States should continue to stimulate entrepreneurship and innovation in the development of telecommunication infrastructures, especially the development of high capacity networks, considering the disruptive power and the social and economic impact of increasing access to broadband connections.

8 Fostering innovation and investment

8.1 Member States should continue to foster entrepreneurship and innovation in OTT applications, including their creation, provision and use, which benefit users, and encourage sustainable infrastructure investments.

8.2 In the spirit of service availability and affordability, Member States should foster enabling legal and regulatory environments, and develop policies that are fair, transparent, stable, predictable and non-discriminatory; and that promote competition, foster technological and service innovation and encourage private sector investment incentives, in order to ensure the continuing growth and adoption of OTTs.

8.3 Member States and Sector Members should participate and contribute to standardization efforts through global and regional standard development organizations in order to ensure open, interoperable, portable, secure and affordable services and applications for consumers, anywhere and anytime, where practicable.

8.4 More generally, Member States are encouraged to consider not only the opportunities and benefits that OTTs provide but also the challenges that arise from their exponential growth. Member States should foster access to and growth of these services through, inter alia, support for innovation, demand stimulation, industry collaboration and public-private partnerships.

9 Consumer protection and international collaboration

9.1 Due to the ever-increasing volumes of data being exchanged globally over the Internet as well as over international traditional telecommunication

services, Member States and regulators should take appropriate measures to encourage all market participants to maintain the security of international telecommunication networks carrying such data and thus help protect consumers.

9.2 Given the global nature of many OTT, collaboration across multiple Member States and Sector Members should be strongly encouraged.”

(3) ITU’s Recommendation on voluntary commercial arrangements between telecommunication network operators and OTT providers (2020)

- 2.74 In August 2020, ITU-T issued its recommendations D.1101 (08/2020)⁷⁰ on ‘Enabling environment for voluntary commercial arrangements between telecommunication network operators and OTT providers’. The said recommendation recognizes that *“there has been significant expansion in the social and economic impact of OTT on society, and its demand has been increasing faster than ever. In the long run, cooperation between OTT providers and network operators may encourage competitive markets and sustainable development of the international telecommunication/ICT ecosystem”*. A relevant extract of the said recommendations is given below:
- “6 An enabling environment for voluntary commercial arrangements between telecommunication network operators and providers of OTT application*
- 6.1 Given that network operators and OTTs are part of the international telecommunication/ ICT ecosystem, Member States are encouraged to work with relevant stakeholders to develop an enabling environment for the benefit of all stakeholders.*
- 6.2 Member States are encouraged to create an enabling regulatory environment that supports and encourages the development of innovative business models in line with the advancement of technology and innovations, which are changing faster than ever.*

⁷⁰ Source: <https://www.itu.int/rec/T-REC-D.1101-202008-I/en>

6.3 Recognizing that OTT providers create new demand for communication services, it is important for Member States to create frameworks that do not inhibit market entry. At the same time, Member States should continue to ensure that even if softer regulation is in place, a competitive landscape is assured for the benefit of consumers and innovation.

6.4 In order to capitalize on the consumer demand for OTT applications, Member States should enable telecommunication network operators the flexibility to adopt innovative business models, such as the transition to data-centric end-user tariff structures to reduce dependence on revenues from traditional telecommunication services.

6.5 Regulators are encouraged to permit telecommunication network operators to offer their own OTT applications without subjecting them to legacy telecommunication regulations, as long as those applications as well as underlying broadband Internet access services are offered in a way that does not disadvantage or discriminate against competitive alternatives.

6.6 Recognizing that the private and public sectors play a key role in the expansion of telecommunication/information and communication technologies (ICTs), for example through investments in infrastructures and services, Member States are encouraged to develop policy frameworks to enable voluntary commercial arrangements among telecommunication network operators and providers of OTT applications so as to allow each to invest in Internet infrastructure, without subjecting the parties to traditional telecommunication regulatory requirements.

6.7 In order to promote a competitive landscape for the benefit of consumers and innovation, Member States are encouraged to examine the appropriate level of regulations both to OTT providers and traditional telecommunication providers, which may include refraining from extending legacy telecommunication regulations to providers of OTTs and examining the reduction of the regulatory burden upon traditional networks and telecommunication services.

7 Specific measures

7.1 Member States are encouraged to promote mutual cooperation as far as practical between providers of OTTs and telecommunication network operators. To maintain competition in the market in the context of these partnership, member states are encouraged to consider conducting analysis on competition impacts (including transparency, non-discriminatory conditions, innovations and consumer benefits) of those arrangements.”

(4) CTO’s Recommendations on OTT Applications & the Internet Value Chain (2020)

2.75 In the year 2020, Commonwealth Telecommunication Organization (CTO) released its ‘Recommendations to Regulators, Policy Makers and Tax Authorities on Over The Top (OTT) Applications & the Internet Value Chain’⁷¹. The conclusion of these recommendations are given below:

"The ICT sector value chain has expanded and so has the requirement for regulatory tools and oversight:

There are more participants in the ICT sector value chain now than 25 years ago and content has been democratised. Evolving technologies have further changed how the ICT sector generates value for end-users. The linkages between segments of the wider ICT value chain mean that regulation cannot be limited to only one segment of the value chain. As more players enter the ICT value chain, boundaries between segments will blur and interventions in one market will have knock-on effects in other markets in the value chain. Just as segments of the value chain influence each other, so regulation in the connectivity segment must consider regulations from other institutions and jurisdictions.

Regulatory best-practice principles have not changed:

Rushing to regulate OTTs resulted in clear negative impacts on consumers, the ICT sector and economic growth in several countries. Regulatory interventions

⁷¹ Source: <https://cto.int/wp-content/uploads/2020/05/CTO-OTT-REPORT-2020.pdf>

concerning OTTs should not deviate from the primary purpose of regulation and should follow best-practice principles (like Ofcom's). Prior impact assessments are needed. For example, a regulatory impact assessment (RIA) is the most important tool to estimate the impact on markets and to ensure regulatory principles of proportionate and minimal intervention are met. Regulating OTTs also requires a clear and precise definition of OTT applications and services. Regulators will have to collect evidence of the impact of OTTs in a market. If there is evidence of market failure, regulators will have to assess which regulatory tool is appropriate and proportionate.

New institutions and legislative frameworks will arise:

While competition issues arising from OTT use can be assessed with the current regulatory market definitions and tools, other emerging online (tech) regulations are required to address online consumer protection, data privacy and cybersecurity."

(5) ITU's Recommendation on customer redress and consumer protection mechanism for OTTs (2021)

2.76 In December 2021, ITU-T issued its recommendations D.1102 (12/2021) on 'Customer redress and consumer protection mechanisms for OTTs'⁷². This Recommendation proposes customer redress and consumer protection mechanisms related to the provision and consumption of OTTs. This comes in the wake of the increasing use of OTT applications for voice calling, instant messaging and video calling. The protection mechanisms bring convenience and service affordability for consumers. The relevant extract of the said recommendation is given below:

"6 Transparency and accountability

6.1 Ensuring transparency and accountability For transparency and accountability, Member States through the national regulatory authorities (NRAs), should ensure that:

⁷² Source: https://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-D.1102-202112-I!!PDF-E&type=items

- a) The language used for terms and conditions is simple and widely understood.*
- b) The text used for terms and conditions is visible for all to see and read.*
- c) Information on terms and conditions including changes thereof, is made available to consumers in a timely, accurate, and transparent manner in order to enable consumers to make informed and rational decisions.*

7 Data protection and privacy

7.1 Access to and use of personal data

OTT subscribers should be able to make informed decisions about the extent to which their data can be accessed by others and the usage that third parties may make of it. As such, the Member States through NRAs should endeavour to ensure that consumers whose personal data has been collected have a right to:

