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RESEARCH REPORT

CONVERGENCE OF INTERNET AND TELECOM SERVICES

Assessing the Impact on Digital Ecosystem

Research Report

Convergence of Internet and Telecom Services:

Assessing the Impact on Digital Ecosystem

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FOREWORD

With the increasing upwards trajectory of India's digital economy, the country has undertaken a journey to bring significant regulatory reforms in the technology sector.

Over the course of the last few years, several regulations have either been proposed or implemented which seek to regulate internet businesses in one form or the other. Amongst these, the Draft Indian Telecommunications Bill 2022 has been one of the most significant frameworks which aims to bring reforms in the telecommunication sector by bridging the existing gaps in the telecom regulations through progressive policymaking.

Forging ahead, the Telecommunications Bill entails numerous reformatory provisions for the telecom sector which will immensely help the telecom industry. However, I believe that it is imperative for citizens and relevant stakeholders to interact with the policymakers during the initial stages of lawmaking as there is always a need for an extensive consultative process. Ergo, I want to congratulate The Dialogue for this timely report on 'Convergence of Internet and Telecom Services: Assessing the Impact on the Digital Ecosystem'. The report discusses the impact that the Draft Indian Telecommunications Bill, 2022 and the TRAI's consultation paper on the convergence of digital technologies will have on the internet ecosystem. The suggestions of this report should be given thoughtful consideration.

Lastly, the Dialogue has been at the forefront of driving constructive tech policy debates based on evidence and research, and I am confident that this report will help in removing doubts engulfing all the debates around the telecom sector and the digital economy.

With warm regards,

Yours faithfully,

(Pratap Rao Jadhav)

Acknowledgement

The authors would like to express our sincere gratitude to the participants of our focus group discussions for offering us their time and resources in collecting inputs for the response. We conducted two Focus Group Discussions and individual interviews with key stakeholders in the digital ecosystem and obtained extensive inputs from in total 20 stakeholders.

We would like to thank Shruti Shreya and Kamesh Shekar, Programme Managers, The Dialogue for their valuable comments and continued guidance and support towards completing this research. We also extend our gratitude to Akriti Jayant for providing copyediting support and Diksha Kumari for her design support for the report. Further, we also like to thank Suha Raffi and Mohammad Zayaan Ravouf Asimi, interns at The Dialogue, for their assistance in this report.

Research Methodology

The study adopted a two-pronged approach in terms of methodology involving both secondary research and primary research.

For the secondary research, the team undertook a detailed meta-analytic literature review to understand the key issues involved in the convergence of internet and telecom services, the implication of network usage fee on the digital ecosystem and global landscape on the issues involved.

For primary research, the team conducted two focus group discussions and individual interviews with key stakeholders in the ecosystem. We received in total 20 inputs from stakeholders with diverse backgrounds, including academia, industry and civil society organisations. These interviews helped garner insights from the digital ecosystem on issues relating to the Draft Indian Telecommunications Bill 2023 and its impact on digital ecosystem.

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Executive Summary

India is potentially advancing towards consolidated regulation of telecom and internet services, endeavouring to introduce a licensing regime for internet services. The Draft Indian Telecommunications Bill, 2022 and Telecom Regulatory Authority of India's recent consultation paper on Regulating Converged Digital Technologies echo this intent. However, this approach raises concerns about the potential impact on innovation, barriers to entry, and jurisdictional overlaps. Interestingly, it also delves into the cost-sharing debate, also known as network usage fee, wherein OTTs might be asked to pay network usage fees.

Broad Definitions: Clarification Required

The proposed "telecommunication services" in the bill definition is alarmingly broad, potentially encompassing a range of internet-based services that may not have been intended. With the absence of clear definitions of key terms, the risk of regulatory arbitrage looms large. Notably, internet-based services, already regulated under the Information Technology Act, 2000 (IT Act), could face unnecessary over-regulation.

Potential Impact of Licensing Regime

A licensing regime, while organised, could stifle innovation by imposing high compliance costs, thereby impeding the growth of start-ups. Given the rapid evolution of Over-The-Top (OTT) services, a static regulatory regime could severely hamper progress in this dynamic field.

Interception of Messages: A Privacy Concern

The Draft Indian Telecommunications Bill's replication of the Indian Telegraph Act's power to intercept messages, now extended to end-to-end encrypted OTT communication service platforms, raises privacy concerns. Without a comprehensive interception law providing necessary safeguards, the expanded scope risks infringing individual privacy rights, particularly concerning end-to-end encrypted messaging services.

Network Usage Fee: Hindrance to Internet Services

Imposing a network usage fee would severely impact the operational costs of entities and pose a potential threat to net neutrality principles. Moreover, it would have adverse effects on the startup ecosystem, creating barriers to entry. Additionally, consumers would also bear the brunt of this fee as it would be passed on to them. In addition, global case studies such as South Korea's Sender Party Network Pays Model showcase the negative implication of cost sharing, where the Model received heavy criticism and led to high cost and decreased quality for consumers.

The proposed regulations, while aimed at fostering a secure and accountable internet, could also inadvertently deter innovation and impact the ease of doing business. Therefore, rather than converged regulation, a harmonised approach with coordinated efforts among Telecom Regulatory Authority of India, Department of Telecommunications, Ministry of Information and Broadcasting, and Ministry of Electronics and Information Technology could be a more viable path to a secure, accountable internet landscape. Further, there is also a need to reassess the magnitude of regulations on TSPs, instead of increasing regulations on OTTs, to bring about regulatory parity.

Abbreviations

Hon'ble	Honourable
B2B	Business to business
BEREC	Body of European Regulators for Electronic Communications
CAP	Content and Application Provider
CDN	Content Delivery Network
CERT-In	Indian Computer Emergency Response Team
CRTC	Canadian Radio-television and Telecommunications Commission
DoT	Department of Telecommunications
DSL	Digital Subscriber Line
DWDM	Dense Wavelength-Division Multiplexing
E-commerce	Electronic Commerce
ECS	Electronic Communication Services
Ed-Tech	Education Technology
ENISA	European Union Agency for Cybersecurity
ETNO	European Telecommunications Network Operators Association
EU	European Union
FCC	Federal Communications Commission
FTTH	Fiber To The Home
FTTP	Fiber To The Premises
GB	Gigabyte
HFC	Hybrid fiber-coaxial
ICT	Information and Communication Technologies
IMDA	Info-Communications Media Development Authority
IP	Internet Protocol
ISP	Internet Service Providers
IT	Information Technology
ITU	International Telecommunications Union
MAC	Media Access Control

MeitY	Ministry of Electronics and Information Technology
MEP	Member of the European Parliament
MIB	Ministry of Information and Broadcasting
MVNO	Mobile Virtual Network Operators
NITA	National Telecommunications and Information Administration
NSA	National Security Agency of the United States
OECD	Organisation for Economic Co-operation and Development
Ors.	Others
OSI	Open Systems Interconnection
OTT	Over-the-top
PSTN	Public Switched Telephone Network
RIL	Reliance Industries Ltd
SBO	Services Based Operations
SMS	Short Message Service
SPNP	Sending Party Network Pays
SPP	Sharing Payment Patterns
SSMI	Significant Social Media Intermediary
TRAI	Telecom Regulatory Authority of India
TSP	Telecommunication Service Providers
UK	United Kingdom
US	United States
USD	United States Dollar
USF	Universal Service Fund
v	Versus
VLAN	Virtual Local Area Network
VoIP	Voice over-internet protocol
vs	Versus

1. Introduction

The digital economy is vital to India's vision of becoming a trillion-dollar economy. A free and open internet, fostering opportunities for new market entrants and enabling innovation hold significant importance in this Techade, as envisioned by Hon'ble Prime Minister Shri Narendra Modi. It is essential to enable innovation and growth of the internet through supportive policymaking to achieve the larger goal of Digital India.

Over the course of last year, there has been an on-and-off push towards regulating telecom and internet services together. In 2022, the Department of Telecommunications (**DoT**) published the Draft Indian Telecommunication Bill, 2022 (**Draft Bill**), which seeks to regulate internet services within the ambit of telecom regulation, was published for public consultation. The Draft Bill entailed significant reforms to the telecommunication sector, such as provisions relating to providing relief to the entities in case of default payments, creating a regulatory sandbox, simplifying the framework for mergers and acquisitions, and providing clarity for operations during insolvency proceedings that will immensely help the telecom industry. However, it also expanded the ambit of telecommunication services to include over-the-top (**OTT**) communication services as well. It also does not consider that the internet and telecom fundamentally differ on structural, functional and operational levels.

Further, in another effort, the Telecom Regulatory Authority of India (**TRAI**) in January 2023 released a consultation paper titled "*Regulating Converged Digital Technologies and Services - Enabling Convergence of Carriage of Broadcasting and Telecommunication Services*" (**Consultation Paper**), which explored the need for regulation for converged digital technologies of telecom and broadcasting services. The consultation paper essentially sought to bring licensing of internet services at par with telecom and broadcasting services and under a single regulator, i.e. TRAI.

In this study, we deep dive into the nuances of the Draft Bill, assess TRAI's role as a regulator of converged technologies and analyse it from the lens of the impact on the digital ecosystem. The second chapter deals with the definition of telecommunication services under the Draft Bill and argues that it is broad and ambiguous. The third chapter provides perspective on how the internet and telecom services are fundamentally distinct in structural, technical and functional aspects. The fourth chapter of this study deals with the impact of licensing regime on the startup ecosystem and how this bill, in its current form, will be a case of over and excessive regulation. The fifth chapter delves into the impact of this regulation on encrypted services. The sixth chapter delves into the network usage fee debate and its implication on the digital ecosystem. This chapter looks into other jurisdictions and how their regulations have panned out. Lastly, the seventh chapter takes a tour of other major jurisdictions and assesses how they treat the convergence of technologies.

2. Relooking at the Definition of Telecommunication Services

Clause 2(21) of the Draft Bill defines telecommunication services as

“telecommunication services” means service of any description (including broadcasting services, electronic mail, voice mail, voice, video and data communication services, audiotex services, videotex services, fixed and mobile services, internet and broadband services, satellite-based communication services, internet-based communication services, in-flight and maritime connectivity services, interpersonal communications services, machine to machine communication services, over-the-top (OTT) communication services which is made available to users by telecommunication and includes any other service that the Central Government may notify to be telecommunication services”

The definition of telecommunication services under the Draft Bill is broad and covers a wide range of internet communication-based services that are not typically part of the telecommunications ecosystem. This definition can cover any internet-based service that uses communication as one of its tools.

Further, reading the definitions of ‘messages’ and ‘telecommunication’ together may be interpreted broadly to include all messages using telecommunication or transferred via the internet. For instance, notification messages within an app (i.e., in-app notifications/pop-up notifications) should not be treated from the scope of ‘specified message’ defined under clause 33 of the Draft Bill. As the term ‘specified messages’ is broadly worded, it is possible that such communications could include internal app-based notifications.

Moreover, the Draft Bill does not elaborate on some key terms included in clause 2(21), which defines “telecommunication services”. For instance - the definition of OTT communication services, data communication services, internet-based communication services, interpersonal communication services and machine-to-machine communication services. Theoretically, OTT communication services can include all online services such as OTT communication, OTT media, e-commerce platforms, Internet Cloud Services, social media, web content, online gaming etc. If this status is maintained, then anything and everything where communication is one of the tools in an application can be included under this definition.

