TRAI CONSULTATION PAPER ON

REGULATORY FRAMEWORK FOR OVER THE TOP (OTT) COMMUNICATION SERVICES

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Microsoft Corporation ("Microsoft") appreciates this opportunity to provides its responses to the important questions raised by the Telecom Regulatory Authority of India ("TRAI") in its Consultation Paper on Regulatory Framework for Over-the-Top (OTT) Communications Services, released November 12, 2018. As described more fully below, Microsoft respectfully believes that (i) leveling regulatory playing fields is not, in and of itself, an appropriate regulatory policy goal; (ii) so-called "OTTs" and Telecom Service Providers ("TSPs") are not similarly situated entities providing the same services; and (iii) imposing yesterday's regulations and regulatory frameworks on today's technology would erect unnecessary barriers to the entry of new and innovative internet-delivered apps, products and services, negatively affecting investment in TSP networks and, ultimately, India's economy.

CHAPTER 2

Q. 1. Which service(s) when provided by the OTT service provider(s) should be regarded as the same or similar to service(s)being provided by the TSPs. Please list all such OTT services with descriptions comparing it with services being provided by TSPs.

As the TRAI acknowledges in the Consultation, "there is no globally accepted definition of OTT services." (Consultation at para. 2.1.1) The term can mean many different things to many different people. Moreover, under just about any use of the term, it is incredibly broad because it captures potentially every type of service on the internet, whether banking, buying a movie ticket, voting or communicating. Therefore, Microsoft respectfully requests that the TRAI refrain from using this term and, instead, clarify the particular services and capabilities about which it seeks information. The European Union has done just this in its recently enacted European Electronic Communications Code ("EECC") wherein the term "over the top" is nowhere to be found in the nearly 600-page document. (See the full text of the EECC here.) Rather, as the TRAI noted, the EECC refers to three types of relevant "electronic communications services" – (i) internet access service; (ii) interpersonal communications services; and (iii) services that are engaged wholly or mainly in the conveyance of signals. (See EECC at Article 2.)

With respect to whether any particular type of communications capability delivered via the internet is the same or similar to some or all of the services provided by traditional TSPs, most comparisons are "apples to oranges" comparisons. While there may be some similarities in that both a phone call and a VoIP call enable a communication, there are numerous differences as well. First, consumers view applications delivered over the internet as quite different from services delivered by traditional telecommunications service providers, and such choice is exactly what a well-functioning competitive market should strive to retain. The vast majority of content, applications, and services delivered over the internet are not substitutes for or functionally equivalent to traditional telecommunications services. Indeed, by their very nature, applications used via the internet are not functionally equivalent to services delivered over traditional telecommunications networks. Traditional telephone services do not allow video chats, instant messaging, document and file sharing, or emojis as part of a conversation—all of which and much more are not only possible with applications accessed via the internet, but usually a necessity in the competitive marketplace.

Simply because these varying mechanisms enable a communication between and among people does not mean all of these communications capabilities are "the same." They are not the same from a technical perspective, a practical perspective or even from the end-user/communicator's perspective; and, these

differences cannot be ignored when assessing regulation, competition and consumer protection. The proliferation of broadband internet access – which is driven by consumer demand for apps and services delivered via the internet – is precipitating an untethering of communications networks and services, whereby the provider of access and transmission may or may not be the same provider of the communications and other applications facilitated by that access and transmission. This change is good for consumers, good for businesses, and good for the national economy. It is something for regulatory frameworks to welcome and encourage, rather than something to be feared or hindered by regulatory goals that are unrelated to addressing marketplace failures.

Q. 2. Should substitutability be treated as the primary criterion for comparison of regulatory or licensing norms applicable to TSPs and OTT service providers? Please suggest factors or aspects, with justification, which should be considered to identify and discover the extent of substitutability.