- a) Access their data and understand how it is used;*
- b) Amend inaccurate data about themselves;*
- c) Port their data;*
- d) Control/restrict the processing of their data;*
- e) Withdraw their consent on the use of their data;*
- f) Request for the deletion or de-identification of their data.*

7.2 Limitations in exceptional circumstances

A consumer's rights to control, access, deletion/de-identification, and portability may be limited in exceptional circumstances, and only to the extent necessary, if exercising such rights would:

- a) Compromise the privacy, security, or other rights of the personal information of another consumer (for example, when exercising rights, it would give a person access to someone else's information);*
- b) Interfere with law enforcement, judicial proceedings, investigations, existing legal obligations, or efforts to guard against, detect, or investigate malicious, unlawful or fraudulent activity, or enforce contracts;*
- c) Require disproportionate effort, taking into consideration available technology;*
- d) Disclose the organization's proprietary technology or business insights; or*
- e) Violate laws or the rights and freedoms of other consumers.*

7.3 Procedures for data collection and processing

OTT providers should maintain transparent procedures for data collection and processing and establish the requisite infrastructure to ensure smooth handling of consumer data. These can be achieved through:

- a) Establishing systems for accurate and secure records for all data collected;*
- b) Establishing systems for handling personal data requests, data deletion requests and data disclosure requests in a timely and efficient manner;*
- c) Obtaining consent through adaptable, technology-neutral, flexible mechanisms, including opt-in and opt-out mechanisms, to facilitate consumer flexibility in exercising their rights;*
- d) Establishing a comprehensive privacy and security programme appropriate to the size and the nature of the information collected, and be able to demonstrate compliance with the programme;*
- e) Establishing oversight of data transfers.*

8 Customer support services

8.1 Access to customer support services

Consumers should have access to a variety of customer support services such as live chat support, e-mail, phone, and self-service knowledge support channels.

9 Competition issues

9.1 Data portability

OTT subscribers should be able to easily switch from one OTT provider to another by easily porting their data from one service provider to another as and when they desire, where technically feasible. As such, OTT providers are encouraged to facilitate data portability and interoperability of their platforms to foster competition and provide choice for consumers in the market. OTT providers should be able to consider data protection and security requirements in designing tools to enable portability and deciding with whom to interoperate, with guidance from regulators.

10 Consumer empowerment mechanisms

10.1 Consumer education and awareness

Member States are encouraged through the NRAs to develop and implement consumer empowerment programmes related to the use of OTTs through education and awareness campaigns and public advocacy amongst others. Focus of the programmes may include:

- a) Consumer rights and responsibilities in the use of OTTs;*
- b) Enhancing media literacy.*

11 Enhancing responsible use of OTTs

11.1 OTT providers are encouraged to put in place measures that promote responsible use of OTTs, which may include inserting features that allow users to monitor how much time they spend on social media.

12 Regional and international cooperation

12.1 Member States are encouraged to foster cooperation at regional and international levels for the purpose of sharing information and experiences on OTT consumer protection issues.”

(6) BEREC preliminary assessment of the underlying assumptions of payments from large CAPs to ISPs (2022)

- 2.77 In October 2022, BEREC issued a paper titled 'BEREC preliminary assessment of the underlying assumptions of payments from large CAPs to ISPs'⁷³. This paper presents a preliminary assessment, in relation to the discussion on the mechanism for “direct compensation” also referred to as “fair share” proposed by the members of European Telecommunications Network Operators' Association (ETNO) during 2021/2022, which resembles the “sending party network pays” (SPNP) charging regime. The paper states that “*previously, at the World Conference on International Telecommunications 2012 (WCIT 2012), ETNO proposed to implement a “sending party network pays” charging mechanism. At that time, BEREC assessed this proposal and concluded that deviating from the current principles might be of significant harm to the internet*

⁷³ Source: https://www.berec.europa.eu/system/files/2022-10/BEREC%20BoR%20%2822%29%20137%20BEREC_preliminary-assessment-payments-CAPs-to-ISPs_0.pdf

ecosystem, as ISPs could exploit their termination monopoly in a similar manner to the traditional telephony termination monopoly". The paper mentions that "at this stage, the paper "only focuses on the underlying assumptions regarding the need to regulate remunerations of large content and application providers (CAPs) to internet service providers (ISPs)".

2.78 The preliminary findings of BEREC regarding the direct compensation mechanism are given below:

"BEREC has found no evidence that such mechanism is justified given the current state of the market. BEREC believes that the ETNO members' proposal could present various risks for the internet ecosystem.

To wrap up, the BEREC preliminary findings regarding the "direct compensation" mechanism are:

- 1. The internet has proven its ability to self-adapt to changing conditions, such as increasing traffic volume and changing demand patterns.*
- 2. There needs to be an adequate justification for any measure intervening in the market.*
- 3. The "sending party network pays" (SPNP) model would provide ISPs the ability to exploit the termination monopoly and it is conceivable that that such a significant change could be of significant harm to the internet ecosystem.*
- 4. Therefore, SPNP would require regulatory oversight and could require regulatory intervention.*
- 5. Traffic is requested and thus "caused" by ISPs' customers.*
- 6. CAPs are also able to optimise the data efficiency of the content and applications they provide.*
- 7. Fixed access networks costs exhibit a very low traffic-sensitivity, while mobile networks experience some degree of traffic-sensitivity.*
- 8. IP-interconnection disagreements are typically about increasing the capacity of the IP interconnection link.*
- 9. The cost of network upgrades that are necessary to handle an increased IP traffic volume are very low when compared to the total network costs.*
- 10. CAPs and ISPs are mutually dependent on each other.*

11. The demand from ISPs customers for content drives demand for broadband access.

12. Availability of broadband access drives demand for content.

13. There is no evidence of "free-riding".

14. Costs for internet connectivity are typically covered and paid for by ISPs customers.

15. A further and broader analysis could be carried out on other approaches related to the debate.

2.79 In this background, the Authority solicits inputs of stakeholders on the following set of questions:

Issues for consultation:

Q5. 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.

Q6. 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.

Q7. 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.

Q8. 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.

Q9. 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.

2.80 The following chapter examines the issues related to selective banning of OTT services.

CHAPTER III
EXAMINATION OF THE ISSUES RELATED TO SELECTIVE BANNING OF
OTT SERVICES

A. Background

3.1 The section 5(2) of the Indian Telegraph Act, 1885⁷⁴ provides as below:

*"(2) On the occurrence of any public emergency, or in the interest of the public safety, the Central Government or a State Government or any officer specially authorised in this behalf by the Central Government or a State Government may, if satisfied that it is necessary or expedient so to do in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States or public order or for preventing incitement to the commission of an offence, for reasons to be recorded in writing, by order, **direct that any message or class of messages to or from any person or class of persons, or relating to any particular subject, brought for transmission by or transmitted or received by any telegraph, shall not be transmitted**, or shall be intercepted or detained, or shall be disclosed to the Government making the order or an officer thereof mentioned in the order:*

Provided that press messages intended to be published in India of correspondents accredited to the Central Government or a State Government shall not be intercepted or detained, unless their transmission has been prohibited under this sub-section." [Emphasis supplied]

3.2 The section 7(1) of the Indian Telegraph Act, 1885 provides as below:

"(1) The Central Government may, from time to time, by notification in the Official Gazette, make rules consistent with this Act for the conduct of all or any telegraphs established, maintained or worked by the Government or by persons licensed under this Act."