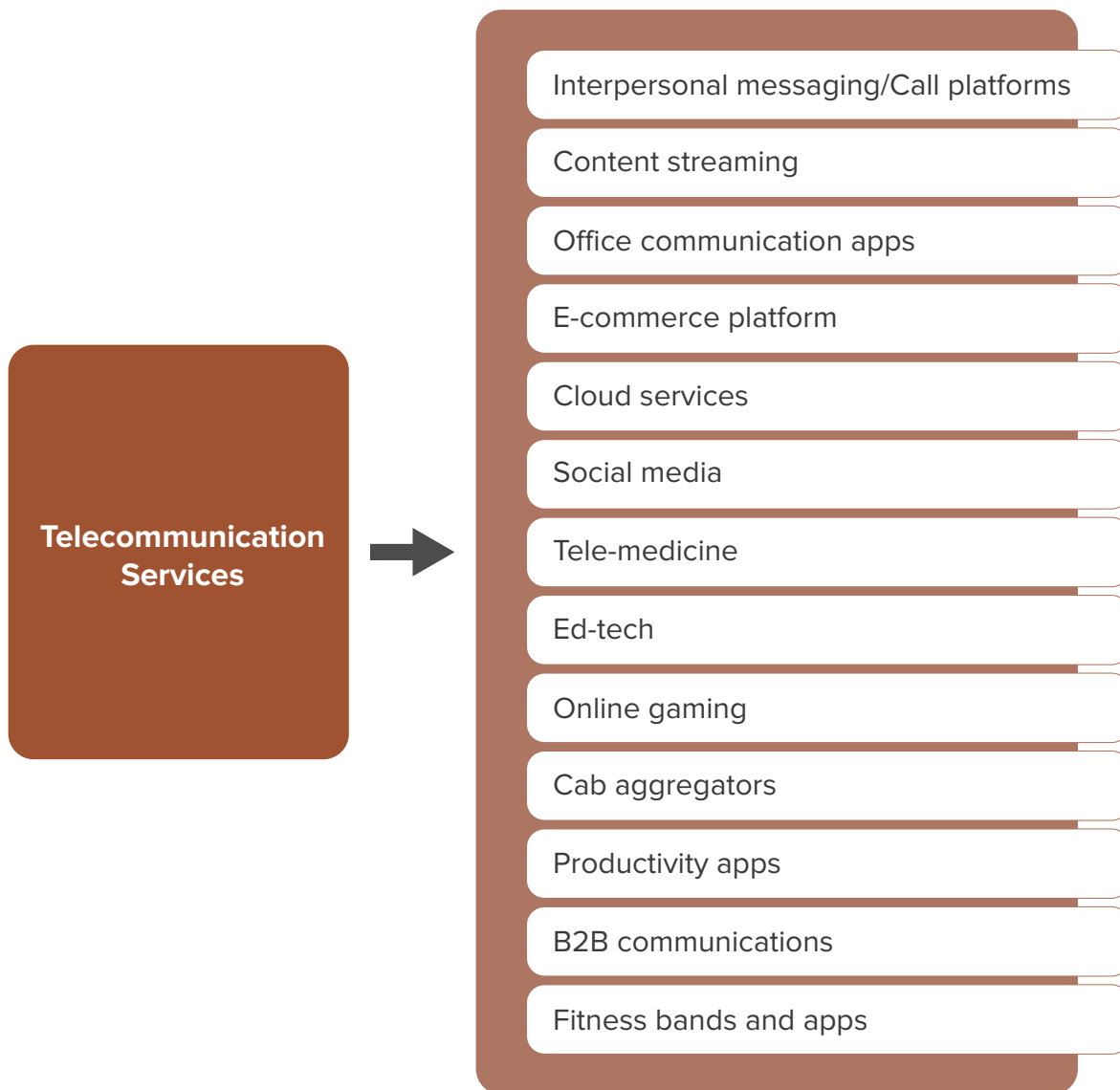


Fig.1: Indicative list of Business models covered under the definition of Telecommunication Services

3. Case for Distinct Regulation of Internet and Telecom Services

3.1. Spectrum is a natural resource, while the Internet is not

Telecom and Internet services are fundamentally distinct. The rationale behind regulating Telecommunication Service Providers (TSPs) through licensing requirements is based on economic grounds and the scarcity of spectrum as a resource. Thus, ensuring a fair allocation of scarce resources, and preventing any social harm that may arise from their misuse in the form of private benefit are the primary grounds for spectrum regulation. The Supreme Court of India has, over a long period of time, across judgments such as the *Ministry of Information and Broadcasting v Cricket Association of Bengal and Ors (1995)*¹, *Union of India v. Centre for Public Interest Litigation (2012)*², and *Bharti Airtel v Union of India (2015)*³ maintained that spectrum is a valuable and scarce resource that degrades when not used efficiently. For these reasons, a licensing regime is implemented in spectrum allocation as it enables the government to monitor spectrum usage and intervene when necessary.

Article 39(b) of the Indian Constitution provides that the State needs to direct its policy towards ensuring the ownership and control of the material resources of the community are distributed to subserve the common good. In the context of telecommunications, the 'material resources' of the community are the spectrum and associated services that enable the distribution of this resource, such as internet and broadband services.

However, services that run at the application layers over these distribution services, such as internet-based services, cannot be considered as a resource or service which is owned and controlled by the Central Government or that the Central Government has exclusive privileges over, because, in essence, these do not constitute as a natural resource, but are services which are provided utilising the services that distribute spectrum. While spectrum is a natural resource, internet services which work on the application layer are not as (a) there is no scarcity as it is, to an extent, non-rivalrous, and (b) there is a market where private players are already competing at the application layers.

¹*Ministry of Information and Broadcasting v Cricket Association of Bengal and Ors, AIR 1995 SC 1236*

²*Centre for Public Interest Litigation and Ors. v Union of India, (2012) 3 SCC 1*

³*Bharti Airtel v Union of India (2015) 12 SCC 1.*

3.2. Same Service, Same Rules Argument is not Applicable

Often, the argument of “same service, same rules” has been raised⁴, claiming that there is a lack of a level playing field between telecom and OTT communication services as the OTTs are not subjected to similar levels of regulation even though their services are similar to that of telecom. **This argument lacks merit as these two services are not substitutable.**

Telecommunications services and services based on internet protocols are so different that they could barely be considered competing “substitutes”. For example, in the case of SMS vs internet messaging apps, it must be noted that the business models of these two services are different (consumption vs. service/advertisement); their technology is different; the barrier of entry to the market is different, and their degree of availability to the public is different. For example - there are messaging platforms that are open for everyone to use, while others are closed or exclusive. Not having access to one of them does not impact the right to communication, while not having access to SMS leaves the user with no available substitutes. **Services provided by OTTs are heavily dependent on data and voice services that are offered by the TSPs. Therefore, while TSPs can exist without OTTs, it is not possible for OTT services to provide their services in the absence of TSPs.** As enumerated below, the two services have an inherent structural, technical and functional difference.

3.3. Structural and Technical Differences between Telecom and OTT Services

OTT service providers and TSPs function on fundamentally different technical foundations. Communication data through OTTs is delivered in the form of data packets based on the best-effort delivery model, with no dedicated end-to-end channel being established for the duration of the communication. This starkly contrasts traditional voice services offered by TSPs, which function atop circuit-switched Public Switched Telephone Network (**PSTN**) architectures, where dedicated communication channels are established between devices for the duration of the communication.⁵ Digital platforms and services deliver instant messaging data over IP networks as opposed to traditional SMS services, which utilise dedicated infrastructures involving short message centres, Short message entities and SMS gateways. At the same time, most TSPs already provide online services and network access. There are numerous examples available in the public domain where TSPs have ventured into the online streaming platforms. Therefore, while TSPs can operate in network and application layers, internet companies are restricted to only the application layer.

In the Open Systems Interconnection (**OSI**) seven-layer model, a model used to standardise the functions of telecommunication and computing systems around the world, all seven layers work in tandem with one another to deliver content over the internet. Layer 3 works atop Layer 2,

⁴PTI (2022 October 26) COAI Roots For ‘Same Service, Same Rules’ For Parity With OTT Communication Services, Outlook India. Retrieved on May 20, 2023 from <https://www.outlookindia.com/business/coai-roots-for-same-service-same-rules-for-parity-with-ott-communication-services-news-232550>

⁵Ikigai Law (2019 August 6) ‘Over-The-Top’ And ‘Telecom’ Services – Similar Or Not? - Our Analysis Of Stakeholders’ Responses To Trai Consultation Paper. Retrieved on November 15, 2022, from https://www.ikigailaw.com/wp-content/uploads/2019/08/Final_Blog_OTT-services_060819.pdf See also Our Submission to TRAI’s “Consultation Paper on Regulatory Framework for OverThe-Top (OTT) Communication Services” at https://www.trai.gov.in/sites/default/files/TheDialogue0801201_.pdf

which works atop Layer 1 and so on.⁶ OTT service providers function only on Layers 7 and 6, while the other layers are controlled by TSPs and Internet Service Providers (ISPs). In the case of OTT service providers, bits are transferred over various mediums, cables, ports, etc. Frames are used to define the data between two nodes on a data link, and when there are more than two nodes, the network helps address route and control traffic. The OSI model is a simple way to understand the hierarchy of layers, where layer 3 works with IP addresses, and layer 2 works with Media Access Control (MAC) addresses. For example, a house address is always the same, like a MAC address, while an IP address can change, like the addressee at the house.

Much like the difference between Layer 3 and Layer 2 in the OSI model, the routing function is the main difference between a Layer 2 switch and a Layer 3 switch. A Layer 2 switch only works with MAC addresses and doesn't interact with any higher layer addresses, such as an IP. A Layer 3 switch, on the other hand, can also do static and dynamic routing, including IP and virtual local area network (VLAN) communications. This dual-layer functionality is why a Layer 3 switch is also known as a multilayer switch.⁷

	Function	Data Unit
Application Layer 7	Human-Computer Interaction through applications that access network services	Message/data
Presentation Layer 6	Data formatting and encryption/decryption	Message/data
Session Layer 5	Inter-host communication	Message/data
Transport Layer 4	Data Transmission	TCP: segment; UDP: datagram;
Network Layer 3	Path determination and logical addressing	Packet, datagram
Data Link Layer 2	Physical addressing	Frame, cell
Physical Layer 1	Binary signal transmission over physical media	Bit, frame

Fig. 2: Open System Interconnection Model

⁶O’Keefe, A. (2022, May 16) *OSI layers: Everything you need to know*, Aussie Broadband. Retrieved on October 13, 2022, from <https://www.aussiebroadband.com.au/blog/osi-layers-everything-you-need-to-know/>

⁷O’Keefe, A. (2018, October 20) *The difference between Layer 3 and Layer 2 networks*, Aussie Broadband. Retrieved on October 13, 2022, from [https://www.aussiebroadband.com.au/blog/difference-layer-3-layer-2-networks/#:~:text=A%20ayer%20%20switch%20only,area%20network%20\(VLAN\)%20communications.](https://www.aussiebroadband.com.au/blog/difference-layer-3-layer-2-networks/#:~:text=A%20ayer%20%20switch%20only,area%20network%20(VLAN)%20communications.)

OTT service providers only cover the topmost layers, while control over the rest is in the hands of the TSP or ISP, highlighting how little control or decision-making power OTT service providers have over the ecosystem. In such a model, TSPs and ISPs have adequate powers to control data prices, service areas, and service offerings, all within the ambit of net neutrality that can have a tangible impact on OTT service providers.

Additionally, OTT service providers do not make use of the scarce public resource (spectrum) and do not provide access to a network, so the need for a licensing regime does not arise. As regards to the quality of service, OTTs cannot deliver their services independently of the network provided by TSPs. It is TSPs which act as gatekeepers of the internet, and the quality of service delivered by an OTT platform depends most often on the quality of the underlying network.⁸

The TRAI, in its recommendations on the Regulatory Framework for Internet Telephony in 2017 (Internet Telephony Recommendations), also emphasised that the separation of network and service layers of telecom service offerings is the natural progression of the technological changes in this domain. The same trend needs to be reflected in the regulations for such networks and service layers for OTT communication service providers. Therefore, the question should be limited to whether there is parity in the treatment of TSPs and OTT communication service providers only to the extent of services provided by them.⁹

These technical differences demonstrate that OTT service providers are not substitutes for TSPs and the traditional telecommunications infrastructure. OTT service providers rely on TSPs to drive data consumption and increase revenues. This can be easily understood through an assertion: OTTs need stable internet access. If such access is disrupted, the OTT platform ceases to work, establishing the existential reliance of OTT service providers on infrastructure controlled and maintained by TSPs.

3.4. Functional Differences

Services offered by OTTs and TSPs are distinct in nature. While there is overlap in the communication services on aspects such as calling and instant messaging, OTT service providers add multiple utility functions such as sharing files or media, and in certain 'super apps', multiple services, typically out of the domain of an OTT communications services provider are also bundled. The bundling of services that differentiate OTT service providers from traditional TSPs is a fundamental milestone for OTT service providers, as bundling of features is an important step in the organic progression of any OTT service provider.

⁸Asia Internet Coalition(2018, December 28) *Submission on the Consultation Paper on Regulatory Framework for Over-The-Top (OTT) Communication Services in India*. Retrieved on October 13, 2022, from <https://traf.gov.in/sites/default/files/AsiaInternetCoalition08012019.pdf>

⁹TRAI (2017, October 24) *Recommendations On Regulatory Framework for Internet Telephony*. Retrieved on October 15, 2022, from https://traf.gov.in/sites/default/files/eommendations_24_10_2017_0.pdf

To suggest that there is a natural parity or similarity between OTT players and TSPs is also erroneous. The latter enjoy several exclusive rights conferred on them through their licences not enjoyed by online services, such as the right to acquire spectrum, the right to obtain numbering resources, the right to interconnect with the PSTN and the right of way to set up infrastructure. On the other hand, no exclusive privilege is granted to OTT players. Further, since there are no entry barriers for providing OTT services, even TSPs can enter the OTT market without any licence. In contrast, OTTs cannot enter the TSP market without a licence. While TSPs can operate in both the network and application layers, OTTs are restricted to the application layer and cannot enter the network layer.¹⁰ OTT provides rich interactions beyond text and voice communication on the application layer, and that's the innovation which should not be curbed.

This is a distinction that arises not from service providers but from consumers themselves. Further, any difference between OTT communication services and other OTT services is artificial, as most OTT services tend to develop platform characteristics that incorporate communication as only one aspect of the wider service provided. As a result, asking for regulatory parity on the basis of the "same service, same rules" argument is incorrect and does not justify a higher regulatory burden on OTT players.

