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No. RP/ FY15-16/087/064

Dated: 24th April, 2015

Shri Robert Ravi
Advisor (TD & QoS)
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J.L. Nehru Marg, Old Minto Road
New Delhi - 110002

Subject: Consultation paper on Regulatory Framework for Over-The-Top (OTT) Services

Ref: TRAI consultation paper no. 2/2015 dated 27th March 2015

Dear Sir,

This is with reference to your above mentioned consultation paper. In this regard, please find enclosed our response for your kind consideration.

Thanking You
Yours Sincerely
For Bharti Airtel Limited

A handwritten signature in blue ink, appearing to read 'R. Gandhi', with a horizontal line underneath.

Ravi P. Gandhi
Chief Regulatory Officer (Policy)

Bharti Airtel's response to TRAI Consultation Paper on Regulatory framework for OTT services

Preamble:

We thank the Authority for initiating this consultation on 'Regulatory Framework for OTT services' and record our sincere appreciation for an objective, progressive and fair consultation paper that includes all the relevant and critical issues facing the industry. We sincerely hope that the present exercise will culminate in forward-looking recommendations that will enable the industry to meet the national objectives of 'Digital India' and 'Broadband for All'.

We fully support the concept of Net Neutrality. Equally we believe 'Internet for All' is a vital prerequisite in India given the low level of penetration. India therefore also needs Net Equality. As a consequence, all business practices must be held up to the Fair, Reasonable and Non-Discriminatory (FRAND) standard. After all, the socio-economic benefits of internet penetration and digital inclusion are well acknowledged. According to a study by ICRIER, "Indian states can expect to grow 1.2% points higher for every 10% increase in mobile penetration rates". Another study by the World Bank indicates that a 10 per cent increase in broadband penetration corresponds to a 1.21 and 1.38 percentage point increase in GDP for high-income and low-income economies, respectively. It is because of this that the Government of India has listed 'Digital India' as an urgent national priority with 'Broadband for All' as a fundamental pillar that will aid the pursuit of this objective.

We believe that there are three key enablers for achieving this national objective. They include:

1. A viable industry and greater investment

The viability of the telecom industry is assessed on the basis of its current financial health, as well as prospects for future investments.

The Indian internet market displays peculiarities that differentiate it from a majority of other nations. Internet penetration in India is still very low, at around 255 million total internet users. Of these, a mere 86 million users have access to broadband internet. Providing 'Broadband to all' will require a significant expansion of TSPs' networks. This expansion will ultimately depend on the ability of TSPs to secure more investments, acquire more spectrum, and deploy more infrastructure/towers.

TSPs have invested Rs.750,000 Crores since inception of the Industry. Of this, Rs.2,90,000 Crores has been invested in acquiring radio spectrum during the last five years. Further, It is expected that the industry will need to invest an additional Rs.500,000 over the next 5-7 years towards spectrum, building towers, fiber and core network resources.

However, over the last couple of years the financial health of the industry has deteriorated, with the cumulative debt burden going up from Rs 82,726 crores in 2008-09 to over Rs.3,00,000 Crores in FY 2014-15. The Debt to Equity ratio of a majority of the TSPs has doubled since 2010-11; RoCE is observed at 1% of the Industry as a whole. Therefore, it is critical that any policy measures or regulatory framework for internet and OTT facilitates the financial viability of the sector.

In addition to facilitating the financial viability of TSPs, policy makers in India need to critically re-examine the nation's radio spectrum, emissions standards and right of way policies. Indian TSPs hold an abysmally low quantum of spectrum, approximately 14MHz on average, which contrasts strikingly with international counterparts in developed markets, e.g., EU allocation (92.6MHz), UK (82.2MHz), France (138.5MHz), Spain (100.6MHz) and the US (96MHz). TSPs cannot build enough towers because EMF standards are ten times more stringent here than in the rest of the world. They also struggle with fiber rollouts due to inconsistent, restrictive and cost prohibitive Right of way policies. These constraints are big obstacles to achieving the national objectives.