⁷⁴ Source: https://dot.gov.in/sites/default/files/the_indian_telegraph_act_1985_pdf.pdf

3.3 In exercise of the powers conferred by section 7 of the Indian Telegraph Act, 1885, the Central Government notified the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 [G.S.R. 998(E)]⁷⁵ to regulate the temporary suspension of telecom services due to public emergency or public safety. The relevant extract of these rules is given below:

"2. (1) Directions to suspend the telecom services shall not be issued except by an order made by the Secretary to the Government of India in the Ministry of Home Affairs in the case of Government of India or by the Secretary to the State Government in-charge of the Home Department in the case of a State Government (hereinafter referred to as the competent authority), and in unavoidable circumstances, where obtaining of prior direction is not feasible, such order may be issued by an officer, not below the rank of a Joint Secretary to the Government of India, who has been duly authorised by the Union Home Secretary or the State Home Secretary, as the case may be:

Provided that the order for suspension of telecom services, issued by the officer authorised by the Union Home Secretary or the State Home Secretary, shall be subject to the confirmation from the competent authority within 24 hours of issuing such order:

Provided further that the order of suspension of telecom services shall cease to exist in case of failure of receipt of confirmation from the competent authority within the said period of 24 hours.

(2) Any order issued by the competent authority under sub-rule (1) shall contain reasons for such direction and a copy of such order shall be forwarded to the concerned Review Committee latest by next working day.

(3) The directions for suspension issued under sub-rule (1) shall be conveyed to designated officers of the telegraph authority or to the designated officers of the service providers, who have been granted licenses under section 4 of the said Act, in writing or by secure electronic communication by an officer not below the rank of Superintendent of Police or of the equivalent rank and mode

⁷⁵ Source: <https://dot.gov.in/circulars/temporary-suspension-telecom-services-public-emergency-or-public-safety-rules-2017>

of secure electronic communication and its implementation shall be determined by the telegraph authority.

(4) The telegraph authority and service providers shall designate officers in every licensed service area or State or Union territory, as the case may be, as the nodal officers to receive and handle such requisitions for suspension of telecom services.

(5) The Central Government or the State Government, as the case may be, shall constitute a Review Committee.

(i) The Review Committee to be constituted by the Central Government shall consist of the following, namely:-

(a) Cabinet Secretary-Chairman;

(b) Secretary to the Government of India In-charge, Legal Affairs-Member;

(c) Secretary to the Government, Department of Telecommunications - Member.

(ii) The Review Committee to be constituted by the State Government shall consist of the following, namely:-

(a) Chief Secretary -Chairman;

(b) Secretary Law or Legal Remembrancer In-Charge, Legal Affairs - Member;

(c) Secretary to the State Government (other than the Home Secretary) - Member.

(6) The Review Committee shall meet within five working days of issue of directions for suspension of services due to public emergency or public safety and record its findings whether the directions issued under sub-rule (1) are in accordance with the provisions of sub-section (2) of section 5 of the said Act.”

3.4 The matter relating to the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 came up for adjudication before the Hon'ble Supreme Court in the Writ Petition (Civil) No. 1031 of 2019 and Writ

Petition (Civil) No. 1164 of 2019. Through the judgment dated 10.01.2020⁷⁶ passed in the afore-mentioned writ petitions, the Hon'ble Supreme Court issued, *inter-alia*, the following directions:

- "a. The Respondent State/competent authorities are directed to publish all orders in force and any future orders under Section 144, Cr.P.C and for suspension of telecom services, including internet, to enable the affected persons to challenge it before the High Court or appropriate forum.*
- b. We declare that the freedom of speech and expression and the freedom to practice any profession or carry on any trade, business or occupation over the medium of internet enjoys constitutional protection under Article 19(1) and Article 19(1)(g). The restriction upon such fundamental rights should be in consonance with the mandate under 19(2) and (6) of the Constitution, inclusive of the test of proportionality.*
- c. An order suspending internet services indefinitely is impermissible under the Temporary Suspension of Telecom Services (Public Emergency or Public Service) Rules, 2017. Suspension can be utilized for temporary duration only.*
- d. Any order suspending internet issued under the Suspension Rules, must adhere to the principle of proportionality and must not extend beyond necessary duration.*
- e. Any order suspending internet under the Suspension Rules is subject to judicial review based on the parameters set out herein.*
- f. The existing Suspension Rules neither provide for a periodic review nor a time limitation for an order issued under the Suspension Rules. Till this gap is filled, we direct that the Review Committee constituted under Rule 2(5) of the Suspension Rules must conduct a periodic review within seven working days of the previous review, in terms of the requirements under Rule 2(6).*
- g. We direct the respondent State/ competent authorities to review all orders suspending internet services forthwith.*

⁷⁶ Source: https://main.sci.gov.in/supremecourt/2019/28817/28817_2019_2_1501_19350_Judgement_10-Jan-2020.pdf

h. Orders not in accordance with the law laid down above, must be revoked. Further, in future, if there is a necessity to pass fresh orders, the law laid down herein must be followed.

i. In any case, the State/ concerned authorities are directed to consider forthwith allowing government websites, localized/limited ebanking facilities, hospitals services and other essential services, in those regions, wherein the internet services are not likely to be restored immediately.

...”

3.5 Subsequently, through an Office Memorandum dated 10.11.2020 to all Chief Secretaries of States & Chief Secretaries/ Administrators of Union Territories, the Central Government conveyed, *inter-alia*, as below:

“It may be ensured that orders for suspension of Telecom Services issued under Temporary suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 are in compliance to the directions of the Hon’ble Supreme Court.”

3.6 Further, through an amendment dated 10.11.2020⁷⁷, the Central Government amended the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 and inserted the following sub-rule:

“(2A) The suspension order issued by the competent authority under sub-rule (1) shall not be in operation for more than fifteen days.”

3.7 Thereafter, in December 2021, the Parliament’s Standing Committee on Communication and Information Technology submitted its 26th report titled ‘Suspension of telecom services/ Internet and its impact’. The recommendation No. 14 of the said report is reproduced below:

“Selective Banning of Services

14. Keeping in view the fact that complete shutdown of telecom services/ internet affects the people in many ways, the Committee desired to know if it

⁷⁷ Source: <https://dot.gov.in/circulars/gazette-notification-temporary-suspension-telecom-services-amendment-rules-2020>

was technically possible to shut down only those services in areas likely to be used by terrorist/ anti-social elements rather than shutting down the internet as a whole. The Department has informed that services hosted on cloud are difficult to ban selectively since they operate from multiple locations in multiple countries and continuously shift from one service to the other. However, websites operating through fixed URLs can be banned. The Department have also informed the Committee that Facebook, WhatsApp, Telegram etc. are basically categorized as over the top telecom services, OTT services in short. These OTT services are riding over the existing telecom service provider's network. The Committee note that recently, Department of Telecom have received a recommendation from TRAI on the OTT services and one of the major recommendations of the TRAI is that currently these OTT services are not required to be regulated. DoT are examining the recommendation and will take an appropriate decision on the recommendations. DoT would be in a position to provide answers to the Committee once the decision is taken whether they would be able to block the OTT services selectively or not.

The Committee feels that it will be of great relief if the Department can explore the option of banning selective services, such as Facebook, WhatsApp, Telegram etc. instead of banning the Internet as a whole. This will allow financial services, health, education, and various other services to continue to operate for business as usual thereby minimizing inconvenience and suffering to the general public and also help in controlling spreading of misinformation during unrest. Adoption of such less restrictive mechanisms will be a welcome initiative. The Committee strongly recommend that the Department urgently examine the recommendation of TRAI and come out with a policy which will enable the selective banning of OTT services with suitable technological intervention, such as Facebook, WhatsApp, Telegram services during periods of unrest/ crisis that are liable to be used by the terrorists or anti national element/ forces to ferment trouble in the specified regions. The Committee look forward to positive development in this regard. Till such time every effort should be made to ensure that uninterrupted services are provided through the State broadband network which can be monitored easily for possible misuse."

3.8 In this background, through the back-reference dated 07.09.2022, DoT has requested TRAI to suggest a suitable regulatory framework for OTTs, including issues relating to “selective banning of OTT services” as part of its recommendations.