¹⁰Broadband India Foundation (2017 April 27) *Counter Comments from BIF on TRAI consultation paper on Net Neutrality*. Retrieved on October 13, 2022, from https://traai.gov.in/sites/default/files/BIF_27_04_17.pdf

4. Impact of Licensing on OTT services

The creation of a licensing regime for providers of OTT communication services has been a consistent demand of traditional telecom service providers. TSPs also argue that the increasing use of OTT communication service providers by users has led them to suffer from loss of revenue due to loss of market share. There is also no clarity on whether there will be a distinct licensing regime for TSPs and OTT communication services in the Draft Bill. Because if they are considered the same, then OTTs will also be able to acquire spectrum, and if there are distinct agreements, then these two services cannot be considered substitutable.

A licensing regime does not account for the fact that OTT services are often subject to rapid and evolving technological developments. Such a regime can adversely impact the internet-based services industry as their inherent nature and growth are systemically intertwined with incorporating cutting-edge technological advancements to sustain their business. A licensing regime will stifle the growth of existing services proposed to be brought under the ambit of “telecommunication services”. It will undoubtedly increase entry barriers for new players and impact the growth curve of an emerging sector. It would bring additional compliance burdens and associated costs, putting immense pressure on the startups.

If a licensing regime is proposed for internet-based services, they will also have to pay an entry fee, periodic licence renewal charges and other costs. Any internet-based services also have to comply with the Information Technology Act and other sectoral laws. Adding another licence or registration process would raise entry barriers and significantly impact the ease of doing business. It needs to be kept in mind that the Indian government has recognised this sector as crucial for propelling India into the next phase of its growth.

4.1. Overlaps of Jurisdiction

Apart from the fundamentally distinct nature of these two services, another important reason for recommending the exclusion of internet-based services from the ambit is that they are already regulated by the Information Technology Act, 2000 (**IT Act**). Under the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 (**IT Rules**), internet-based services are subject to dedicated compliance and reporting requirements. **Additional regulation on similar subject matter from different government departments/regulators would lead to regulatory arbitrage and overlapping jurisdiction.**

The introduction of a licensing regime may qualify as an act of over-regulation on internet services and not only increase compliance but introduce an overwhelming financial burden. This could hamper innovation and consumer choice.

OTT service providers are already subject to existing laws governing interception, privacy, cybersecurity, etc., under the IT Act and its rules (such as the Information Technology (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009, the Information Technology (the Indian Computer Emergency Response Team and Manner of Performing Functions and Duties) Rules, 2013, CERT-In Directions 2022¹¹, and the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021. They will also be subject to the compliance burden under upcoming data protection law and the possible Digital India Act that the Government considers a more rigorous replacement for the IT Act. Similarly, broadcasting services are already subject to various legislations such as the Cable Television Networks (Regulation) Act, 1995 and rules thereunder, administered by the Ministry of Information and Broadcasting.

Overlaps between Draft Bill and other laws

S.NO.	Existing and Proposed Legislations	Existing Provisions	Overlaps with Telecom Bill
1	Information Technology (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009,	Rule 3 enables a government official to order the interception, monitoring or decryption of any information generated or transmitted over a computer resource	Clause 24(2)(a) of the Draft telecom bill empowers authorised government officials to intercept, detain or seek disclosure of a message or a class of messages in the interest of public order and national sovereignty. Due to the broad definition of 'telecommunication services' this applies to all common messaging platforms and a host of other online communication services.
2	Emergency Response Team and Manner of Performing Functions and Duties) Rules, 2013	CERT-IN's resource allocation in cases of cyber security incidents.	Clause 25 enables the Central government to take control of telecommunication infrastructure, or telecommunications services and prescribe standards, or procure necessary infrastructure take control of telecommunication

¹¹Directions under sub-section (6) of section 70B of the Information Technology Act, 2000 relating to information security practices, procedure, prevention, response and reporting of cyber incidents for Safe & Trusted Internet, issued by the Indian Computer Emergency Response Team dated April 28, 2022.

S.NO.	Existing and Proposed Legislations	Existing Provisions	Overlaps with Telecom Bill
			infrastructure, or telecommunications services and prescribe standards, or procure necessary infrastructure or even allocate all these powers to another government authority in cases of war or in the interest of national security.
3	Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021	Rule 4(2) mandates Significant Social Media Intermediaries ('SSMIs') to enable the identification of the 'first originator' of a message within the Indian territory.	Clause 24(2)(a) empowers the central government to seek disclosure of a class of messages or a message in the interest of national security. While the clause does not mention 'originator' of the message, in essence it allows the central government to seek disclosure of the contents and parties involved in the message chain.

In 2020, TRAI observed that a comprehensive regulatory framework for OTT services is not recommended beyond the existing laws and regulations. It was of the opinion that such regulation could be looked into afresh when more clarity emerges in international jurisdictions. Bringing internet communication services within the regulatory ambit of DoT would not only subject such services to onerous licence terms and conditions but would also include a levy of entry fees, licence fees and registration fees.

4.2. TRAI as a Regulator of Converged Technologies

The TRAI does not currently host regulatory experts that may be able to shoulder the responsibility of specialised regulation. Therefore, added responsibility of digital sector will only increase the burden upon TRAI when considering enforcement, all while presenting no tangible benefits for the stakeholders involved. TRAI's consultation paper on converged technologies states that their power is limited only to prescribing and monitoring quality benchmarks, interconnect rules and pricing of services. It also states that it merely has recommendatory powers in critical areas like

licensing administration, spectrum management etc., and areas like content regulation remain out of its purview.¹² Thus, it isn't equipped with the requisite powers under the TRAI Act of 1997 in order to effectively regulate the proposed expansive regulatory ambit.

The consultation paper on convergence also attaches a letter by the Ministry of Information & Broadcasting where they have objected to the TRAI's proposal of an expanded regulatory ambit, stating, "*Regulation of content requires separate skill sets of creative and artistic persons than that of technocrats or economists who can factor the impact of content on sensibilities, morals and (the) value system of the society. Hence, content policy and regulation should also continue with the MIB*".¹³ The letter further reads, "need of the hour is not to bring in further disturbances but to re-engineer business processes such that there is ease and convenience of doing business for these entities", establishing MIB's grievances with the proposed changes through convergence.

Additionally, the MIB noted in their letter to TRAI that convergence of licensing and administrative obligations in the broadcasting sector is being enabled through a unified portal, 'Broadcast Seva Portal', as they believe such a move entails a bare minimum change of essential nature and aim to provide a smooth transition.

The Consultation paper of TRAI comes to its recommendations by citing other jurisdictions where the carriage and content are regulated by a unified regulator, such as the US, EU, UK, etc. However, the consultation paper does not present adequate policy impetus or delve into whether these models have been successful in their respective countries to actualise similar policy goals in India. Further, a superimposition of a foreign jurisdiction's experiences and policy objectives onto our domestic regulatory landscape may not yield expected outcomes as the underlying stakeholders may have varied expectations from the overarching regulatory norms. Additionally, it can be recommended that the telecom and OTT sectors collaborate in line with the International Telecommunications Union's (ITU) recommendations instead of being separated and made to compete with each other.¹⁴

It is also imperative to note that a converged policy may not benefit all stakeholders as envisioned by the consultation paper as at present, the TRAI does not have the necessary statutory powers to regulate the expanded scope effectively. A move towards consolidating all regulatory powers onto one regulator may also hamper progress in the sector while failing to balance out these concerns with benefits adequately. Additionally, a myriad of other overlaps concerning competition and data privacy also exist prominently across the sector and have established regulators and regulatory norms that may cause undue disruptions in the market if tweaked unjustly.

¹²TRAI (2023) Consultation Paper on Regulating Converged Digital Technologies and Services: Enabling Convergence of Carriage of Broadcasting and Telecommunications Services . Available at - https://www.traigov.in/sites/default/files/CP_30012023.pdf

¹³Consultation Paper on Regulating Converged Digital Technologies and Services: Enabling Convergence of Carriage of Broadcasting and Telecommunications Services, TRAI (2023), Pg. 142 https://www.traigov.in/sites/default/files/CP_30012023.pdf

¹⁴ITU-T (2019 May 2) *Collaborative framework for OTTs*. Retrieved on October 14, 2022, from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13595>

5. Interception of Encrypted Services

Clause 24 of the Draft Indian Telecommunications Bill, 2022 replicates Section 5 of the Telegraph Act, 1885, granting central and state governments the authority to intercept messages. This provision encompasses all telecommunication services, including interpersonal and OTT communication, which will adversely affect encryption-based services such as end-to-end encrypted interpersonal communication apps. It presented a favorable opportunity for the government to establish comprehensive interception and surveillance laws with essential safeguards and checks on executive power.¹⁵ However, contradicting expectations, the bill broadens the scope of interception to internet-based communications.

5.1. Impact on End-to-End Encryption

The definition of telecommunication services now encompasses internet-based communication services, as stated earlier. This expansion, outlined in Clause 2(21) of the new bill, raises concerns. It includes voice mails, video and data transmissions, and other internet-based communication services, redefining “telegraph.” Consequently, state actors would gain the ability to intercept information transmitted through encrypted messaging services, voice-over-IP providers, video telephony software, and similar platforms. This provision poses a threat to communication businesses that prioritise privacy safeguards and privacy-preserving technology, with consumer protection as a core aspect of their business model.¹⁶

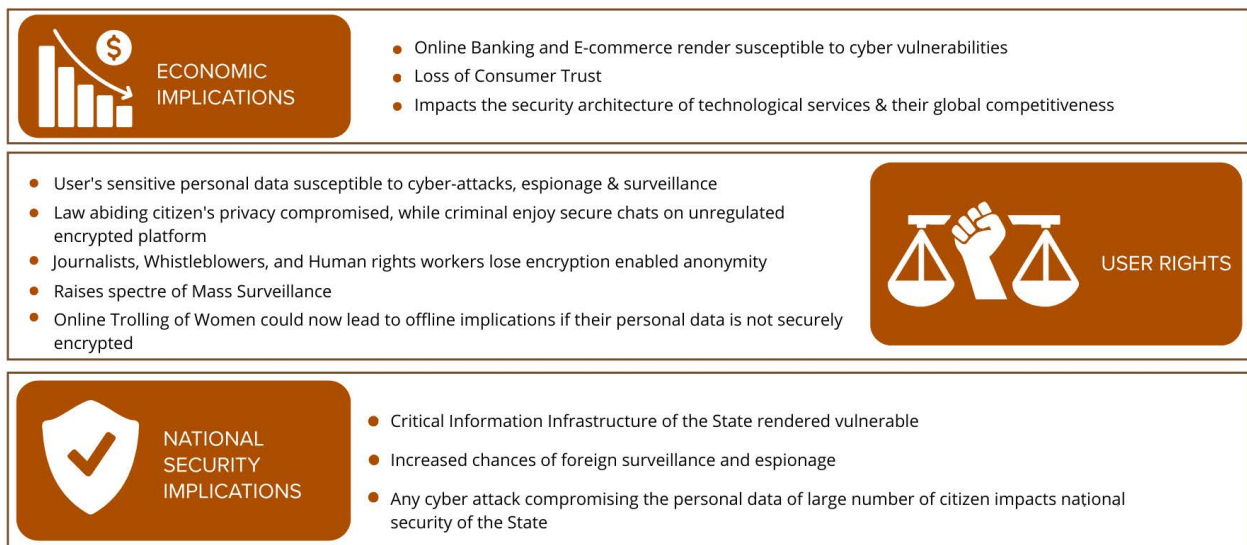


Fig. 3: Ramifications of Weakening Encryption¹⁷

¹⁵Authorisation and Necessary Safeguards for a surveillance law is discussed in detail in the next section

¹⁶Tiwari, P., & Shreya, S. (2020, October 31). In the Digital Age, Here's How Encryption is Protecting Your Privacy. The Bastion. Retrieved on November 7, 2022, from <https://thebastion.co.in/politics-and/in-the-age-of-the-internet-heres-how-encryption-is-protecting-your-privacy/>.

¹⁷Shreya S, Tiwari P. (2020, December), *Analysing the American Safe Harbour Regime: Takeaways for India*, The Dialogue, Retrieved on November 7, 2022 https://thediologue.co/wp-content/uploads/2020/12/Analysing-the-American-Safe-Harbour-Regime_Takeaways-for-India_The-Dialogue.pdf

5.2. Violation of user privacy

It is important to note that the TRAI had recommended to the DoT in 2020 that the security architecture of end-to-end encrypted services should not be tinkered with as that would compromise the privacy, safety and security of citizens.¹⁸ Also, indicating a compromise of end-to-end encryption for the state interest, like national security, public order etc. may fail the proportionality and necessity test suggested by the Supreme Court in Puttaswamy Judgement I.¹⁹ Given that the originator traceability mandate envisaged under Rule 4(2) of the IT Rules, 2021²⁰ is being contested before the Delhi High Court, it is not ideal for legislating a provision under the Draft Bill with even far-reaching privacy and security implications.