The concept of "substitutability" is not clear in the Consultation. Whether an app, product or service has substituted for another service has not been well-defined. For example, when a consumer uses OpenTable.com to make a dinner reservation for a restaurant in Delhi, OpenTable has "substituted" for the TSP's service in making the reservation because, without OpenTable, the user would have made a telephone call to the restaurant. In that case, the consumer has not literally substituted its TSP-provided calling service; it has simply chosen a complementary, so-called "OTT," tool for making a dinner reservation. Similarly, when a grandmother in Chennai chooses to engage in a Skype video call to communicate with her grandchildren in Gurgaon, she has not "substituted" Skype for the TSP's telephone service; rather, she has chosen a complementary tool that enables her to not only talk to her grandchildren, but also to see them. Therefore, when considering "substitutability" the TRAI should not consider these complementary situations as justification for expanding regulation. Rather, a 21st Century regulatory framework should establish two primary objectives: (i) ensuring that these new, innovative apps and services continue to thrive, grow and meet the demands of Indian consumers and businesses; and (ii) ensuring that traditional regulation of TSPs continues to be justified in a new, IP-based telecommunications marketplace.

In the U.S., for example, the Federal Communications Commission ("FCC") has been quite precise in concluding that so-called substitution is not justification for regulating new apps and capabilities. Rather, "replacement" of traditional telecom services is the bar by which regulation should be measured. Crafting the term "interconnected VoIP" ("iVoIP") service, the FCC has applied some traditional telecom regulations to any VoIP service that "(1) Enables real-time, two-way voice communications; (2) Requires a broadband connection from the user's location; (3) Requires Internet protocol-compatible customer premises equipment (CPE); and (4) Permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network." (47 U.S.C. Section 9.3) The FCC concluded that these iVoIP services should be regulated similarly to traditional telecom services because consumers replace their traditional telephone services with these iVoIP services – literally, the consumer would port his phone number to the iVoIP provider, cancel his traditional telecom service, and begin to use the iVoIP service in lieu of all calls he would have made on the traditional telephone service. Because users were replacing their traditional voice services with these iVoIP services, those users had an expectation that the iVoIP service would do many of the same things as their traditional services, e.g., connect to emergency services. In light of the consumer expectations, the FCC concluded it was appropriate to regulate them in a similar manner. *See IP-Enabled Services; E911 Requirements for*

IP-Enabled Service Providers, WC Docket Nos. 04-36 and 05-196, First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245 (2005), at paras. 23-25.

These iVoIP services are in stark contrast to apps and services that do not replace traditional telephone (including wireless voice) services. Most consumers have both a wireless telephone number (and perhaps even a wireline telephone number) that they use alongside a chat application, video calling application or online meeting service. These applications have not replaced the traditional TSP services; rather, they have offered new and more robust options for communicating, often including the sharing of documents, photos and videos. The European Union's EECC reached a similar conclusion as the U.S. – that apps and services that do not connect to the PSTN should not be regulated as traditional telecom services. (See EECC at Recital 44 and Articles 12(2) and Annex I) In fact, the EU carefully defined two new categories of communications services in the EECC: (i) "Number Independent Interpersonal Communications Services" (NIICS) and (ii) "Number Based Interpersonal Communications Services" (NBICS). The former, an NIICS, is a service that "does not connect with publicly assigned numbering resources, namely, a number or numbers in national or international numbering plans, or which does not enable communication with a number or numbers in national or international numbering plans" (See EECC Article 2 (6)). The latter, an NBICS, is a service that "connects with publicly assigned numbering resources, namely, a number or numbers in national or international numbering plans, or which enables communication with a number or numbers in national or international numbering plans." (See EECC Article (7)). Because NIICS are not replacements for traditional telecom services – and because they do not connect with E.164 numbers – the EU concluded they should not be subject to even the general authorization (i.e., registration) requirement in the Directive. (See EECC at Recital 44 and Article 12 (2)). Only NBICS, which are so-called "OTTs" that enable users to connect to the PSTN, are subject to many of the more traditional telecom regulations (see EECC at Article 12(2) and Annex I); however, even these services are not subject to a licensing obligation but, instead, are required to submit a fairly simple registration with the regulator.