B. Examination of the Matter

3.9 Clause 2.1(i) of Chapter IX of Unified License (Internet Service) states, *inter-alia*, as below:

"The subscriber shall have unrestricted access to all the content available on Internet except for such content which is restricted by the Licensor/ designated authority under Law."

3.10 Under section 69A of the Information Technology Act 2020⁷⁸, the Government has powers to issue directions for blocking for public access of any information through any computer resource. The said provision is reproduced below:

"69A. Power to issue directions for blocking for public access of any information through any computer resource.–

(1) Where the Central Government or any of its officers specially authorised by it in this behalf is satisfied that it is necessary or expedient so to do, in the interest of sovereignty and integrity of India, defence of India, security of the State, friendly relations with foreign States or public order or for preventing incitement to the commission of any cognizable offence relating to above, it may subject to the provisions of sub-section (2), for reasons to be recorded in writing, by order, direct any agency of the Government or intermediary to block for access by the public or cause to be blocked for access by the public any information generated, transmitted, received, stored or hosted in any computer resource.

⁷⁸ Source: <https://www.indiacode.nic.in/handle/123456789/1999>

(2) The procedure and safeguards subject to which such blocking for access by the public may be carried out, shall be such as may be prescribed.

(3) The intermediary who fails to comply with the direction issued under sub-section (1) shall be punished with an imprisonment for a term which may extend to seven years and also be liable to fine."

3.11 The section 2(1)(w) of the Information Technology Act, 2000 defines the term 'intermediary' as below:

"intermediary", with respect to any particular electronic records, means any person who on behalf of another person receives, stores or transmits that record or provides any service with respect to that record and includes telecom service providers, network service providers, internet service providers, web-hosting service providers, search engines, online payment sites, online-auction sites, online-market places and cyber cafes;

3.12 In exercise of the powers conferred under the relevant sections of the Information Technology Act 2000, the Government has framed Information Technology (Procedure and Safeguards for blocking for Access of Information by Public) Rules, 2009⁷⁹. These rules provide, *inter-alia*, a detailed procedure to be followed and safeguards for blocking access of information by the public. The clause 5 of these rules is reproduced below:

"5. Direction by Designated Officer. – The Designated Officer may, on receipt of any request from the Nodal Officer of an organization or a competent court, by order direct any Agency of the Government of intermediary to block for access by the public any information or part thereof generated, transmitted, received, stored or hosted in any computer resource for any of the reasons specified in sub-section (1) of Section 69A of the Act."

79

Source:<https://www.meity.gov.in/writereaddata/files/Information%20Technology%20%28%20Procedure%20and%20safeguards%20for%20blocking%20for%20access%20of%20information%20by%20public%29%20Rules%2C%202009.pdf>

3.13 When directed by the authorized agencies, all intermediaries including the Access Service Providers and Internet Service Providers (ISPs) must promptly implement the blocking, as specified. Section 12 of Information Technology (Procedure and Safeguards for blocking for Access of Information by Public) Rules, 2009 stipulates action for non-compliance of directions by Intermediary as below:

"12. Action for non-compliance of direction by Intermediary. – In case the intermediary fails to comply with the direction issued to him under rule 9, the Designated Officer shall, with the prior approval of the Secretary, Department of Information Technology, initiate appropriate action as may be required to comply with the provisions of sub-section (3) of section 69A of the Act."

3.14 Shutdown of telecommunications or the internet can have significant ramifications for a country's economy. It also disrupts critical services such as education and healthcare. Consequently, such shutdown affects the life and livelihood of the citizens of the country. In a report published by the UN Human Rights office on 24.01.2022⁸⁰, *"[t]he costs to jobs, education, healthcare, and political participation virtually always exceed any hoped-for benefit."* For these reasons, selective banning of specific OTT applications and websites etc., which are likely to be used by the terrorists or anti-national elements to ferment trouble in the specified regions, appears to be preferable as compared to complete internet shutdown.

3.15 In this context, the need for a regulatory framework for selective banning of OTT services under the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 or any other law, in force is required to be examined.

3.16 *Prima facie*, the websites that use dynamic IP addresses and are hosted on cloud servers can pose a challenge to conventional methods of blocking. In

⁸⁰ Source: <https://news.un.org/en/story/2022/06/1121242>

such situations, alternative methods may be necessary to effectively control internet filtering. Advanced techniques can be employed to identify and block access to such websites. Further, there may be scenarios where the targeted websites use Hypertext Transfer Protocol Secure (https) protocol. HTTPS protocol provides encryption and security for websites, making it difficult for service providers to block content on these sites. However, there are still ways to block or filter content at a network level, such as using a firewall or content filtering software. As far as area specific barring is concerned, it also needs to be carried out at network level, for which effective methods are required to be worked out.

3.17 In this background, the Authority solicits inputs of stakeholders on the following set of questions:

Issues for consultation:

Q10. What are the technical challenges in selective banning of specific OTT services and websites in specific regions of the country for a specific period? Please elaborate your response and suggest technical solutions to mitigate the challenges.

Q11. Whether there is a need to put in place a regulatory framework for selective banning of OTT services under the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 or any other law, in force? Please provide a detailed response with justification.

**Q12. In case it is decided to put in place a regulatory framework for selective banning of OTT services in the country, -
(a) Which class(es) of OTT services should be covered under selective banning of OTT services? Please provide a detailed response with justification and illustrations.**

(b) What should be the provisions and mechanism for such a regulatory framework? Kindly provide a detailed response with justification.

Q13. Whether there is a need to selectively ban specific websites apart from OTT services to meet the purposes? If yes, which class(es) of websites should be included for this purpose? Kindly provide a detailed response with justification.

Q14. Are there any other relevant issues or suggestions related to regulatory mechanism for OTT communication services, and selective banning of OTT services? Please provide a detailed explanation and justification for any such concerns or suggestions.

3.18 The following chapter provides an overview of international regulatory practices in respect of OTT services.

CHAPTER IV

INTERNATIONAL PRACTICES

4.1 The regulatory practices in respect of OTT services followed in some countries are outlined below.

A. Australia

4.2 In 2018, the Australian Competition and Consumer Commission (ACCC) conducted a study⁸¹ of the communication sector looking specifically at OTTs and the need for future access regulations.

4.3 The report concluded 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.'

4.4 One of the findings of the report is that 'the competitive relationship between OTT services and the traditional communications services they replicate is likely to be different for each type of service. To the extent that competition from OTT services acts as a constraint on pricing, there may be a case for reducing or removing existing economic regulation of traditional communications services.

4.5 In Australia, complete or nationwide internet shutdowns have not been reported. Certain websites or online platforms may be blocked or filtered to prevent access to illegal or harmful content, such as websites involved in the distribution of child pornography or extremist materials. The Australian government has also implemented measures to combat online piracy and

⁸¹ Source: [Communications Sector Market Study Final Report April 2018 \(acc.gov.au\)](https://www.accc.gov.au/publications/communications-sector-market-study-final-report-april-2018)

copyright infringement, resulting in the blocking of specific websites. ISPs in Australia are required to comply with legal obligations and cooperate with law enforcement agencies when necessary.

B. Austria

4.6 The regulatory framework for electronic communications in Austria is set out in the Austrian Telecommunications Act 2021 (TKG), which transposed the Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (EECC) into Austrian Law.

4.7 The EECC introduced a new, broad definition of electronic communication services, which now includes:

- (a) Number based interpersonal communication services (hereinafter NB-ICS).
- (b) Number-independent interpersonal communication services (hereinafter NI-ICS) as defined in article 2 EECC.

The respective definitions in the Austrian TKG 2021⁸² read as follows:

"Art 4 Definitions

[...]