5.3. Global Implications

What the interception mandate overlooks is that end-to-end encryption is a system-level design and one that is the same for all users of an application. Forcing communication platforms to enable the interception of messages cannot be a country-specific change for multiple reasons. First, the likes of Signal and WhatsApp have a common application interface and design, which are not country-specific. Secondly, these platforms enable cross-border communication between users. Such a law in India would endanger the privacy of all users on these platforms, irrespective of the country.²¹ It would also lead to the fragmentation of the internet, with demands for country-specific versions of technologies. Such a scenario would ultimately result in disharmony and incompatibility of regulations.

5.4. Security Implications

In 2022, The Dialogue published a study on the National Security Implications of Weakening Encryption based on qualitative inputs from law enforcement, intelligence agencies, the military and

¹⁸Telecom Regulatory Authority of India (2018, July 16). *Recommendations on Privacy, Security and Ownership of the Data in the Telecom Sector*. Retrieved on October 16, 2022, from https://traai.gov.in/sites/default/files/RecommendationDataPrivacy16072018_0.pdf

¹⁹Justice K.S. Puttaswamy (Retd.) & Anr. v Union of India & Ors. [S.K. Kaul, Part J] (2017). Retrieved on November 8, 2022, from <https://indiankanoon.org/doc/127517806/>

²⁰Rizvi, K., & Singh, S. (2021, March 15). *Does The Traceability Requirement Meet The Puttaswamy Test?*. Live Law. Retrieved on October 29, 2022, from <https://www.livelaw.in/columns/the-puttaswamy-test-right-to-privacy-article-21-171181>.

²¹United Nations General Assembly (1966 December 16) *Article 17 of the International Covenant on Civil and Political Rights*. Retrieved on November 7, 2022, from <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-civil-and-political-rights#:~:text=before%20the%20law,-Article%2017,against%20such%20interference%20or%20attacks>. And, United Nations General Assembly (1948 December 10) *Article 12 of the Universal Declaration of Human Rights*. Retrieved on November 7, 2022, from <https://www.un.org/en/about-us/universal-declaration-of-human-rights#:~:text=Article%2012,against%20such%20interference%20or%20attacks>

India's tech community experts, as well as a deep study of global legal and technical standards.²² The study identified that the key challenge to catching criminals in cyberspace is not encryption but the inability to utilise even metadata owing to concerns like access to technology and lack of workforce skilled at analysing metadata.

The success of Project Trojan Shield, wherein over 500 criminals were arrested, explains how the ingenious use of encryption technology can aid in catching criminals. Herein the police planted a compromised encrypted App, 'An0m', in a criminal network to surveil only the bad actors. The project relied on traditional surveillance manoeuvres to target defined actors instead of surveilling everyone.²³

As savvy criminals shift to unlicensed encrypted Apps to evade detection, ultimately, the interception mandate risks the privacy and security of all users only to catch the not-so-smart criminals. More importantly, the regulated end-to-end encrypted platforms share metadata with law enforcement agencies which helps the latter to catch bad actors.²⁴ If the bad actors get a whiff that messages can be intercepted on licensed platforms, then they will simply shift to an unlicensed secure communication App, and law enforcement would even lose the metadata that they initially received from platforms to aid their investigation. Weakening encryption may also lead to foreign surveillance, espionage and cyber attacks by non-state actors on the sensitive personal data of Indian users.

5.5. Business Model

Intercepting the encrypted communication distorts the core business model of messaging service providers, voice-over-IP service providers, video telephony software programs etc., i.e., to enable secure and encrypted connection over unsecured internet infrastructure. Also, the trust quotient, an integral part of these businesses, gets compromised. Moreover, the Draft Bill does not clarify how this provision would apply to businesses that traditionally do not hold any records of communication. This would make such businesses eventually move towards instrumenting systems and mechanisms that record data, defeating the purpose of end-to-end encryption and causing privacy and security implications.²⁵

²²Azad, Y., Venkat Narayanan, A., Tiwari, P., & Chatterjee, S. (2022, January 12). Analysing the National Security Implications of Weakening Encryption. The Dialogue. Retrieved on November 7, 2022, from <https://thediologue.co/wp-content/uploads/2022/01/Report--National-Security-Encryption--The-Dialogue-DeepStrat--Jan-12-2022.pdf>

²³EUROPOL (2021 June 8) 800 criminals arrested in biggest ever law enforcement operation against encrypted communication. Retrieved on November 7, 2022, from <https://www.europol.europa.eu/media-press/newsroom/news/800-criminals-arrested-in-biggest-ever-law-enforcement-operation-against-encrypted-communication>

²⁴Science and Technology Branch, Operational Technology Division (2021 January 7) *Lawful Access: FBI's ability to legally access secure messaging app content and metadata*, Federal Bureau of Investigation. Retrieved on November 7, 2022, from <https://s3.documentcloud.org/documents/21120480/fbi-doc.pdf>

²⁵UHusain, Y. (2022, October 16). *Big Brother will be watching you: Experts weigh in on privacy dangers of the draft Telecom Bill 2022*. Mid-Day. Retrieved on October 16, 2022, from <https://origin.mid-day.com/sunday-mid-day/article/big-brother-will-be-watching-you-experts-weigh-in-on-privacy-dangers-of-the-draft-telecom-bill-2022-23250637>

5.6. Economic Implications

According to a study that analyses the economic implications of weakening encryption technology in Australia²⁶, it was found that the encryption-hostile law can inflict significant economic harm and produce negative spillovers that amplify that harm globally. In addition to increasing business uncertainty, it also fractures public trust in the internet and its enabled services.

²⁶Internet Society (2021 June 1) *The Economic Impact of Laws that Weaken Encryption*. Retrieved on November 7, 2022, from <https://www.internetsociety.org/resources/doc/2021/the-economic-impact-of-laws-that-weaken-encryption/>

6. Network Usage Fee

The crux of the debate on network usage fees emanates from the assertion that OTT players benefit from the physical infrastructure that TSPs have built. As a result, they are taking advantage of the networks without incurring the costs of delivering services. It is argued that OTTs should pay for the use of the network to level the playing field. The payment for the use of the network is called Network Usage Fee or Cost Sharing or Sending Party Network Pays (**SPNP**) model in different jurisdictions. For clarity, we will use the term Network Usage Fee in the Indian context. TRAI's consultation paper on convergence also talks about this issue. While not going into detail, the consultation paper only mentions this demand by the TSPs. This issue is being deliberated in several countries, including the EU and India but has only been implemented in South Korea in the form of the SPNP Model, where it has faced severe criticisms.²⁷

The potential impact of network usage fees in the broader internet ecosystem will be significant and needs to be carefully considered. **Telecom operators' previous attempts to shift from a voluntary interconnection regime to a sending-party-network-pays model, in which Content and Application Providers (CAPs) would essentially pay network usage fees to ISPs, have been rejected by European regulators in the past.**²⁸ TSP argued that this payment model would be a significant change and could jeopardise the benefits delivered by the voluntary interconnection regime, including innovation, growth in connectivity, and the development of new content and applications.²⁹ Further, the argument that OTT uses telecom infrastructure and should pay to the TSP does not hold good under scrutiny. It is equivalent to saying that car manufacturers should pay for road construction and maintenance or to the notion that electricity providers should receive a share of the value added in all sectors of the economy that use electricity.

There is no evidence indicating that the expansion of OTT services has negatively impacted the revenues or profits of telecom operators. On the contrary, the opposite is true. For example, one major Indian TSP reported³⁰ a 27% rise in revenue from mobile services during the first quarter of the 2022-23 financial year, which the company attributes to an increase in average revenue per user and greater mobile data consumption. Overall, the company's net profit increased by five-fold to Rs 1,607 crore. Similarly, in the quarter ending June 2022, another major Indian TSP recorded³¹ its best-ever quarterly revenue of Rs 27,527 crore. Research also shows that the OTT economy has a positive spillover effect on the global economy. Specifically, a report by Broadband India Forum and Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste (WIK)—a

²⁷Park, K.S., Nelson, MR. (2021), *Afterword: Korea's Challenge to the Standard Internet Interconnection Model*, Carnegie Endowment for Central Peace., Retrieved 26 May 2023, from: <https://carnegieendowment.org/2021/08/17/afterword-korea-s-challenge-to-standard-internet-interconnection-model-pub-85166>

²⁸BEREC (2012) *BEREC's comments on the ETNO proposal for ITU/WCIT or similar initiatives along these lines*. Retrieved on May 15, 2023 from https://www.berec.europa.eu/sites/default/files/files/document_register_store/2012/11/BoR%2812%29120rev1_BEREC_Statement_on_ITR_2012.11.14.pdf

²⁹BEREC (2012), *BEREC's comments on the ETNO proposal* https://www.berec.europa.eu/sites/default/files/files/document_register_store/2012/11/BoR%2812%29120rev1_BEREC_Statement_on_ITR_2012.11.14.pdf

³⁰Bharti Airtel (2022 August 8) *Consolidated Results Statement Q1 2023*. Retrieved on May 15, 2023 from <https://assets.airtel.in/teams/simplycms/web/docs/Quarterly-highlights-08082022.pdf>

³¹Reliance Industries Limited (2022 July 22) *Consolidated Results Q2 2022*. Retrieved on May 15, 2023 from [https://www.ril.com/getattachment/13fdb1e6-03f2-4fe2-b0d2-73d888048af5/Q1-\(FY-2022-23\)-Financial-and-Operational-Performa.aspx](https://www.ril.com/getattachment/13fdb1e6-03f2-4fe2-b0d2-73d888048af5/Q1-(FY-2022-23)-Financial-and-Operational-Performa.aspx)

Germany-based think tank³² estimates that **between 2000 and 2015, a 10% increase in OTT usage resulted in an average increase of \$5.6 trillion in global GDP.**

Similar arguments in favour of network usage fees have been put forth in India too. Back in 2015, one of the TSPs proposed to charge extra for the voice over internet which was subsequently withdrawn and TRAI recommended in favour of net neutrality and prohibited any agreement by service provider that would result in discriminatory tariffs³³. TRAI's paper has reignited this debate in India, calling attention to revisit this crucial topic.³⁴

Proponents of network usage fees argue that such fees should be charged to CAPs, as they are responsible for the traffic that incurs broadband network costs. **However, this argument oversimplifies the relationship between end-user demand and broadband usage and ignores the continual investment and enhancement in network efficiency.** With respect to domestic industry development, if network usage fees are implemented, smaller OTT players could face entry barriers, while larger TSPs may gain competitive advantage, which could slow down the growth of smaller OTT players or TSPs. Bigger players still have the money and resources to enter into agreements with TSPs however, smaller players with minimal revenue will find it difficult to compete in the market. This could significantly impact the domestic economy, particularly considering the increasing consumption of advanced online services and broadband by businesses, which is expected to accelerate digitalisation and economic growth.

However, before we go into each of the arguments made by the different TSPs in different jurisdictions, we first need to understand the technical nuances of how the Internet actually functions

Internet functioning is often misunderstood as unilateral, with data packets moving from point A to point B. In reality, the internet and the data packets that enable access to internet-based services never really move in a determined path. **This interchange and movement of data packets across networks to reach their final destination is termed 'Peering' and is an important cog in the machine that is our internet.** Peering acts as a significant value-creating mechanism for the Internet- that allows carriers a means of exchanging data from one carrier's customer base to another. These types of network interconnections are common at the core of the Internet, where highly intricate and closely linked networks exist with the primary aim of transporting traffic on behalf of customer networks themselves.

Peering arrangements have both technical and business aspects. To reach an agreement, network operators negotiate based on the amount of traffic being exchanged between their networks. **If approximately the same amount of traffic is coming and going, the operators often agree to settle for free. This type of peering is called settlement-free peering. However, if one network receives more traffic than it sends to its partner network, it might charge a fee to compensate for this asymmetrical flow.**

³²Honnef, B., Kroon,P., Hildebrandt,C. & Tas,S. (2017 November) *The Economic and Societal Value of Rich Interaction Applications in India*, Broadband India Forum. Retrieved on May 15, 2023 from <https://broadbandindiaforum.com/wp-content/uploads/2020/12/THE-ECONOMIC-AND-SOCIETAL-VALUE-OF-RICH-INTERACTION-APPLICATIONS-IN-INDIA.pdf>

³³(2017) *Net Neutrality Debate Timeline in India*, ET Telecom. Retrieved 15th May 2023 from <https://telecom.economictimes.india-times.com/news/net-neutrality-debate-timeline-in-india/61833119>. see also Apoorva (2016) *Net Neutrality Debate in India*, PRS. Retrieved 15th May 2023 from: <https://prsindia.org/theprsblog/the-net-neutrality-debate-in-india?page=32&per-page=1>

³⁴TRAI (2023, January 13) *Consultation Paper on Telecommunication Infrastructure Sharing, Spectrum Sharing, and Spectrum Leasing*. Retrieved on May 14, 2023 from https://www.trai.gov.in/sites/default/files/CP_INF_13012023.pdf

Peering negotiations typically go unnoticed by end-users even though they play an essential role in ensuring smooth internet routing- particularly in addition to standard contracts made at the beginning and end stages of broadband service delivery. The underlying significance of peering arrangements has critical implications for the quality of internet services we all enjoy.