The TRAI's goal in this proceeding should be one that ensures the continued growth and availability of innovative new services – for both consumers and businesses in India. Pulling a wide swatch of apps into India's traditional TSP licensing construct – simply because these apps enable some type of communication capability -- is certain to halt investment, innovation and the availability of such apps and services in India. This, in turn, will negatively impact investment in TSP networks.

Q. 3. Whether regulatory or licensing imbalance is impacting infusion of investments in the telecom networks especially required from time to time for network capacity expansions and technology upgradations? If yes, how OTT service providers may participate in infusing investment in the telecom networks? Please justify your answer with reasons.

There are three issues Microsoft would address with respect to regulation and the infusion of investments in telecom networks in India.

First, OTTs can do much more than they are doing today. Applications and services, delivered via the internet, already are doing their part by driving demand. Consumers and businesses in India are buying – and want to buy even more – internet access. As one study, from May 2017, found, "[o]nline service providers and network access providers have a symbiotic relationship. Rich interaction apps are a source of demand for network access and data use, which network operators can, and do, monetize. Apps and network[s] are complements, and growth of all types of apps is necessary for investment in ubiquitous

high-capacity networks to be commercially viable." (See Brian Williamson, Deconstructing the level playing field argument – application to online communications, May 2017, at page. 3.)

Unfortunately, however, these types of investments in India already are somewhat limited due to regulatory challenges under the current environment. For example, if an internet-delivered product or service allows a communication with the PSTN in India, the provider must enable location-based-routing capabilities to ensure compliance with India's intercarrier compensation fee structure. As a result, the product or service must be deprecated to withhold certain functionality and investment in India – for no reason other than compliance with regulatory obligations adopted in a different technological era and, now, unseen in most other countries. Moreover, certain types of internet-delivered services that could be hosted in India, thus generating further investment in the local economy, are forced out of the country. Therefore, extending the application of India's regulatory framework to apps and services will further threaten investment and innovation to the detriment of consumers and businesses in the country. The need of the hour is to bring the licensing, interconnection and tariff rules and regulations in line with the modern architectural requirements considering the way services are being consumed today. This will encourage the launch of state-of-the-art services and capabilities in India. This will in turn boost the balance sheets of TSPs with higher demand for data and proportionately impact infusion of investments. Needless to say, the Department of Telecommunication (DoT) has itself recognized in the "National Digital Communications Policy 2018" (NDCP) that there is a need to "review the existing licensing, regulatory and resource allocation frameworks to incentivize investments and innovation to optimize new technology deployments and harness benefits".

Second, India's telecom licensing framework imposes significant costs and is anarchic. DoT regulations impose an onerous licensing structure, including very significant up-front (in the form of Bank Guarantee etc.) and ongoing regulatory payments – fees that, in Microsoft's experience, dwarf those seen in most other countries. DoT has in NDCP categorically mentioned that it will be "reviewing of levies and fees including LF, SUC, and the definition of AGR and rationalization of Universal Service Levy". Firmly planted in an era of technologies that included physical infrastructure connecting customers to a telephone network that included local networks, long distance networks, and international networks, each with differing pricing and cost structures, India's telecom licensing framework – while "unified" into a single license several years ago in an attempt to accommodate the emergence of new technologies – has become as outdated as it is opaque and complex. The licensing regime works on the basis of defining services that can be provided by a TSP, but in today's world these services are no longer relevant considering they were defined more than a decade back. This causes confusion about what is regulated and what is not. It is not possible to use the existing license agreements to categorize today's services.

The system remains rooted in a cost structure of 20th Century technology and relies on payment of intercarrier fees intertwined with those outdated network architectures. As a result, the India telecom regulatory framework forces companies to design systems that defy today's innovative technological possibilities and make it difficult (if not impossible) for users (particularly business users) to deploy the vast array of communications capabilities available to their office locations in other countries across the globe. . Freeing companies – all companies, whether TSPs, Virtual Network Operators or the companies providing apps and services via the internet – to innovate and use today's IP-based technologies to interconnect private and public networks in ways that enable more productive business operations in India, would benefit all of India. Further, we believe it would lead to significant investment in India's telecommunications infrastructure as new entrants, large and small, would enter the India market to

provide a vast array of productivity and communications capabilities currently provided from outside of India, thus positively impacting infusion of investments in the sector.