7. 'number-based interpersonal communications service' means an interpersonal communications service which connects with publicly assigned numbering resources, namely, a number or numbers in national or international numbering plans, or which enables communication with a number or numbers in national or international numbering plans;

8. 'number-independent interpersonal communications service' means an interpersonal communications service which does not connect with publicly assigned numbering resources, namely, a number or numbers in national or

⁸² Source: https://www.rtr.at/rtr/service/rechtsvorschriften/gesetze/TKG_2021_en-gb.pdf

international numbering plans, or which does not enable communication with a number or numbers in national or international numbering plans;"

- 4.8 With this new definition of "communications service" in the TKG 2021, many of the Internet-based services are in a direct competitive relationship with conventional telephony and SMS. Number-independent interpersonal communications services (NI-ICS) are now included in the scope of certain sector-specific regulations. The TKG 2021 places them on an equal footing with traditional communications services in some areas (keyword: "level playing field"), such as Security and integrity, Service Quality, Interoperability, Universal service fund, Objection procedures and procedural rules (Duty to notify contractual conditions), Information requirements and Monitoring of competition.

C. Bangladesh

- 4.9 The Bangladesh Telecommunication Regulatory Commission (BTRC) has been empowered by the Government under the Bangladesh Telecommunication Regulation Act, 2001 (Act) to issue directives. Over-the-top (OTT) services are creating new dimensions in the entertainment industry and creating true substitution of the incumbent voice-based telecom services. As a consequence, this phenomenon is asking for the overhaul of the regulatory regime telecom sector. Consideration of the economic impact of OTTs is based upon recognition of the fundamental differences between traditional telecommunication operators and OTTs, including *inter-alia*, control of broadband internet access, level of regulatory exposure, barriers to entry, competitive environment, level of substitutability between OTTs and traditional telecom services and interconnection to public networks.
- 4.10 Internet Protocol Telephony Service Provider (IPTSP) operators' OTT services shall be operated and regulated under the following existing policy, regulations and guideline:

- (i) International Long Distance Telecommunications Services (ILDTS) Policy 2010;
- (ii) IPTSP licensing Guidelines;
- (iii) Interconnection Regulations, 2004;
- (iv) Quality of service Regulations, 2018.

4.11 OTT means an application accessed and delivered over the public internet that may be a direct technical/ functional substitute for traditional calling (& messaging) services. OTT user shall specifically refer to a user who is using a mobile based application to make a call (and/or send message) either to another OTT user or to a conventional subscriber (with a number) in PLMN/ PSTN/ IPTSP network.

4.12 OTT (mobile app) based calling service (offered by nationwide IPTSP) is allowed into the PLMN and PSTN network, in accordance with Directives⁸³ on Mobile Applications Based (Over-the-Top, OTT) Calling Services of the IPTSP.

4.13 BTRC will decide the specific interconnection capacity for IPTSP operators offering app-based calling service. Based on the considerations of different factors, BTRC will approve the interconnection capacity for individual service providers. The modality (technology) of the interconnection shall be decided by BTRC. For either type of technology (circuit or IP based), the IPTSP operator will provide an appropriate traffic monitoring system to the concerned division of BTRC.

4.14 OTT providers are required to have commercial negotiation with the infrastructure providers, for their services to be allowed through incumbent network. These commercial negotiations consider how much of the network resources of the incumbents is used for the particular OTT and the cost of the

⁸³Source:

<http://old.btrc.gov.bd/sites/default/files/Directives%20on%20Mobile%20Applications%20Based%20Calling%20Services%20%28OTT%29%20of%20The%20IPTSP%20Operators.pdf>

network resources. It is also considered whether the service offered by the OTT is a substitution to the core service offered by incumbent.

D. Brazil⁸⁴

4.15 In the current framework, there are services that do not require a licence as they are classified as a value-added service (serviço de valor adicionado, SVA). These services “complement” and “assist” telecommunication activities, and are considered neither telecommunication nor broadcasting services.

4.16 Over-the-top services (OTTs) are considered as Value-added services in Brazil. OTT services are not covered under any license and are not regulated in the country.

E. European Union⁸⁵

4.17 The European Union (EU) has adopted the new European Electronic Communications Code (EECC) on the 11th of December 2018⁸⁶. The EECC is revising the framework to clearly regulate these new services. There are now two new regimes: one for number-independent service providers (such as instant messaging), the other for number-based service providers (such as VoIP). On the one hand, if OTT services offer access to publicly assigned numbering resources, they are subject to similar rules as the traditional telecommunications operators. On the other hand, if they only offer “number-independent interpersonal communications services”, they will be subject to a new and lighter regime.

4.18 At first, this new set of obligations was supposed to be implemented in every EU country before the 21.12.2020. However, by October 2021 only eight

⁸⁴ Source: [Communication policy and regulation | OECD Telecommunication and Broadcasting Review of Brazil 2020 | OECD iLibrary \(oecd-ilibrary.org\)](#)

⁸⁵ Source: https://ec.europa.eu/commission/presscorner/detail/en/IP_22_1975

⁸⁶ Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L1972>

countries (Finland, Hungary, Denmark, Greece, Bulgaria, France, Germany, and Italy)⁸⁷ implemented the new framework in their national law.

4.19 The European Commission decided in April 2022 to refer Spain, Croatia, Latvia, Lithuania, Ireland, Poland, Portugal, Romania, Slovenia and Sweden to the Court of Justice of the European Union over their failure to fully transpose and communicate to the Commission how national measures transpose the EU Electronic Communications Code.

4.20 In July 2021, the European Union Agency for Cybersecurity (ENISA) published its 'Guideline on Security Measures Under the EECC' (4th Edition)⁸⁸, confirming that the security provisions in the EECC for number-independent interpersonal communication services (NI-ICS) are the same as for the number-based services. The said guideline mentioned, *inter-alia*, as below:

"5.3 SUPERVISION REGIME FOR NI-ICS PROVIDERS

In general, the security provisions in the EECC for NI-ICS are the same as for the number based services. Both are subject to (normal) ex-ante, supervision, and are required to provide information, submit to security audits and be subjected to investigation of non-compliance by the competent authorities. However, because these providers do not normally exercise actual control over the transmission networks, there may be different risks for these providers, and certain security measures may not be needed, if justified on the basis of a risk assessment."

F. France

4.21 France has implemented the EECC via an Ordinance published on the 26.05.2021 and two subsequent decrees issued in September and October 2021. As a result, it is now compulsory for VoIP and OTT operators to respect the obligations set out in the EECC.

⁸⁷ Source: https://www.gleisslutz.com/en/Telecommunications_Modernisation_Act.html

⁸⁸ Source: <https://www.enisa.europa.eu/publications/guideline-on-security-measures-under-the-eecc>

4.22 A press release by the French Regulator (ARCEP) in July 2022 mentioned that the transposition of the European Electronic Communications Code in May 2021 gave ARCEP newfound powers, including the regulation of new over-the-top (OTT) providers, which provide calling and instant messaging services, and updating the universal electronic communications service, to keep pace with the population's changing consumption habits⁸⁹.

G. Germany⁹⁰

4.23 In 2019, there was a proposal for a new regulatory framework to monitor content on online platforms. A fully modernized Telecommunications Act (Telekommunikationsgesetz, TKG) has come into force in Germany on 1st December 2021. OTT-I providers are regulated under telecommunications law for the first time. OTT-I services facilitate individual and group communication in the form of language, images, videos, or other data using the internet protocol only over the open internet, without offering content.

4.24 In contrast, OTT-II services do not fall within the scope of Telecommunications Act. OTT-II services include content elements, ranging from search engines and on-demand platforms to information portals.