Since the internet constitutes a collaboration between multiple parties, leveraging either their resources (internet infrastructure, internet exchanges etc.) and Content and application providers (CAPs) providing content and services built atop the networking layer, a collaboration between stakeholders gains importance. For the longest time, Internet and Telecommunications Service providers have agreed upon inter-networking agreements and shared costs amongst themselves.³⁵³⁶ However, increasing pushback from ISPs and TSPs globally has brought the cost-sharing debate back to the fore. Thus, in this chapter, we aim to address fundamental issues with such a push towards cost sharing and elucidate how such policy decisions may adversely impact consumers without providing any material benefit.

Let us first understand the status quo. At present, interconnection is handled in three distinct manners between network operators:-

- **Transit:** A network pays another network to carry traffic to different parts of the internet. Transit agreements are contracts between a service provider and a customer intended to provide access to the Internet. Such contracts are usually present at the borders of the Internet's infrastructure, where small stand-alone networks focus only on their internal traffic.
- **Paid Peering:** A network pays another network to exchange traffic between their customers.
- **Settlement-Free Peering:** Two networks establish a payment-free agreement to exchange traffic between their customers. This is the most commonly found peering agreement on the internet, as both parties benefit from exchanging their traffic.³⁷³⁸

The call for cost-sharing has been argued based on previous experiences in handling costs for calls made over the PSTN system. Under traditional TSP systems, a user was charged for all the circuits they occupied to make a call. For instance, If we call a person on another TSP network, the initiator would be charged for the circuit occupied on their TSP network and the TSP network the recipient was on. This is why international calls that used public switched telephone networks ('PSTN') circuits throughout the call were so costly, as the initiator was charged for all the circuits

³⁵Frautschy, D., Gahnberg, C., (2022, May 26). *Old Rules in New Regulations – Why “Sender Pays” Is a Direct Threat to the Internet.* Internet Society. Retrieved on May 12, 2023 from <https://www.internetsociety.org/blog/2022/05/old-rules-in-new-regulations-why-sender-pays-is-a-direct-threat-to-the-internet/>

³⁶The TRAI in the past has also enabled ISPs to make their own peering agreements using NIXI as a platform. See TRAI (2006 October 1) *TRAI consultation Paper on “Improvement in the effectiveness of NIXI”*. Retrieved May 26, 2023 from https://www.traigov.in/sites/default/files/VSNL_01112006_0.pdf

³⁷Woodcock, B., Frigino, M., (2016). *Survey of Internet Carrier Interconnection Agreements*. Packet Clearing House. Retrieved on May 12, 2023 from <https://www.pch.net/resources/Papers/peering-survey/PCH-Peering-Survey-2016/PCH-Peering-Survey-2016.pdf>

³⁸Frautschy, D., Gahnberg, C., (2022, May 26). *Old Rules in New Regulations – Why “Sender Pays” Is a Direct Threat to the Internet.* Internet Society. Retrieved on May 12, 2023 from <https://www.internetsociety.org/blog/2022/05/old-rules-in-new-regulations-why-sender-pays-is-a-direct-threat-to-the-internet/>

that were occupied in enabling the conversation. While such a model works in a circuit-based system, applying the same on the Internet is outrightly invalid as the Internet functions on packet delivery.^{39 40} In Voice over-internet protocol (‘VoIP’), the calls are routed through the internet and only use the PSTN at the last stage of connecting calls. In such a scenario, the initiator is only charged a little higher than if they were making the call locally.

Contemporary SPP (Sharing Payment Patterns) proposals in Europe equate to the telephone model of “calling-party-pays,” wherein the calling party pays for the call via a termination cost allocated by its originating network and transfers to its receiver. However, a white paper on interconnection published by Analysys Mason notes two noteworthy differences between voice telephony and the Internet.⁴¹ *Firstly*, established landline providers formerly held monopolies that compelled them to have their interconnection rates regulated by the International Telecommunication Union (ITU). On the other hand, internet backbones emerged from a competitive environment where most chose not to incur an expense for their linkage as it proved more effective and affordable this way.

Secondly, the Internet shows a notable difference from landline-based calling when it comes to the sending party pays model. This is because it improperly combines the initiation, valuation, and sending of traffic under one system. In earlier times, before the internet became mainstream in society and calls were made using the PSTN circuit, the person initiating the call on fixed landlines was also its beneficiary at once. However now, subscribers primarily sign up for access to extensive content sources from across the globe instead of making phone calls alone. While content providers indeed benefit from this arrangement as much as anyone else involved in the process, assigning financial liabilities based on traffic patterns does not reliably result in universal benefits to any stakeholder besides network operators. Due to these nuanced market dynamics that have emerged over time, such redistributions need further consideration before deciding how payments made through SPP work correctly.⁴² Thus, applying network usage costs on CAPs would be unfair and lead to fallout consequences for the entire ecosystem while presenting no material benefits

6.1. Assessment of Arguments Put Forth by TSPs

In the debate over cost-sharing between OTTs, TSPs and ISPs, multiple arguments have been used to argue that OTTs must either share their revenues or share the costs of maintaining and operating internet infrastructure. In this segment, we assess these arguments and provide academically backed interjections.

³⁹Weller, D. and B. Woodcock (2013). *Internet Traffic Exchange: Market Developments and Policy Challenges*. OECD Publishing. https://www.oecd-ilibrary.org/science-and-technology/internet-traffic-exchange_5k918gpt130q-en

⁴⁰Kane, J. and Dine, J (2022, November 7) Consumers Are the Ones Who End Up Paying for Sending-Party-Pays Mandates. Information Technology and Innovation Foundation. <https://itif.org/publications/2022/11/07/consumers-are-the-ones-who-end-up-paying-for-sending-party-pays-mandates/>

⁴¹Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies’ Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report--infra-investment-2022.pdf>

⁴²Kende, M., Abecassis, D., (2020). IP interconnection on the internet: a white paper. Analysys Mason. Retrived on 14 June, 2023 from. <https://www.analysismason.com/contentassets/f0a00cc9ba3946bdb5e0be2f46396f04/analysys-mason--ip-interconnection-white-paper-210520.pdf>.

6.1.1. Investments in the Internet Infrastructure

Despite the significant increase in Internet traffic over the past decade, the voluntary interconnection regime remains a fundamental building block for maintaining a global and interoperable Internet based on cooperation between stakeholders operating within a competitive environment. Proponents of network usage fees fail to acknowledge the efforts already being made by CAPs to alleviate the strain on ISP networks and enhance the user experience, both within their own networks and in collaboration with TSPs.

However, if we briefly assess the literature around the investments made by stakeholders in the content layer, this argument begins to lose ground. **As per international studies, stakeholders from the content layer have invested over USD 883 Billion over the last decade. Between 2018 and 2021, content and application providers invested over USD 120 Billion annually and have consistently invested in building and maintaining critical parts of the Internet infrastructure since 2014.**⁴³ This data suggests the increasing contributions made by OTT players in the growth of the global Internet ecosystem, thereby facilitating innovation, growth in connectivity, and development of new content and applications.

Further, stakeholders from the content layer have focussed their investments on three main clusters of the internet infrastructure:

- hosting (i.e. data centres and Content Delivery Networks (CDNs),
- transport (i.e. submarine and terrestrial cables), and
- delivery (i.e. peering and caching).⁴⁴

This infrastructure for hosting, transporting and delivering content to consumers spans tens of thousands of miles around the globe. It is critical to deliver online content and services close to ISPs for the benefit of the end user's online experience. **These investments improve user experience, reduce latency, and allow for remote working and learning.** Contrary to the argument, investments in heavy infrastructure projects, such as submarine cables and optimisation of traffic by CAP across different internet exchange points, have materially benefitted ISPs and TSPs as they no longer need to pay transit and peering costs from the CAP's origin country. Atop this, the investments made by CAPs in maintaining optimal caches (at core/metro/aggregation nodes) reduce strain on the network provider's servers and, in effect, reduces costs for the network operator. **Studies estimate that these investments save up to USD 5-6.4 Billion annually for network operators globally.**⁴⁵

⁴³Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

⁴⁴Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

⁴⁵Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

6.1.2. Traffic-driven Costs for ISPs and TSPs

Another argument network providers use is that CAP services have driven traffic to such a degree that they take a load on the infrastructure and increase maintenance costs for ISPs and TSPs. This argument has recently been debunked by a study by Analysys Mason⁴⁶ that found that costs for ISPs have remained stable between 2018-2021 despite a marked increase in traffic. Over the past few years, there has been a substantial rise in global traffic delivered through both fixed and mobile access networks, while the annual expenditure related to network infrastructure by telecom operators has remained relatively constant.⁴⁷

One reason network costs have not increased significantly despite the growth in traffic is that the cost of equipment tends to decrease over time while the capacity of network equipment continues to improve. According to a report by Ericsson⁴⁸, the cost per GB for network service providers decreases as user traffic increases since traffic growth outpaces investment and reduces the cost of delivering each additional GB. As a result, the cost per unit of traffic decreases over time. In addition, advanced equipment such as high-capacity routers and dense wavelength-division multiplexing (DWDM) equipment have also become more sophisticated, which means that as networks are upgraded with new equipment, they are better equipped to handle higher volumes of traffic more efficiently.⁴⁹

Another crucial reason why network costs remain stable when traffic increases is because a large portion of TSP networks are not impacted by increase in traffic. This is especially evident in fixed networks, where the costs associated with access do not increase in proportion to the volume of traffic. This is because the capacity of access links is generally fixed and depends on the speed at which connections are sold to end users. As a result, TSPs design their access networks to deliver the speed they promise to their customers. Once the access link's bandwidth is set, it becomes predictable and independent of traffic. Over time, technology shifts, generational upgrades and competition drive access network deployments, enabling higher speeds for end-users and facilitating more significant levels of traffic demand through the use of more advanced applications.⁵⁰

This is because of two primary reasons; firstly, traffic on a network does not increase costs as networks are built with high bandwidth ceilings and can easily incorporate rising traffic without incurring significant additional costs. Secondly, increased traffic volumes are only a small share of costs that network providers incur. Thus, increased traffic volumes have not materially increased costs for network operators.

⁴⁶Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

⁴⁷Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

⁴⁸(June, 2020) Ericsson, 'Understanding the Economics of 5G Deployments' Available at <https://www.ericsson.com/en/blog/6/2020/economics-of-5g-deployments>

⁴⁹Scott, M. (2014), The economic impact of internet traffic growth on network operators. Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste (WIK). Retrieved on May 12, 2023 from <https://www.wik.org/en/publications/publication/the-economic-impact-of-internet-traffic-growth-on-network-operators>

⁵⁰(2022 July 14) Netflix's Open Connect program and codec optimisation helped ISPs save over USD1 billion globally in 2021. Retrieved on May 20, 2023 from <https://www.analysismason.com/contentassets/ef8295594cc54285bf554b05daa06431/modelling-the-impact-of-netflix-traffic-and-open-connect-on-isp-traffic-dependent-costs---2022-07-14.pdf>

On the contrary, multiple studies have shown that due to the increased quality and abundance of services provided by CAPs, users tend to buy more expensive and faster internet plans from their network providers, thereby adding to their revenue instead of chipping away from it as is commonly argued.⁵¹ Furthermore, the global drive towards fiberisation will entail even lower operational costs and increase the ceilings even further when it comes to managing traffic. ISPs have adequate policy interventions and technological developments in their favour to sustainably increase their market volume while retaining costs or even reducing them.

6.1.3. Impact of Cost-Sharing Mandates on Consumers

Cost-sharing mandates have consequences for all stakeholders involved. Considering consumers are the most important cog in the machine that is the internet, ensuring that consumers are able to access the internet in a fair and transparent manner becomes crucial. Cost-sharing mandates have multiple consequences for consumers:-

1. **Access to services:** Cost-sharing mandates have resulted in a price increase in broadband plans as CAPs in cost-sharing models often push the costs mandated on them onto the consumer. This results in a steep rise in barriers to entry and may negatively impact the internet penetration that has boomed in India owing to the government and industry's collaborative effort to make the internet cheap and accessible nationwide.
2. **Additional Cost:** Cost-sharing mandates have resulted in reduced competition in network operator markets and have, in particular, affected small-medium ISPs that are not able to keep up with additional costs brought on by network sharing models and are forced by market forces to consolidate with bigger network operators. Because of this consumers are impacted in various forms in a monopolistic market. They lose their ability to negotiate prices as is seen to be present in competitive markets where network operators have to compete with one another over price, resulting in the consumer getting the best price for availing access to the internet. Further, decreased competition has in the past led to discriminatory services from ISPs and has affected consumers unilaterally by increasing costs of entry while decreasing the quality of service.⁵² As indirect costs increase with Network Cost Sharing, the price of the services and commodities provided by OTT would increase, ultimately hampering the demand curve as India is a price-sensitive market. Therefore, such sensitivity would further corner OTT platforms, especially start-ups, to take on the additional compliance burdens and costs associated with the Network Use Cost as they can't pass it on to their consumers.
3. **Decreased quality of service:** Cost-sharing mandates have fallout consequences for the quality of service that ISPs are able to provide their consumers. **In South Korea, for instance, consumers are now forced to pay the same amount for relatively lesser quality services owing to the costs brought on by their SPNP model.** In such models, ISPs are disincentivised from positioning themselves downstream of popular content platforms. They pass those added costs to the content providers as higher traffic volumes are penalised under the SPNP model. The SPNP model has also resulted in ISPs choosing not to host higher quality content (4K movies, shows etc.) as they cost significant traffic. The policy impacted the consumers adversely by limiting their choices and decreasing the quality of service.