Third, prescribing licensing conditions for services delivered via the internet will not infuse investment in TSP networks. Microsoft does not see any connection between subjecting OTT players to a licensing regime and the possibility that would infuse investment in networks required for its expansion by TSP. The consultation paper notes that the DoT committee has already recognized a coming complete transition of telecom networks to IP networks, and as a result, concerns about pricing arbitrage will be substantially reduced. Therefore, it would be undesirable to force IP based voice communication OTT players to be governed by a pre-existing licensing framework intended for a non-IP marketplace, as it will not lead to any increment in revenue collections for TSPs and DoT over and above what is currently happening. Conversion of all telecom traffic to IP is a reality and is poised to happen sooner than later. To protect those TSPs who have not upgraded their network to an all IP network, will take India back in time and not propel the investment in the sector and diminish the NDCP vision.

To conclude, in our view it is the outdated and anarchic licensing conditions that is not aiding in unleashing of launch of plethora of modern services available to rest of the world and it is this imbalance that is stifling consumer reach and impacting expansions in the network. It will not be appropriate to subject OTT also to similar anarchic and obsolete licensing framework.

Q. 4. Would inter-operability among OTT services and also inter-operability of their services with TSPs services promote competition and benefit the users? What measures may be taken, if any, to promote such competition? Please justify your answer with reasons.

It is unclear what market failure TRAI is addressing in asking whether interoperability would "promote competition and benefit users," particularly given TRAI's recognition of the benefits the internet -- and apps and services delivered over the internet -- are bringing to India. In Chapter 3, TRAI notes that "internet traffic will grow fourfold from 2016 to 2021"; that wireless data "has already increased from 4.6 exabytes…to 20 exabytes" in just one year; and that growth in apps and services means growth in TSPs' businesses. (See Consultation at Section 3.1) Moreover, TRAI recognizes that "the growth of OTT services has undeniably led to tremendous social and economic benefits. These benefits range from ease of communication among persons situated in different parts of the world, access to information, entertainment and business opportunities, improved transparency and e-governance solutions." (Consultation at para. 3.4.4) In light of this positive marketplace news, what is the market failure an interoperability requirement would be designed to address?

One apparent justification for this interoperability proposal is the possibility that certain OTTs may become dominant in the marketplace and, thus, exploit their position to lock consumers into using their OTT service. (See Consultation at para. 3.4.3) While this, in theory, might justify some regulatory oversight, it is premature to consider any such regulation. There is no evidence of such alleged dominance. On the contrary, given the ease with which a consumer can find an app online, download it to their device, and begin using it, there is evidence that apps and other online services that enable communications capabilities are quite competitive. Moreover, of the hundreds of communications apps available on the internet many are directed at certain audiences or certain types of communications capabilities – from dating apps to video chat apps to texting apps to social network apps. (See The Economic and Societal Value of Rich Interaction Applications (RIAs) Final Report, WIK, May 2017). Finally, multihoming – the ability of a user to download and use multiple apps on a single device – further protects

against any one application's ability to dominate the communications marketplace. As with any other regulatory obligation, interoperability should not be imposed prior to identifying a specific market failure that can be effectively addressed by such a remedy.

Q.5 Are there issues related to lawful interception of OTT communication that are required to be resolved in the interest of national security or any other safeguards that need to be instituted? Should the responsibilities of OTT service providers and TSPs be separated? Please provide suggestions with justifications.

Microsoft appreciates the importance of the issues and concerns raised by the TRAI regarding cross-border data transfers. Having considered these same issues across the globe, Microsoft believes the only practical approach toward a lasting solution with respect to cross-border data transfers is for governments to engage with each other through modern and principled bilateral and multilateral agreements.

We are encouraged that both the United States and the European Union are taking the first steps toward international agreements on digital evidence, and believe these agreements have the potential to reform and modernize digital evidence laws across the world. We would be pleased to see India engage with the United States, Europe, and others to establish a concrete and mutually recognized framework for cross border data transfer and access to evidence in place of the proposed data localization requirements. Further, we believe that data localization regimes would not only thwart the development of international rules, but also negatively impact a data-driven economy and AI innovation in India.