H. Indonesia⁹¹

4.25 To enhance legal certainty, especially with the rapidly developing digital platforms, the Ministry of Communication, and Informatics of the Republic of Indonesia (MOCI) has issued the Regulation regarding Private Electronic System Provider (Regulation) on 16th November 2020, which was promulgated and effective since 24th November 2020.

⁸⁹ Source: <https://en.arcep.fr/news/press-releases/view/n/annual-report-180722.html>

⁹⁰Source: https://www.gleisslutz.com/en/Telecommunications_Modernisation_Act.html

⁹¹Source: <https://www.hoganlovells.com/en/publications/indonesian-regulator-set-clearer-terms-for-internet-platforms>

- 4.26 This Regulation is aimed to complete a regulatory framework regarding the management and supervision of electronic system providers by private entities (private ESPs). This Regulation provides clarification on the terms and requirements for registration, and most importantly removing data localization requirements previously introduced in the draft regulation which sparked controversies. The Regulation introduces an obligation.
- 4.27 The Regulation introduces an obligation (Article 3 (1) and (2) of the regulation) for private TSPs to be registered with the MOCI through the Online Single Submission (OSS) system. This obligation extends to all private TSPs that operate internet portals, websites, and applications used for specific purposes.

I. Singapore

- 4.28 Infocomm Media Development Authority (IMDA) has taken a two-pronged approach to telecom licensing:
- (a) Facilities-based operators (FBO), which refers to the deployment and/or operations of telecom networks.
 - (b) Service-based operators (SBO), which refers to utilizing telecom network elements from an FBO to provide telecom services.
 - (i) Individual SBO license, where individual licensing is required (Managed Data Network Service, MVNO, IX, IP Telephony, M2M etc).
 - (ii) Class SBO license, where only registration with IMDA is required (Interconnected VOIP, International Calling Cards, Call-back services etc).
- 4.29 Internet based Voice and Data Services (communications OTT service provider) must obtain a Service-Based Operating (SBO) licence that prescribes only a minimum quality of service standards.⁹² In contrast, TSPs require a Facilities-

⁹² Source: [Telecommunications \(Class Licences\) Regulations - Singapore Statutes Online \(agc.gov.sg\)](https://www.agc.gov.sg/Regulations/ClassLicences)

Based Operations licence⁹³, which have far greater regulatory obligations to fulfill than SBO licensees. They are required to pay higher licence fees and have roll out obligations to fulfill as per the license. They are also required to implement and support number portability; provide interconnection; pay for the use of radio frequencies and comply with the IMDA's Quality of Service standards.

- 4.30 The government has implemented measures to regulate online content and combat illegal activities, such as the spread of fake news, hate speech, or online scams. These measures involve targeted actions against specific websites or online platforms that violate local laws or regulations. In some cases, access to certain websites or content may be restricted or blocked temporarily. Singapore has strict regulations in place to maintain social harmony and national security, which may involve monitoring or restricting certain online activities. However, complete or nationwide internet shutdowns have not been reported in Singapore.

J. Trinidad and Tobago

- 4.31 The topic of OTTs was first considered by the Telecommunications Authority of Trinidad and Tobago (TATT) in its consultative document, "Towards the Treatment of Over-the-Top (OTT) Services" in June 2015. In addition to evaluating the impact of OTT voice over Internet Protocol (VoIP) services within the industry, the document also aimed to engage the public on pertinent issues relating to OTTs. At that time, the TATT Authority took the decision to subsume previous discussions on OTT issues and net neutrality into one document addressing both topics.
- 4.32 In July 2018, the TATT Authority began public stakeholder discussions on the topics of net neutrality and OTT regulation through its consultative document Discussion Paper on Net Neutrality and OTT Services in Trinidad and Tobago

⁹³ Source: [Facilities-Based Operations \(FBO\) Licence - Infocomm Media Development Authority \(imda.gov.sg\)](https://www.imda.gov.sg/facilities-based-operations-fbo-licence)

(the Discussion Paper). The Authority sought feedback on the document from stakeholders with respect to the proposed guiding principles and regulatory approaches to net neutrality and the treatment of OTT services in Trinidad and Tobago.

4.33 In October 2021, the Authority published the decisions on recommendations (DORs) and the final version of the Discussion Paper. Based on feedback from that consultation process, and considering the dynamism of the industry, TATT indicated that future consultations on both topics would continue in separate frameworks on net neutrality and OTTs.

4.34 TATT has signaled some interest in introducing regulations to explicitly govern OTT services, particularly those which function equivalently or similarly to the traditional services and use numbering resources to connect to the PSTN.

4.35 TATT published "Framework on Over-the-Top Services (OTTs) in Trinidad and Tobago"⁹⁴ in August 2022 for a first round of consultation. In the proposed framework, TATT defines Over the Top Services as "Content, service or application, accessed by the public via the Internet, that may be a direct substitute for, and/ or may compete with a public telecommunications and/or broadcasting service." and that the scope of the proposed Framework is limited to OTT communications (voice and messaging) and OTT media services. This Framework presents TATT's recommendations on the treatment of OTT services accessed in Trinidad and Tobago.

K. Turkey⁹⁵

4.36 Within the scope of the Mobile Call Termination market, it was evaluated that in Turkey, OTT messaging services, generally put some degree of competitive strain on mostly SMS/MMS services. In this regard, the tariff control obligation

⁹⁴ Source: <https://tatt.org.tt/Portals/0/Documents/2022/Framework%20on%20OTTs-Ed.pdf?ver=2022-08-29-105153-363>

⁹⁵ Source: Inputs to TRAI from BTK

on SMS/MMS termination was lifted for mobile network operators. The licenced operators in Turkey complain about the OTTs that these providers are not regulated and should be regulated like licensed operators.

4.37 The amending law, passed and published on 13 October 2022 defines OTT services and OTT service provider as below:

"Over the top service: electronic communication services between persons within the scope of auditory, written, visual communication that are provided through a publicly available software independent of operators or the internet service provided to subscribers and users who have internet access.

Over the top service provider: Natural persons or legal entities providing services that are covered by the definition of over the top services."

4.38 The law gives a clear power to The Information and Communication Technologies Authority (ICTA) (*Turkish*: Bilgi Teknolojileri ve İletişim Kurumu (*BTK*)) to regulate and authorize OTT service providers considering the characteristics of the OTTs. However, currently BTK is closely monitoring the practices of the other countries, and possible regulation proposals will be evaluated in the near future.

L. United States of America

4.39 Non-interconnected OTT communications apps are not regulated as telecommunications services under US communications Act⁹⁶.

4.40 The US distinguishes between 'telecommunications services' (e.g. voice telephony) and 'information services' (e.g. text messaging). Telecommunications services are regulated more heavily than information services.

⁹⁶ Source: [Communications Act of 1934: as amended by Telecom Act of 1996](https://transition.fcc.gov/Reports/1934new.pdf)
<https://transition.fcc.gov/Reports/1934new.pdf>

- 4.41 The US Congress has found that the 'Internet and other interactive computer services have flourished, to the benefit of all Americans, with a minimum of government regulation'.
- 4.42 Under US law, the policy of the US is 'to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation.'
- 4.43 While the United States has not experienced a complete internet shutdown, there have been instances where specific websites or online services have been temporarily restricted or blocked. These actions are usually taken for reasons related to national security or during periods of emergency.

M. Vanuatu⁹⁷

- 4.44 OTT is currently stimulating the increasing level of competition in the market and at the same time contributing to the social and economic development of Vanuatu. OTT provider is defined as a provider which offers information and communications Technology (ICT) services but does not operate a network or lease capacity from a network operator in Vanuatu. Rather, rely on the internet access with speed to be able to reach consumers, thus, going "over-the-top" of the telecom service provider's network.
- 4.45 Telecommunications Radiocommunications and Broadcasting Regulator (TRBR) regulates policies related to Telecommunications and Broadcasting in Vanuatu. TRBR is mandated to regulate and monitor the Telecommunications market in an efficient and transparent manner, however, any decision made must be evaluated based on the Regulatory Impact Assessment (RIA) importantly focusing on the cost and benefit of its intervention into the market.