⁵¹ITU-D Study Group (2021) Economic impact of OTTs on national telecommunication/ICT markets. https://www.itu.int/dms_pub/itu-d/oth/07/23/D07230000030001PDFE.pdf

⁵²Trostle, H., Mitchell, C., Razafindrabe, Ny., Andrews, M., Kienbaum, K.,(2020). Profiles of Monopoly: Big Cable and Telecom. Institute for Local Self-Reliance. https://cdn.ilsr.org/wp-content/uploads/2020/08/2020_08_Profiles-of-Monopoly.pdf

6.1.4. Impact of Cost-Sharing on Net Neutrality

The principle of Net Neutrality has emerged as a central topic in Internet governance forums over the past decade. Various jurisdictions, including India, the United States of America, and the European Union, among others, have engaged in discussions and independently asserted that the Internet should uphold neutrality. However, the current mandate regarding cost-sharing introduces new challenges to preserving net neutrality. Net neutrality is a fundamental principle that ensures the freedom of expression on the Internet, regardless of the Internet Service Provider (ISP) through which one accesses it. It guarantees that the reach and access to online services are not discriminated against by network operators. This principle forms the bedrock of the functioning of the modern Internet. In the absence of net neutrality, platforms are incentivized to compete by forming exclusive partnerships with popular Content and Application Providers (CAPs) in order to gain market dominance. Consumers encounter significant entry barriers as different network operators provide distinct services, each behind their respective paywalls, thereby limiting the consumer's ability to utilise the Internet effectively.

In countries without cost-sharing requirements, Telecommunications Service Providers (TSPs) operate within a one-sided market where their pricing only impacts their market share and service usage. However, with the introduction of cost-sharing mandates, the network market transforms into a two-sided market, where ISPs negotiate fees not only with users but also with CAPs. This further complicates the already intricate relationships between network providers, CAPs, and end-users, without offering any evident benefits to users. The reason behind this lies in the fact that when network operators demand usage fees from CAPs, these costs are likely to be partially passed on to end-users, as they depend on the uninterrupted flow of services from CAPs. For example, if a usage fee is imposed on a streaming CAP, they may be discouraged from investing in codec optimization or establishing localised Content Delivery Networks (CDNs) to enhance the end-user experience, ultimately resulting in a detriment to the user. Such practices are already observable in jurisdictions like South Korea, where CAPs have reduced investments in optimising the end-user experience to cover increased compliance costs.⁵³

In such cases, as has been experienced earlier, organisations enter into exclusive agreements to offer a popular service to their consumers in an attempt to boost market share. Such a scenario may result in throttling of services for non-subscribed users, fragmenting and fundamentally breaking the internet. Thus, any policy interventions mandating a cost-sharing between CAPs, end users and network operators must consider these consequences for the future of the internet too.

6.2. Economic Implication of Cost Sharing

To comprehend the economic ramifications of cost sharing, it is imperative to delve into the deployment strategies employed by TSPs in their network infrastructure. Broadband TSP networks typically consist of three key segments: the core, backhaul, and access segments. In terms of cost impact, the core and backhaul segments exhibit a higher sensitivity to traffic compared to

⁵³(2022, November 7) Consumers Are the Ones Who End Up Paying for Sending-Party-Pays Mandates. Information Technology and Innovation Foundation. <https://itif.org/publications/2022/11/07/consumers-are-the-ones-who-end-up-paying-for-sending-party-pays-mandates/>

the access segment within TSP networks. Fixed access networks play the crucial role of connecting end-users to the Internet by traversing through the backhaul and core segments of the ISP's network, which are interconnected at specific points. The backhaul and core segments aggregate traffic from multiple connections within the access network, rendering these segments highly responsive to traffic variations. Consequently, it becomes essential to adequately provision capacity within the links and nodes that interconnect various layers of the network. This entails incurring costs for equipment procurement and establishing connectivity either through direct links or by means of wholesale arrangements.

Research⁵⁴ suggests that the costs in the core and backhaul of fixed networks that are sensitive to traffic only constitute a small proportion of the overall costs. Specifically, such costs typically make up 20-30% of the total network costs and around 10-15% of the revenue. To analyse the effect of rising traffic on expenses at a specific period, it is estimated that a 30% rise in traffic for a given year leads to a 14% increase in core and backhaul costs.⁵⁵ However, since these costs constitute a minor portion of the total costs, this equates to only a 3% increase in the overall network costs. To put it simply, the cost of additional data usage is very low in terms of marginal costs. It is only when the network reaches its highest capacity that investment in network expansion and upgrades becomes necessary. The cost of such upgrades is minimal when compared to the total network capacity, even though they result in a significant increase in capacity. Further, research⁵⁶ also suggests that the next five years are expected to see only a slight increase in core and backhaul costs, despite the growth in traffic volume.

It is worth mentioning here that some advocates of network usage fees also claim that traffic-based fees should be imposed on OTT platforms to finance fiber deployment. However, it should be noted that only core and backhaul costs are sensitive to traffic not the expenses associated with delivering traffic on ISPs' access networks. In addition, as fixed networks transition from copper-based to fiber based architectures, they become more efficient which reduces the impact of traffic-sensitivity core and backhaul costs on total network costs.⁵⁷ Reliance Jio Infocomm Ltd, the telecom arm of Reliance Industries Ltd (RIL), is set to target an increase in market share in the wired broadband sector by tapping into new horizons with cheap fiber plans.⁵⁸ Fiber-based networks have lower operating costs when compared to older networks. According to a report by the Fiber Broadband Association in 2020⁵⁹ operational expenses for fiber-to-the-home (FTTH) networks are 50% and 63% lower per home covered than legacy technologies such as hybrid fiber-coaxial (HFC) and digital subscriber line (DSL), respectively. Furthermore, shutting down older copper networks and implementing an all-fibre to the premises (FTTP) access network could lead to significant reductions in energy usage, with estimations by

⁵⁴Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

⁵⁵Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

⁵⁶Abecassis, D., Kende, M., Osman, S., Spence, R., Choi, N.,(2022). The Impact of Tech Companies' Network Investment on the Economics of Broadband ISPs. Analysys Mason. Retrieved on May 12, 2023 from <https://www.analysismason.com/contentassets/b891ca583e084468baa0b829ced38799/main-report---infra-investment-2022.pdf>

⁵⁷Zager, M. (2020 July 29). Reduce network operating expenses, choose FTTH. Fiber Broadband Association. Retrieved on May 12, 2023 from <https://optics.fiberbroadband.org/Full-Article/reduce-network-operating-expenses-choose-ftth>

⁵⁸Bavadharini, K.S. & Sampath, V. (2023 March 30) Jio eyes new horizons with cheap fiber plan, Live Mint. Retrieved on May 13, 2023 from <https://www.livemint.com/market/mark-to-market/jio-eyes-new-horizons-with-cheap-fiber-plan-11680109620858.html>

⁵⁹Zager, M. (2020 July 29). Reduce network operating expenses, choose FTTH. Fiber Broadband Association. Retrieved on May 12, 2023 from <https://optics.fiberbroadband.org/Full-Article/reduce-network-operating-expenses-choose-ftth>

Analysys Mason Research⁶⁰ showing reductions of up to 80%. These factors can result in substantial savings for TSPs.

6.2.1. Internet Traffic Determined by End-Users Choice

Arguments in favour of network usage fees often attribute the responsibility for traffic solely to OTT platforms, disregarding the fact that end users' choices are the ultimate determinant of traffic volumes. It is well established that online service demand and broadband availability are interdependent. Introducing traffic-dependent fees as a means of regulating interconnection could lead to undesirable outcomes that regulators may find challenging to address. Such fees could negatively impact incentives for both OTT platforms and TSPs, resulting in reduced investment in cost control and quality, as well as less competition among ISPs. This could create obstacles for smaller OTT players entering the market, limiting the options available to end users.

6.2.2. Concerns around Internet Fragmentation and Effect on Net Neutrality

The implementation of a mandatory cost-sharing framework raises concerns about its compatibility with net neutrality regulations. In India, the Department of Telecommunications (DoT) issued the Net Neutrality Regulatory Framework in July 2018 after thorough consultations. This framework upholds the principle of non-discriminatory treatment and prohibits interference with internet content. Telecom companies are not allowed to impede or prioritise the speed of any content or discriminate against it in any way. A cost-sharing framework may grant telecom companies the power to block or slow down content from OTT players who do not enter into a cost-sharing arrangement, potentially denying users access to communication and e-commerce apps. It may also incentivise discrimination between paying and non-paying OTTs, leading to disparity.

Additionally, mandating network usage fees would likely fragment the global internet end-user experience. If OTT platforms or anyone uploading content to the internet had to negotiate with every TSP worldwide for traffic to reach end users, many companies would be limited to serving only a few geographic markets or their domestic market. As a result, end users would have fewer choices and receive a lower-quality experience, diminishing the value they get for their money. Moreover, poorer connectivity could impact business end users, leading to slower digitalization and economic growth. Determining a suitable regulatory approach would also be challenging and impose a significantly regulatory burden.

In conclusion, the justifications provided for network usage fees in the current debate lack solid evidence and propose a departure from the voluntary collaboration that has been essential for the internet's growth, potentially resulting in negative outcomes. The need of the hour is to devise a framework that considers India's unique market realities. While India's digital ecosystem has expanded internet penetration, millions, especially in rural areas, remain unconnected.

⁶⁰Wood, R. (2022 August 24), Energy costs and ESG goals are pushing reducing network energy usage to the top of operators' agendas. Analysys Mason Research. Retrieved on May 12, 2023 from <https://www.analysismason.com/research/content/articles/operator-energy-reduction-rdnt0-rdfi0/>

According to the TRAI, Telecom Services Performance Indicators, nearly 63 percent⁶¹ of India's rural population still struggles with access to internet services. Instead of considering the demand for network usage fees and undermining the symbiotic relationship between OTT platforms and TSPs, the government should focus on promoting OTT services to create demand for broadband. Ultimately, the value of network infrastructure lies in its ability to offer value to end users

6.3. Jurisdictional Experiences for Cost-Sharing

6.3.1. South Korea

South Korea is the first jurisdiction in implementing the SPNP (Sender Party Network Pays) model of interconnection agreements, creating a two-sided market for ISPs. These ISPs play a crucial role by attracting Content Application Providers (CAPs) to bring popular content to their platforms while also engaging with consumers to provide access services. The SPNP model has been in effect since 2016, when the Ministry of Science, ICT and Future Planning (predecessor of the Ministry of Science and ICT) began enforcing the revised Interconnection Standards for Telecommunication Facilities. These standards mandated that ISPs charge for the traffic they receive from one another.⁶²

The regulations regarding peering fees are determined by the amount of traffic transmitted to ISPs' customers, and content providers must meet specific criteria. Proposed charges based on the number of customers served by edge companies would likely have a significant impact on major content providers. As previously explained, these fees discourage ISPs from positioning themselves downstream of popular content platforms and result in a decline in the quality of high-bandwidth traffic. Moreover, large foreign content providers are increasingly opting to directly interconnect with Korean ISPs or limit the availability of their content domestically. These actions distort the market and impede the efficiency of traffic flows. Consequently, South Korea's network has become less resilient, with the country now recording the highest average latency among OECD nations.⁶³

The higher costs imposed through the SPNP model have also led to higher transit prices between ISPs and diverged from the once hallmark internet access status that the country boasted. As per a study by TeleGeography, the cost of transit from Seoul is eight to ten times that of transit costs from any European hub like London or Frankfurt. Even in comparison with other Asian countries where fiberisation is being implemented as a priority, transit prices of South Korea have steadily dropped 20% each year, highlighting the detrimental impact of the network costs and their ramifications for the country as a whole.⁶⁴ Despite the observable impacts, the South Korean government doubled down on CAPs, which downgraded their quality of service instead of paying higher network fees for carrying quality content.⁶⁵

⁶¹Telecom Regulatory Authority of India. (2022 July 26). The Indian Telecom Services Performance Indicators January – March, 2022. TRAI. Retrieved on May 15, 2023, from https://www.trai.gov.in/sites/default/files/QPIR_26072022_0.pdf

⁶²Parliament of the Republic of South Korea, Standards for interconnection of telecommunication facilities [Enforced 2020. 3. 6.], Notice No. 2020-10, 2020. Ministry of Science and Technology Information and Communication. Retrieved on May 15, 2023 from] <https://law.go.kr/LSW/admRullSlnfoP.do?admRulSeq=2100000188450#:~:text=%EC%A0%9C6%EC%A1%B0>

⁶³OECD Publishing. (2022), Broadband Networks of the Future. Retrieved on May 15, 2023 from <https://www.oecd-ilibrary.org/doc-server/755e2d0c-en.pdf?expires=1683285881&id=id&accname=quest&checksum=7BD97BB9BDD4567606B2E35C5F3DF47F>.