Rather than consider a data localization approach, India could look to the approach Brazil enacted in August. At one time, Brazil proposed data localization requirements similar to those proposed in India's draft bill. However, Brazil ultimately understood the negative impacts such an approach could have on the Brazilian economy, concluded that a more balanced approach could achieve their security and privacy objectives while also enhancing the positive economic impacts of a global cloud, and passed a law that is very much interoperable with global standards and GDPR. This will likely result in more data flowing to Brazil, which will benefit the Brazilian economy as well as Brazil's security aspirations. We believe India could achieve its objectives through a similar approach.

In the Consultation, TRAI mentions both the CLOUD Act and the Budapest Convention. Microsoft believes both of these are effective solutions to particular challenges of cross-border data transfers. The CLOUD Act requires the U.S. Attorney General and Secretary of State to certify and provide the U.S. Congress with a written explanation that the foreign country meets basic privacy and human rights standards, including by demonstrating a commitment to promote and protect the global free flow of information. India's proposed data localization requirements run counter to this CLOUD Act obligation and would potentially block India from leveraging this clear and internationally recognized mechanism for obtaining access to digital evidence in a manner that is both efficient and protects the privacy and due process rights of individuals. Moreover, the Budapest Convention on International Cybercrime & Evidence Standards promotes international standards that protect against national security threats by requiring that signatories have "adequate substantive and procedural laws on cybercrime and electronic evidence." India should consider becoming a party to the Budapest Convention on Cybercrime to further protect its citizens while also enabling the growth of cloud services, AI and other innovations that will benefit India's economy. The Budapest Convention, moreover, is an important factor in a CLOUD Act analysis. Signing on would be an important step in achieving a bilateral agreement between India and the U.S.

Finally, it is important to note that a data localization requirement would likely make it harder for India to achieve an adequacy determination and promote trade with Europe, as government access to and use of data weighs heavier in adequacy evaluations than do restrictions on private sector access and use of data.

We are committed to working with the Indian government, and with governments around the world, to build lasting, concrete, and responsible frameworks for cross-border data transfer and law enforcement access to data.

Q. 6 Should there be provisions for emergency services to be made accessible via OTT platforms at par with the requirements prescribed for telecom service providers? Please provide suggestions with justification.

Microsoft believes this question is one that could deserve its own stand-alone consultation and technical standardization process. Europe, Australia, the U.S. and other countries currently are grappling with myriad technical, operational and regulatory issues surrounding the provision of emergency calling services, including so-called Next Generation Emergency Calling. The issues are complicated by the fact that emergency calling requires substantial coordination between the service provider (e.g., the TSP) and the emergency calling center(s). For example, simply because a wireless carrier can connect a call to the emergency number(s) does not mean that the emergency calling system can determine where that caller is located at that time or consume location information that the wireless service provider may be able to provide to the call center. Microsoft is not familiar with India's emergency calling system so additional discussion and understanding would be required before formulating a view on the full breadth and depth of the issues to be addressed. But, based on our experience addressing this issue elsewhere, among the issues to consider before imposing an emergency calling obligation on any new type of service are:

(i) What type of technology is used by the service provider vis-à-vis the technology of emergency call center, e.g., is the service provider on the internet while the emergency call center is on the PSTN?
(ii) If the emergency call centers are to be moved to the internet, what are the security risks (e.g., cyber attacks) and how can those be addressed?
(iii) How many emergency call centers are there in India and how can service providers ensure they route an emergency call to the appropriate call center?
(iv) What location information is available to the service provider to enable routing to the appropriate call center?
(v) What system is in place to route calls to the appropriate call center?
(vi) Can the emergency call center accept a latitude/longitude coordinate from the service provider to map the caller's location and dispatch emergency assistance?
(vii) Does the emergency calling system in India depend on the caller having a telephone number – either for purposes of routing the call to the appropriate PSAP and/or for purposes of enabling a call-back, should the call be dropped? If telephone numbers are a key component of the existing emergency calling network, how would the system accommodate communication capabilities that have no telephone number?