⁹⁷ Source: https://www.trbr.vu/attachments/article/842/trbr_public_consultation_report_on_ott.pdf

4.46 The regulation of OTTs is relatively a new dimension for the Vanuatu regulatory environment and the TRBR is currently at the data-gathering stage to assess the impacts of these OTT services regulatory inventions to regulate OTT services may lead to unexpected outcomes including to lower network investments due to reduction in data revenue. More assessment is needed prior to any regulation to estimate the impact on the markets and to ensure regulatory principles of proportionate and minimal intervention are met.

N. Zimbabwe

4.47 In 2016, the Postal and Telecommunications Regulatory Authority of Zimbabwe (PORTRAZ) published a consultation paper⁹⁸ on OTT services with the following objectives:

- (i) Examine the impact of OTT VoIP services on stakeholders in the telecommunications industry
- (ii) Review and assess the current legislative provisions for the operating of OTT services in Zimbabwe
- (iii) Seek public feedback in order to come up with appropriate recommendations on the regulatory treatment of OTT services in Zimbabwe

4.48 The paper mentioned that the current regulatory framework did not provide for the licensing of OTT players and was limited in its regulatory oversight of services provided over the Internet. The fundamental difference between the OTTs and the network operators remained the ownership of the network. If OTT players were treated as providers of Application Services, they could be categorized as Application Service Providers under the proposed Converged Licensing Framework which was to be implemented soon. The proposed framework had the following license categories:

- (i) Network Facilities License (NFL)
- (ii) Network Services License (NSL)

⁹⁸ Source: https://www.potraz.gov.zw/wp-content/uploads/2016/01/Consultation_OTT.pdf

- (iii) Application Services license (ASL)
- (iv) Unified License
- (v) International Gateway(s) License

4.49 Under the proposed Converged Licensing Framework, the scope of the Application Services License is given as follows: *"The Application Services License shall allow the provision of electronic communication services to end-users such as Internet services, VoIP, messaging services, video conferencing, payphone mobile money among others. Under the same license, a licensee can offer as many application services as he/she can at no additional license fees. The Application Service License shall be issued as an Individual License or Class License".*

4.50 The proposed Application Services License had two classes as follows:

- (i) Application Service License Category A: Caters for Application Service Licensees who are also licensed to offer network services at national or international level. The license duration is 10 years for category A which will be issued as an Individual License with a scope to operate at international and national levels.
- (ii) Application Services Class license category B: This will be an electronic communication license entitling the holder who neither owns any network facilities nor operates any telecommunications network but leases capacity to provide one or more application services. Examples are internet service providers (ISPs), Mobile Virtual Network Operator (MVNO), Fixed Virtual Network Operator (FVNO), Value Added Services providers. The duration for this license will be 5 years.

4.51 The authorization of OTTs as Application Service Providers under the converged licensing framework will enable a proper regulatory framework to consider cases of revenue sharing. Such authorization should also incorporate concerns such as emergency services and provision of lawful interception amongst others. If local application providers will be licensed under the new Converged

Licensing Framework, international application providers should also be licensed.

4.52 The following chapter summarizes the issues for consultation.

CHAPTER IV
ISSUES FOR CONSULTATION

Stakeholders are requested to provide responses to the following questions with detailed justifications:

A. Issues Related to Regulatory Mechanism for OTT Communication Services

Q1: What should be the definition of over-the-top (OTT) services? Kindly provide a detailed response with justification.

Q2: 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.

Q3: 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.

Q4: 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.

Q5. 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.

Q6. 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.

Q7. 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.

Q8. 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.

Q9. 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.

B. Issues Related to Selective Banning of OTT Services

Q10. What are the technical challenges in selective banning of specific OTT services and websites in specific regions of the country for a specific period? Please elaborate your response and suggest technical solutions to mitigate the challenges.

Q11. Whether there is a need to put in place a regulatory framework for selective banning of OTT services under the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 or any other law, in force? Please provide a detailed response with justification.

Q12. In case it is decided to put in place a regulatory framework for selective banning of OTT services in the country, -

- (a) Which class(es) of OTT services should be covered under selective banning of OTT services? Please provide a detailed response with justification and illustrations.**
- (b) What should be the provisions and mechanism for such a regulatory framework? Kindly provide a detailed response with justification.**

Q13. Whether there is a need to selectively ban specific websites apart from OTT services to meet the purposes? If yes, which class(es) of websites should be included for this purpose? Kindly provide a detailed response with justification.

Q14. Are there any other relevant issues or suggestions related to regulatory mechanism for OTT communication services, and selective banning of OTT services? Please provide a detailed explanation and justification for any such concerns or suggestions.

DoT'S BACK REFERENCE DATED 07.07.2022

Government of India
Ministry of Communications
Department of Telecommunications
Networks & Technologies (NT) Wing

No. 12-30/NT/2015/OTT (Pt)

Dated: 07 Sept, 22

To,
The Secretary,
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan,
Jawaharlal Nehru Marg,
New Delhi-110002

Sub: Reference back on recommendations of TRAI on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' – regarding

This has reference to the recommendations of TRAI on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.09.2020. These recommendations have been considered by the Government and the following is submitted in this regard-

- i. Whereas TRAI has recommended that "*No regulatory interventions are required in respect of issues related with Privacy and security of OTT services at the moment*", it has not provided any detailed justification for recommending the same.
- ii. In view of the humongous growth of OTT services in the recent past and these services having reached a matured stage, there is a need to holistically look into the various aspects of these services including regulatory, economic, security, privacy and safety aspects. This is also in keeping with the para 2.2 of the National Digital Communications Policy-2018 which mentions about the policy goal for "*Ensuring a holistic and harmonized approach for harnessing Emerging Technologies*". It has been mentioned therein that a policy framework for 'Over The Top' services will be developed.
- iii. The above-said recommendations dated 14.09.2020 are based on the Consultation Paper of TRAI dated 12th November, 2018 on 'Regulatory Framework for Over-The-Top (OTT) Communication Services'. The consultation revolved mainly on the issue of imbalance between TSPs and OTT players providing services that can be regarded as same or similar to services offered by TSPs and issues relating to economic aspects of such OTT services. On the other hand, the Consultation Paper of 2015 titled 'Regulatory Framework for Over-The-Top (OTT) Service' focused on possible regulatory and licensing framework for OTT services along with related safety, security and privacy concerns in addition to Net Neutrality issues.
- iv. Further, recommendations dated 14.09.2020 are at variance to TRAI's earlier recommendations on Privacy, Security and Ownership of the Data in the Telecom Sector dated 16.07.2018 wherein it was concluded that "*since these entities are not governed by the license conditions, applicable for Telecom Service Providers, the need for regulation of*

these entities of the digital eco-system to ensure protection of consumers' privacy and data security is urgent and inescapable."

2. A kind reference is also invited to the recommendation no. 14 of the 26th report of the Parliament's Standing Committee on Communication and Information Technology on the subject 'Suspension of Telecom Services/Internet and its impact' (attached as Annexure-I), gist of which is as under-

The Committee strongly recommended that the Department urgently examine the recommendation of TRAI and come out with a policy which will enable the selective banning of OTT services with suitable technological intervention, such as Facebook, Whatsapp, Telegram services during period of unrest/crisis that are liable to be used by the terrorists or antinational element/forces to ferment trouble in the specified regions. The Committee look forward to positive development in this regard.