⁶⁴Boudreau, B. (2021). Global Pricing Trends in 20 Minutes [Webinar]. TeleGeography Blog. Retrieved on May 15, 2023 from <https://blog.telegeography.com/2021-global-pricing-trends-in-20-minutes>

⁶⁵Park, K., Nelson, M. (2021, August 17). Afterword: Korea's Challenge to the Standard Internet Interconnection Model. Carnegie Endowment for International Peace. Retrieved on May 17, 2023 from <https://carnegieendowment.org/2021/08/17/afterword-korea-s-challenge-to-standard-internet-interconnection-model-pub-85166>

Subsequent bills passed in the Korean Parliament have also empowered ISPs to refuse onboarding for CAPs that fail to pay their network usage fees. These bills also provide instructions to ISPs on how to calculate network usage fees. These methods include considering (a) capacity and usage period, (b) the size of the content provider based on its subscriber base or market share, (c) a discounted wholesale rate, or (d) the agreed-upon calculation method in existing contracts. Additionally, the Content Providers' Traffic Stabilization Law was passed, which mandates that CAPs must ensure reliable access to their content, a requirement typically reserved for ISPs in other regions. Essentially, consumers in South Korea are currently bearing additional costs for services that, since the implementation of the SPNP model, have experienced a decline in quality.⁶⁶

6.3.2. European Union

The European Union is no stranger to the call for network usage fees. The Body of European Regulators for Electronic Communications ('BEREC') has in the past rejected proposals by the European Telecommunications Network Operators Association ('ETNO') that requested a network interconnection fee as is observed under the SPNP model stating "If 'bill & keep' were to be replaced by SPNP then the ISP providing access could exploit the physical bottleneck for traffic exchange and derive monopoly profits, requiring regulatory intervention"⁶⁷

Recently, the debate was reinvigorated by the statements made by Thierry Breton, a Member of the European Parliament (MEP) and the EU commissioner for Internal Markets, over the gains made by American businesses globally in the internet services ecosystem.⁶⁸ European Commission Vice President Margrethe Vestager also concurred with the call for assessing the potential for sharing costs. Recently, France, Spain, and Italy have petitioned the European Commission to formulate a legal framework to mandate OTT platforms to finance network infrastructure.⁶⁹

Upon criticism⁷⁰ from policy experts and civil society, the EU also publicly assured⁷¹ that any policy developments to be made with regard to network usage fee would be in line with the EU's Declaration of Digital Rights and Principles⁷² and Net Neutrality protected under the Open Internet Regulation. In this statement, he also states that there are other alternative cost-sharing models besides the SPNP that the commission is keen on reviewing.⁷³

⁶⁶Yonhao. (2020, May 21). Netflix pressed to share network costs in S. Korea. The Korean Herald. Retrieved on May 13, 2023 from <http://www.koreaherald.com/view.php?ud=20200521000754>

⁶⁷Body of European Regulators for Electronic Communications. (2020, November 14). BEREC's comments on the ETNO proposal for ITU/WCIT or similar initiatives along these lines [Press Release]. Retrieved on May 17, 2023 from https://www.berec.europa.eu/sites/default/files/document_register_store/2012/11/BoR%2812%29120rev1_BEREC_Statement_on_ITR_2012.11.14.pdf

⁶⁸Dumoulin,S. & Perrotte,D. Bruxelles veut faire payer les réseaux télécoms aux Gafam, Les Echos. Retrieved on May 15, 2023 from <https://www.lesechos.fr/tech-medias/hightech/bruxelles-veut-taxer-les-gafam-pour-financer-les-reseaux-telecoms-1404614>

⁶⁹Pollina, E., Fonte, G. (2022, August 02). Exclusive: Big Tech should share Europe network costs, France, Italy and Spain say. Reuters. Retrieved on May 17, 2023 from <https://www.reuters.com/business/media-telecom/exclusive-france-italy-spain-call-tech-firms-pay-telecoms-networks-2022-08-01/>

⁷⁰Komaitis, K., Park, K. (2022, November 22). The Global Trend That Could Kill The Internet: Sender Party Network Pays. Tech Dirt. Retrieved on May 20, 2023 from <https://www.techdirt.com/2022/11/22/the-global-trend-that-could-kill-the-internet-sender-party-net-work-pays/>

⁷¹Vestager, M., & Breton, T. (2023, January 10). Reply to letter of 5 October 2022 from 29 experts and academics [Letter to Komaitis, K.]. Retrieved on from https://www.komaitis.org/uploads/4/7/0/1/4701503/reply_to_letter_of_5_october_2022_from_29_experts_and_academics.pdf

⁷²European Commission. (2023, February 7). European Declaration on Digital Rights and Principles [Press release]. Retrieved on May 17, 2023 from <https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles#:~:text=The%20Declaration%20on%20Digital%20Rights%20and%20Principles%20presents%20the%20EU's,version%20of%20the%20Declaration%20available.>

⁷³Parliament of the European Union(2015 November 25). Regulation (EU) 2015/2120 of the European Parliament and Council.(Online). Retrieved on on May 15, 2023 from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015R2120>

The proposal to consider an SPNP model has met with widespread resistance and cautionary interjections across the EU. Institutions such as the European Consumer Organisation⁷⁴, Europe's Mobile Virtual Network Operators (MVNO)⁷⁵ and the European Association for Commercial Television and Video on Demand (ACT)⁷⁶, amongst others, have publicly opposed the proposal and asked for careful consideration of impacts that such a transition will have for consumers and the internet as a whole. The European Consumer Organisation stated in its opposition that "for consumers in particular, the risks or potential disadvantages of establishing measures such an SPNP system would range from a potential distortion of competition on the telecom market, negatively impacting the diversity of products, prices and performance, to the potential impacts on net neutrality, which could undermine the open and free access to the Internet as consumers know it today."⁷⁷

The European Parliamentary Research Service, in its April 2023 summary document on the cost-sharing debate, highlights the different arguments made by stakeholders and how the EU must learn from the impacts witnessed in South Korea and proceed cautiously.⁷⁸ The impact of such policy interventions must also be assessed holistically, with the newly enforced Digital Markets Act and Digital Services Act also requiring greater compliance from the industry.

Recently, telecom ministers from across the 18 countries across the EU, either outrightly rejected the levy or requested an impact assessment of such a policy change from the EU Industry chief, Thierry Breton. The reasons behind such rejection included the absence of an investment shortfall, potential breach of net neutrality, a lack of adequate analysis of such policy changes and the general apprehension that added costs upon the application layer companies will likely be shifted onto the end consumer.⁷⁹

6.3.3. United States of America

The United States of America differs from South Korea and the European Union when it comes to cost sharing between network operators and content layer stakeholders. They differ on the grounds that the USA does not wish to proceed with the SPNP model but proposes to devise a similar model for ensuring that bigger players from the content ecosystem are sharing their revenues with network operators.

There are also marked demographic differences between the three jurisdictions, with the USA being home to a far greater mass of land with difficult terrain.⁸⁰ This is one of the major reasons that the USA has not been able to provide high-speed internet to all of its citizens, as network operators have no

⁷⁴BEUC The European Consumer Organization. (2022). Connectivity Infrastructure and the Open Internet. Retrieved on May 17, 2023 from https://www.beuc.eu/sites/default/files/2022-09/BEUC-X-2022-096_Connectivity_Infrastructure-and-the_open_internet.pdf

⁷⁵MVNO Europe. (2022). Network Investment Contributions. Retrieved on May 19, 2023 from <http://mvnoeurope.eu/wp-content/uploads/MVNO-Europe-Position-on-contributions-to-network-investment-3008.pdf>

⁷⁶Association of Commercial Television. (2023, July 8). TV & VoD statement on network fees [Press release]. Retrieved on May 17, 2023 from <https://www.acte.be/publication/tv-vod-statement-on-network-fees/>

⁷⁷Komaitis, K., Park, K. (2022, November 22). The Global Trend That Could Kill The Internet: Sender Party Network Pays. Tech Dirt. Retrieved on May 16, 2023 from <https://www.techdirt.com/2022/11/22/the-global-trend-that-could-kill-the-internet-sender-party-network-pays/>

⁷⁸Luca, D., (2023). Network cost contribution debate. European Parliamentary Research Service. Retrieved on May 19, 2023 from [https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/745710/EPRS_ATAG\(2023\)745710_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/745710/EPRS_ATAG(2023)745710_EN.pdf)

⁷⁹Chee, F.Y. (2023 June 3) Majority of EU countries against network fee levy on Big Tech, sources say Reuters. Retrieved on June 13, 2023 from <https://www.reuters.com/business/media-telecom/majority-eu-countries-against-network-fee-levy-big-tech-sources-say-2023-06-02/>

⁸⁰Duffy, C., Tappe, A., (2020, May 17). America's surprising breeding ground for inequality: The Internet. CNN Business. Retrieved on May 16, 2023 from <https://edition.cnn.com/2020/05/17/economy/internet-access-universal-wifi/index.html>

incentives to connect sparsely populated areas and instead focus their operations largely towards the densely populated coasts of America. This is why, much like India, the United States of America also has a Universal Service Fund (USF)⁸¹ that is aimed at subsidising such connectivity efforts

The Federal Communications Commission (FCC) enforces a ‘contributing factor’ percentage on telecom revenues, which is collected and allocated to the Universal Service Fund (USF) to enhance internet connectivity throughout the USA. However, due to the growing shift from traditional telecommunications networks to internet-powered services, the amount credited to the USF has decreased in recent times. As of March 2023, the contribution factor has been set at 29% of the total revenue that every TSP in the USA is required to contribute to the USF, even as the number of consumers availing TSP services has declined.⁸²

Despite this, the National Telecommunications and Information Administration (NTIA) has proposed multiple plans worth tens of billions for increasing connectivity, highlighting the fact that a financial crunch is not as apparent as is being represented.⁸³

As has been argued in India, multiple policy experts have also criticised the USF to be a legacy fund that would benefit the ecosystem if it were shut off completely.⁸⁴ However, recent FCC reports have discussed how the fund may consider increasing the scope of its taxation mandate to include content and application providers.⁸⁵ However, as is observable in the network operator industry, the consumers may yet again pay for any such levies through such costs being shifted onto the end consumer.⁸⁶

⁸¹Federal Communications Commission (n.d) Universal Service Fund. Accessed May 18, 2023 from <https://www.fcc.gov/general/universal-service-fund>

⁸²Federal Communications Commission (2023, March 14) Proposed Second Quarter 2023 Universal Service Contribution Factor [Press release]. Retrieved on May 17, 2023 from <https://docs.fcc.gov/public/attachments/DA-23-216A1.pdf>

⁸³National Telecommunications and Information Administration (n.d) Grants, United States Department of Commerce. Accessed on May 17, 2023 from <https://www.ntia.doc.gov/category/grants>

⁸⁴(2022, August 26). Joe Kane: Rural Broadband Infrastructure Should Fund People Wherever They Are. Broadband Breakfast. Retrieved on May 17, 2023 from <https://broadbandbreakfast.com/2022/08/joe-kane-rural-broadband-infrastructure-should-fund-people-wherever-they-are/>

⁸⁵Federal Communications Commission (2022 August 15) Report on the Future of the Universal Service Fund, WC Docket No. 21-476. Retrieved on May 16, 2023 from <https://docs.fcc.gov/public/attachments/FCC-22-67A1.pdf>

⁸⁶(2022, November 7) Consumers Are the Ones Who End Up Paying for Sending-Party-Pays Mandates. Information Technology and Innovation Foundation. <https://itif.org/publications/2022/11/07/consumers-are-the-ones-who-end-up-paying-for-sending-party-pays-mandates/>

7. Regulations of Telecom and Internet services in other Jurisdictions

Since regulatory overlap between OTT service providers and TSPs is a global phenomenon, we can study international approaches to the issue in order to ascertain the necessary magnitude of the regulatory response to address overlaps.