Q. 7 Is there an issue of non-level playing field between OTT providers and TSPs providing the same or similar services? In case the answer is yes, should an regulatory or licensing norms be made applicable to OTT service providers to make it a level playing field? List all such regulation(s) and license(s), with justifications.

Creating a regulatory "level playing field" should not, in and of itself, drive regulatory and policy decisions in India (or any other country). Rather, Microsoft would recommend that the TRAI revert to a more fundamental regulatory approach of first identifying a specific market failure or consumer harm that has arisen due to a lack of regulation; identify specific, individual requirements it proposes to remedy that failure or harm; and then propose specific regulations for the relevant products and services. For example, TRAI considers in this consultation the ability of users to reach emergency services as a capability that might require regulation to effectuate. This is an appropriate question to raise, given the importance of emergency calling to consumers in India. However, imposing emergency calling regulations as a means of evening a score among providers of varying types of communications capabilities is not an appropriate justification for regulation. On the other hand, it would be justifiable and appropriate to impose an expanded emergency calling if (i) consumers have come to expect that they will get emergency calling access from a broader array of communications capabilities, and (ii) the emergency calling system in India can accommodate emergency calls from this broader array of communications technologies and functionalities. Thus, identifying a specific consumer harm or marketplace failure that can be directly remedied by the application of a regulation should be the role of telecom regulation.

Justifying regulation based solely on a "level playing field" assertion, moreover, will threaten the marketplace that has emerged as a result of the internet. Traditional telephone services offered by TSPs generally were regulated because the market did not function properly, *e.g.*, there was limited competition due to high barriers to entry; there were long-term contracts that locked in consumers and made switching difficult; and there were often high prices (made more onerous by the inability to switch easily among a limited number of providers). None of these things are present with the so-called "OTT" communications apps that India businesses and consumers use today. One should not impose regulation simply because it was imposed in the past or to address a perceived unfairness between competitors. Rather, as noted above, Microsoft urges the TRAI to establish a specific public interest justification for each particular proposed regulation.

Conversely, if regulations have long been in place and are no longer necessary – or, worse, are imposing unnecessary, unjustified and burdensome costs such as the significant licensing and financial obligations that are imposed on India's telecom licensees (including those intending to operate only virtual "networks") or are restricting the ability to deploy rational IP-based and internet-driven architectures – the Government of India should consider eliminating those obligations. As noted earlier herein, it appears that India's regulatory framework remains situated in 20th Century concepts and assumptions about networking, infrastructure and the costs of operating those systems and exchanging traffic among them. By starting from a principled and holistic view of communications regulation, and crafting specific regulations from the ground up, on a requirement-by-requirement basis in view of the technological realities and possibilities of today, there is an opportunity to fashion a regulatory framework that encourages innovation and competition while providing maximum flexibility for future growth and development of all players in the digital communications ecosystem.

Q. 8 In case, any regulation or licensing condition is suggested to made applicable to OTT service providers in response to Q. 7 then whether such regulations or licensing conditions are required to be reviewed or redefined in context of OTT services or these may be applicable in the present form itself? If review or redefinition is suggested then propose or suggest the changes needed with justifications.

Although Microsoft does not believe any telecom regulation should be applied to communications capabilities beyond those such as the "interconnected VoIP" service described above (whereby the service is intended to replace a user's existing PSTN phone service with a VoIP service that enables calls both to and from the PSTN), if any regulation is extended to services provided via the internet, it will be important that regulations recognize the network-tethered vs. non-network-tethered differences among services. For example, some of the auditing requirements in India's current licensing system would be inapposite to a service with no network, no infrastructure, no actual facilities to inspect. In a marketplace where services are provided by the cloud – oftentimes via software running on servers – on-site inspections of a physical piece of hardware simply will not exist. Therefore, rules expressly – or even inherently – stating that a licensee must ensure the availability of an on-site inspection of facilities as part of the license obligation would have to be eliminated to reflect to realities of an internet-based, cloud-based marketplace.

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

Not at this time.