With respect to the abovementioned recommendation of the Parliament's Standing Committee, DoT replied that *it will explore the possibility of regulation of OTT services and banning the services on selective basis in consultation with TRAI, MeitY and MHA."*

3. In view of above, it is requested that TRAI may reconsider its recommendations on 'Regulatory Framework for Over-The-Top (OTT) Communication Services' dated 14.09.2020 and suggest a suitable regulatory mechanism for OTTs, including issues relating to "selective banning of OTT services" as part of its recommendations in accordance with the provisions of section 11 of TRAI Act 1997, as amended in 2000.

Encl. Annexure as above


(Dindyal Joshiwal)
DDG (NT)

Ministry of Communications /Department of Telecommunications

Selective Banning of Services

14. Keeping in view the fact that complete shutdown of telecom services/internet affects the people in many ways, the Committee desired to know if it was technically possible to shutdown only those services in areas likely to be used by terrorist/anti-social elements rather than shutting down internet as a whole. The Department have informed that services hosted on cloud are difficult to ban selectively since they operate from multiple locations in multiple countries and continuously shift from one service to the other. However, websites operating through fixed URLs can be banned. The Department have also informed the Committee that Facebook, WhatsApp, Telegram etc. are basically categorised as over the top telecom services, OTT services in short. These OTT services are riding over the existing telecom service provider's network. The Committee note that recently, Department of Telecom have received a recommendation from TRAI on the OTT services and one of the major recommendations of the TRAI is that currently these OTT services are not required to be regulated. DoT are examining the recommendation and will take an appropriate decision on the recommendations. DoT would be in a position to provide answer to the Committee once the decision is taken whether they would be able to block the OTT services selectively or not.

The Committee feel that it will be of great relief if the Department can explore the option of banning of selective services, such as Facebook, WhatsApp, Telegram, etc. instead of banning the internet as a whole. This will allow financial services, health, education and various other services to continue to operate for business as usual thereby minimizing inconvenience and suffering to the general public and also help in controlling spreading of misinformation during unrest. Adoption of such less restrictive mechanisms will be a welcome

initiative. The Committee strongly recommend that the Department urgently examine the recommendation of TRAI and come out with a policy which will enable the selective banning of OTT services with suitable technological intervention, such as Facebook, WhatsApp, Telegram services during period of unrest/crisis that are liable to be used by the terrorists or antinational element/forces to ferment trouble in the specified regions. The Committee look forward to positive development in this regard. Till such time every effort should be made to ensure that uninterrupted services are provided through the State broadband network which can be monitored easily for possible misuse.

Para 14 of 26th Report of the Standing Committee on Communications and Information Technology (17th Lok Sabha)

Action Taken

DoT will explore the possibility of regulation of OTT services and banning the services on selective basis in consultation with TRAI, MEITY and MHA.


Deputy Director General (Access Service)

Ministry of Communications (Department of Telecommunications)

O.M No. 800-15/2019-AS.II dated 25.02.2022

LIST OF ACRONYMS

S. No.	Acronym	Description
1	3GPP	Third Generation Partnership Project
2	ACCC	Australian Competition and Consumer Commission
3	AGR	Adjusted Gross Revenue
4	ARCEP	Electronic Communications, Postal and Print media distribution Regulatory Authority
5	ARPU	Average Revenue Per User
6	ASL	Application Services license
7	BEREC	Body of European Regulators for Electronic Communications
8	BTRC	Bangladesh Telecommunication Regulatory Commission
9	CAF	Customer Acquisition Form
10	CAGR	Compound Annual Growth Rate
11	CAPs	Content and Application Providers
12	CDMA	Code-Division Multiple Access
13	CDR	Call Detail Record
14	CLI	Calling Line Identification
15	CMRTS	Captive Mobile Radio Trunking Service
16	CPRF	Customer Preference Registration Facility
17	CTO	Commonwealth Telecommunication Organization

S. No.	Acronym	Description
18	CUG	Closed User Group
19	DWDM	Dense Wavelength Division Multiplexing
20	DoT	Department of Telecommunications
21	ECS	Electronic Communication Services
22	EDR	Exchange Detail Record
23	EECC	European Electronic Communications Code
24	ENISA	European Union Agency for Cybersecurity
25	ESPs	Electronic System Providers
26	ETNO	European Telecommunications Network Operator
27	EU	European Union
28	FBO	Facilities-Based Operators
29	FVNO	Fixed Virtual Network Operator
30	GATS	General Agreement on Trade of Services
31	GMPCS	Global Mobile Personal Communication by Satellite
32	GSM	Global System for Mobile communication
33	GSMA	Global System for Mobile communications Association
34	GST	Goods and Services Tax
35	HSPA	High Speed Packet Access
36	Https	Hypertext Transfer Protocol Secure

S. No.	Acronym	Description
37	ICT	Information and Communications Technology
38	ICTA	Information and Communication Technologies Authority
39	IFMC	In Flight and Maritime Connectivity
40	ILD	International Long Distance
41	ILDTS	International Long-Distance Telecommunications Services
42	IMDA	Infocomm Media Development Authority, Singapore
43	IoT	Internet of Things
44	IP	Internet Protocol
45	IPDR	IP Detail Record
46	IPTSP	Internet Protocol Telephony Service Provider
47	ISP	Internet service provider
48	IT	Information Technology
49	ILD	International Long Distance
50	ITU	International Telecommunication Union
51	ITU-D	ITU Telecommunication Development Sector
52	LTE	Long Term Evolution
53	M2M	Machine to Machine
54	MeitY	Ministry of Electronics and Information Technology
55	MHA	Ministry of Home Affairs

S. No.	Acronym	Description
56	MIMO	Multiple Input Multiple Output
57	MMS	Multimedia Messaging Services
58	MNO	Mobile Network Operator
59	MNP	Mobile Number Portability
60	MOCI	Ministry of Communication, and Informatics of the Republic of Indonesia
61	MoU	Minutes of Usage
62	MTTR	Mean Time to Restore
63	MVNO	Mobile Virtual Network Operator
64	NB-ICS	Number-Based Interpersonal Communication Services
65	NDCP	National Digital Communication Policy
66	NFL	Network Facilities License
67	NIA	Notice Inviting Applications
68	NI-ICS	Number-Independent Interpersonal Communication Services
69	NLD	National Long Distance
70	NRA	National Regulatory Authorities
71	NSL	Network Services License
72	OECD	Organisation for Economic Co-operation and Development
73	Ofcom	Office of Communications
74	OSS	Online Single Submission

S. No.	Acronym	Description
75	OTT	Over-The-Top
76	PLMN	Public Land Mobile Network
77	PMRTS	Public Mobile Radio Trunking Service
78	PORTRAZ	Postal and Telecommunications Regulatory Authority of Zimbabwe
79	PSTN	Public Switched Telephone Network
80	QE	Quarter Ending
81	QoS	Quality of Service
82	RIA	Regulatory Impact Assessment
83	SBO	Service-Based Operators
84	SMS	Short Messaging Service
85	SPDI	Sensitive Personal Data or Information
86	SPNP	Sending Party Network Pays
87	TATT	Telecommunications Authority of Trinidad and Tobago
88	TCCCPR	Telecom Commercial Communication Customer Preference Regulations
89	TKG	Austrian Telecommunications Act
90	TRAI	Telecom Regulatory Authority of India
91	TRBR	Telecommunications Radiocommunications and Broadcasting Regulator, Vanuatu
92	TSP	Telecom Service Provider
93	UCC	Unsolicited Customer Communication

S. No.	Acronym	Description
94	UL	Unified License
95	URL	Uniform Resource Locator
96	USD	U.S. Dollar
97	USO	Universal Service Obligation
98	USOF	Universal Service Obligation Fund
99	VoIP	Voice over Internet Protocol
100	VSAT	Very Small Aperture Terminal
101	WCDMA	Wideband Code Division Multiple Access
102	WCIT	World Conference on International Telecommunications
103	WTO	World Trade Organization