7.1. International Telecommunications Union (ITU)

The International Telecommunications Union is the international regulatory body that aims to standardise telecommunications and internet laws globally to enable interoperability between jurisdictions and drive growth. The ITU has long been adjudicating the need for collaboration between OTT service providers and TSPs and has drafted broad recommendations to harmonise the telecommunications landscape globally. Towards this, the ITU has stressed the following solutions:-

- Collaboration between TSPs and OTTs is necessary at the National and International levels.⁸⁷
- There is a need to reassess the magnitude of regulations on TSPs instead of increasing regulations on OTTs to bring about regulatory parity.⁸⁸
- The future is data-centric, and thus, there is a need to undertake viability assessments of current voice and SMS-reliant business models in order to stay up to speed with increasing data consumption, technological advancements and evolving consumer needs.⁸⁹
- The ITU has also recommended that OTTs be regulated under a framework that is cognisant of the technicalities of how such services are offered⁹⁰

In its 2019 recommendations titled ‘Collaborative Framework for OTTs’, drafted by the ITU-T Study group 3 tasked with overseeing and researching OTT platform regulations globally, the ITU recommended that government reduce regulatory burdens for TSPs instead of increasing regulations for OTTs in order to level the playing field⁹¹ The ITU-T Study Group 3 released another recommendation document titled ‘Enabling environment for voluntary commercial arrangements

⁸⁷ITU-T (2019 May 2) Collaborative framework for OTTs. Retrieved on October 14, 2022, from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13595>

⁸⁸ITU-T (2020 August 28) Enabling environment for voluntary commercial arrangements between telecommunication network operators and OTT providers. Retrieved on October 14, 2022, from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14269&lang=en>

⁸⁹ITU-T (2020 August 28) Enabling environment for voluntary commercial arrangements between telecommunication network operators and OTT providers. Retrieved on October 14, 2022, from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14269&lang=en>

⁹⁰ITU-T (2019) Collaborative framework for OTTs. Retrieved on October 14, 2022 from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13595>

⁹¹ ITU-T (2019) Collaborative framework for OTTs. Retrieved on October 14, 2022, from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13595>

between telecommunication network operators and OTT providers' in 2020, calling for TSPs to consider shifting their business models to become more data-centric as internet calling and data usage were at an all-time high and have not since lowered.⁹²

A 2020 annual deliverable report of the ITU-D Study group assessed the benefits of a collaboration between TSPs and OTT platforms, concluding that such collaboration has resulted in benefits such as reduced churn rates, increased net promoter scores, more stable in-bundle revenue streams, and the ability to link returns more directly to network investment. The study also establishes that in a data-driven future collaboration between both parties is crucial for harmonious growth as both sides rely on one another for revenue making and can potentially complement one another.⁹³

It is now evident that the consumption of content through OTT platforms has significantly boosted revenues for TSPs globally.^{94 95} The consumption trend also highlights that consumers are always interested in moving to a faster internet connection when available, as their content needs have cemented. Furthermore, in its 2021 publication titled 'Emerging technologies, including cloud computing, m-services and OTTs: Challenges and opportunities, economic and policy impact for developing countries', the ITU states that regulation of OTTs is not always required as mandating legacy requirements on emerging markets, can dampen innovation if not approached correctly. The document highlights global projects undertaken by OTTs in building infrastructure and improving networks in tandem with TSPs and ISPs to provide better services to consumers globally.⁹⁶

Thus, the ITU recommends reducing regulatory burdens on TSPs and their business models and reimagining centre data usage in the coming years. OTT applications drive the demand for Internet connectivity services, thus increasing traffic and, consequently, the revenue of telecommunication service providers. Broadband services are usually offered with commercial models linked to data usage, involving transfer speed and traffic amount, typically tied to minimum consumption

The ITU also recommended member states create a conducive environment for agreements between OTT platforms and TSPs for infrastructure development and management to manage the ever-increasing internet adoption and digitisation of our lives.

⁹²ITU-T (2020 August 28) Enabling environment for voluntary commercial arrangements between telecommunication network operators and OTT providers. Retrieved on October 14, 2022, from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14269&lang=en>

⁹³ITU-T (2020 August 28) Enabling environment for voluntary commercial arrangements between telecommunication network operators and OTT providers. Retrieved on October 14, 2022, from <https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14269&lang=en>

⁹⁴Dey, A. (2019 May 12) OTT players ride piggyback on telcos to boost revenues, Financial Express. Retrieved on October 15, 2022, from <https://www.financialexpress.com/life/technology-ott-players-netflix-hotstar-amazon-prime-video-zee5-ride-on-telcos-airtel-reliance-jio-vodafone-idea-to-boost-revenues-1575769/>

⁹⁵ITU-D Study Group 3 (2019 October 1) Question 3/1 and 4/1 Joint session on the Economic impact of OTTs on National Telecommunication/ICT Markets. Retrieved on October 15, 2022, from https://www.itu.int/dms_pub/itu-d/oth/07/1a/D071A0000040002PDFE.pdf

⁹⁶ITU-D Study Group 3 (2021 February 3) Emerging technologies, including cloud computing, m-services and OTTs: Challenges and opportunities, economic and policy impact for developing countries. Retrieved on October 15, 2022, from https://www.itu.int/dms_pub/itu-d/opb/stg/D-STG-SG01.03.2-2021-PDF-E.pdf

7.2. United States of America (USA)

The Federal Communications Commission is the regulatory authority for telecommunications and internet services in the USA. The FCC has in the past adjudicated differences between OTT platforms and traditional TSPs over a level playing field and other regulatory clashes however has always concluded that there is no need to regulate OTT communications services similar to TSPs. However, it mandates data protection standards, emergency calling services and contributions to the Universal Services Fund and the Telecommunications Relay Services Fund at par with TSPs.⁹⁷

7.3. Canada

In February 2022, the Canadian government introduced a new bill to amend the Broadcasting Act and to make related and consequential amendments to other acts, such as the ‘Online Streaming Act’. The Online Streaming Act aims to expand the authority and powers of the Canadian Radio-television and Telecommunications Commission (CRTC), and it will bring online broadcasters – including online streaming platforms – under the same regulatory framework as traditional broadcasters providing services and content in Canada.⁹⁸ On April 27th 2023, the bill received royal assent and has since become law.⁹⁹ The bill does not have provisions for increasing compliance for OTT platforms. The only present obligation that the Act will enforce is the increased representation of Canadian culture, communities and languages in Online streaming content.

Although the CRTC has recognised that new media digital and Internet content delivery platforms do fall within the definition of “broadcasting” for the purposes of the Broadcasting Act, it exempted these platforms from broadcast licensing and regulation through the promulgation of successive digital media exemption orders.

7.4. European Union (EU)

In the European Union, the European Electronic Communications Code, with its amendments in effect from December 2020, subsumed a host of new OTT services under its definition of ‘electronic communications services’, thereby mandating Data protection, compliance with law enforcement requests, emergency dialling services and consumer protection laws.¹⁰⁰ The Technical standards

⁹⁷Brown, A. & Trapp, D. (2021 August) Telecoms & Media 2021, Law Business Research. Retrieved on October 19, 2022 from <https://www.hwglaw.com/wp-content/uploads/2021/08/2021-Telecoms-Media.pdf>

⁹⁸Senate of Canada (2022 November 4) The Online Streaming Act in the Senate, Government of the Dominion of Canada. Retrieved on October 20, 2022 from <https://sencanada.ca/en/sencaplus/news/the-online-streaming-act-in-the-senate/#:~:text=The%20Senate%20is%20debating%20Government,regulator%2C%20among%20many%20other%20things.>

⁹⁹News Release (2023 April 27), Online Streaming Act receives Royal Assent, Government of Canada Retrieved on 15th May from: <https://www.canada.ca/en/canadian-heritage/news/2023/04/online-streaming-act-receives-royal-assent.html>

¹⁰⁰Parliament of the European Union (2018 December 11) Directive (EU) 2018/1972 Establishing the European Electronic Communications Code. Retrieved on October 18, 2022 from <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32018L1972&from=EN>

with which OTT platforms in the EU must comply are outlined by the European Union Agency for Cybersecurity (ENISA) under their ‘Guideline on Security Measures under the EEECC’.¹⁰¹

The Body of European Regulators for Electronic Communication (BEREC) outlined the models in which OTT platforms function and their relative overlaps with traditional TSP services in order to ascertain which OTT platforms can be regulated similarly. BEREC has in the past also recognised the utility OTT platforms bring to TSPs and consumers, stating, “ultimately, it is the success of the [content and application providers] [...] which lies at the heart of the recent increases in demand for broadband access (i.e. for the ISPs’ very own access service)” This supports the view that without new and innovative online content and applications, the value of Internet access to users would be severely reduced.¹⁰²

BEREC classifies OTT as:

- **OTT0-** OTTs that qualify as Electronic Communication Services (ECS)
- **OTT1-** OTTs that do not qualify as ECS but compete with traditional TSP (e.g. Whatsapp)
- **OTT2-** OTTs that do not qualify as either (e-commerce, video and music streaming)¹⁰³

The European Union, however, still doesn’t mandate licensing models for OTT platforms in the manner envisaged under the Draft Bill. This is true for other progressive economies such as the United Kingdom and the United States of America as well.

7.5. Singapore

Singapore currently mandates licensing for OTT platforms and differentiates OTT communications services from traditional TSPs on the grounds of spectrum use. Essentially, to be regulated as a ‘telecommunications service’ under the country’s Telecommunications Act of 1999¹⁰⁴ spectrum usage is required. Due to OTT communications services being internet-based, they are covered under the Broadcasting Act¹⁰⁵ instead. Their licensing regime for OTT television service providers grants automatic permission to applicants if they take the undertaking to comply with Singapore’s Code of Conduct for Over-the-Top, Video-on-Demand and Niche Services¹⁰⁶, granting them a Services Based Operations (SBO) license as they operate on established telecommunications

¹⁰¹European Union Agency for Cybersecurity (2021 July 7) Guideline on Security Measures under the EEECC. Retrieved on October 18, 2022 from <https://www.enisa.europa.eu/publications/guideline-on-security-measures-under-the-eecc>

¹⁰²BEREC (2012 November 14) BEREC’s comments on the ETNO proposal for ITU/WCIT or similar initiatives along these lines. Retrieved on October 18, 2022, from <https://www.berec.europa.eu/en/document-categories/berec/others/berecs-comments-on-the-et-no-proposal-for-ituwcit-or-similar-initiatives-along-these-lines>

¹⁰³BEREC (2016 January) Report on OTT Services. Retrieved on October 19, 2022, from https://www.berec.europa.eu/sites/default/files/files/document_register_store/2016/2/BoR_%2816%29_35_Report_on_OTT_services.pdf

¹⁰⁴Ministry of Communications and Information (2021 December 1) Amended Telecommunications Act, 1999, Government of the Republic of Singapore. Retrieved on October 25, 2022 from <https://sso.agc.gov.sg/Act/TA1999>

¹⁰⁵Ministry of Communications and Information (2021 December 1) Amended Broadcasting Act, 1994, Government of the Republic of Singapore. Retrieved on October 25, 2022 from <https://sso.agc.gov.sg/Act/BA1994>

¹⁰⁶IMDA, Code of Conduct for Over-the-Top, Video-on-Demand and Niche Services. Retrieved on October 23, 2022 from <https://www.imda.gov.sg/-/media/imda/files/regulation-licensing-and-consultations/codes-of-practice-and-guidelines/acts-codes/ott-vod-niche-services-content-code-1mar2018.pdf>

infrastructure¹⁰⁷, authorised by the industry regulator, Info-Communications Media Development Authority (IMDA). The SBO licence is closer to a registration formality as these licences are not required to be updated regularly under the current regulations. Instead, they are valid up until the IMDA rescinds the licence for any notified breach¹⁰⁸

Furthermore, OTT Platforms that cater to audio-visual content streaming make available their offerings to all users all at once in an asynchronous manner (any person can watch the video or audio content as per their choices), which is in stark contrast to the one-to-one communications that are synchronously enabled by TSPs (two users are often needed to communicate on call, text, video calls etc.). It is a primary ground of differences in the operations of the two sectors, signifying their separate uses. Thus, if India were to consider a stringent licensing regime for the applications layer, it would mark a significant departure from international best practices

¹⁰⁷Ministry of Communications and Information (2021 December 1) Telecommunications (Class Licences) Regulations, 2011. Government of the Republic of Singapore. Retrieved on October 25, 2022 from <https://sso.agc.gov.sg/SL/TA1999-RG3?Doc-Date=20161003&Provs=P11-#pr1->

¹⁰⁸Chong Kin, L. (2021 December 10) Telecoms, Media and Internet Laws and Regulations Singapore 2022, Drew & Napier LLC. Retrieved on October 25, 2022 from <https://iclg.com/practice-areas/telecoms-media-and-internet-laws-and-regulations/singapore>

8. Conclusion

Internet and telecom offer distinct services and functions on completely different layers of network infrastructure. While telecom service providers operate on the network layer and are responsible for controlling and managing the infrastructure, OTT services function only on the application layer and have no part in determining the operation of the network layer. This critical distinction is important to keep in mind while deciding the regulatory approach. Further, the internet services are already regulated by a host of regulations and fall within the domain of MeitY, while broadcasting services fall within the domain of MIB. There is no need to tinker with the current regulatory framework unless there is substantial market failure. There are apt laws which govern internet and broadcasting services, and any new regulation would only result in fragmentation of the market.

Moreover, introducing a network usage fee regime will not only raise the entry barrier in the digital market but will also have massive implications on net neutrality. The introduction of network usage fees may create an environment of exclusive agreements between telecom and internet service providers, which can impact internet neutrality. Further, it has the potential to change the pricing of internet services and impact the competition in the market. We have to learn from other jurisdictions which have implemented such a model, especially South Korea, which is still grappling with the after-effects of its implementation.

While there are some of the critical issues within the digital space which have a close connection to the telecom sector, it is important to address them appropriately using relevant and distinct regulator mechanisms in a coordinated fashion. Inter-regulatory and ministerial coordination is key as we move forward towards addressing emerging issues within the digital space rather than moving towards a converged regulatory landscape. Besides, the coordinated approach would also aid in pooling resources and state capacity, which is essential for solving some cross-sectoral issues.

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