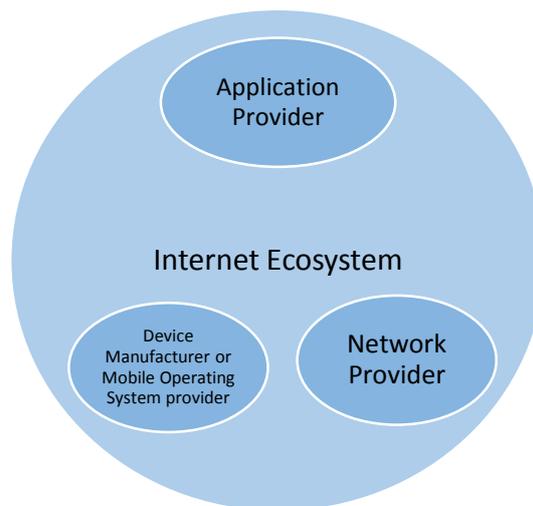
Therefore, there is an urgent need for a regulatory and policy framework that helps the industry improve its financial situation, acquire more spectrum, and attract the investments needed for building and expanding broadband networks at a rapid pace.

2. Innovation at all levels

Currently, India has over 960 million wireless voice subscribers. This was made possible by tremendous innovation across a large ecosystem of networks, devices and applications/VAS, which resulted in customers enjoying the best services at some of the lowest tariffs anywhere in the world. Every player in the ecosystem innovated in an open and collaborative manner to create value for the consumers.

India needs to continue in the same spirit if it is to connect a billion potential broadband netizens. The new world of the internet offers a range of life-enhancing services powered by a vibrant, mobile ecosystem that connects the physical and digital worlds. This convergence will unleash a new dimension of services that will improve the quality of consumers' lives and the productivity of their enterprises. The benefits of mobility will spread far beyond communications to provide dramatic improvements in sectors such as energy efficiency, security, e-governance, health and education. The mobile industry can realize this vision through collaboration between all its players: application developers, handset manufactures and network operators.

This means innovations across cheaper smartphones, lower cost networks, and broad ranging applications as well as pricing structures that enable more digital inclusion.



In the internet eco-system, OTT application providers have played a significant role in stimulating uptake of internet services, and will continue to be important for the growth of the entire internet economy. OTT application providers engage with consumers in a number of ways, which increases the value proposition of both devices as well as networks.

The internet ecosystem has grown to its current state because of the immense plurality of applications and content, and the future growth of TSPs is unequivocally linked to the growth of content/application developers on the internet. Application/content providers (OTTs) have proved critical for the growth and adoption of internet services, and will play an increasingly important role in bringing localized content and in enabling m-Governance. OTT application provider have so far thrived in a largely unregulated environment, and caution must be exercised to ensure that any regulation does not hamper competition or innovation among these stakeholders.

Innovation is equally desirable in the network layer, and this holds especially true in the case of capacity-starved wireless networks. It is well established that wireless is set to be the dominant internet access technology, and addressing growing demands will require innovations that increase the efficiency of radio spectrum and other network resources. Locating the content closer to the point of consumption through Content Delivery Networks (CDN) is one such innovation, the use of which allows internet content to be transmitted quicker by strategically caching it at different locations. CDNs ensure that content is served quicker than in cases where such technology is not applied.

Recent studies also indicate that innovations such as zero rating yield greater digital inclusion. Such plans allow first time users to experience the Internet free of cost, and lower costs for existing users. These plans, if structured appropriately, can even lead to increased competition in the internet economy, and should certainly be adopted to truly drive the agenda of 'Broadband for All'.

These are some of the indicators of a healthy ecosystem within which stakeholders have sought to achieve higher orders of technical efficiency and pursued innovations that have had a positive impact on society. These innovations must continue unhindered, especially if we are to realize the goal of bringing broadband services to each and every one of us.

3. Providers treated equally: same services, same rules

Currently, TSPs and OTT communication service providers offer the same communication services such as voice. While TSPs are subject to a number of regulatory & licensing requirements, such as payment of licence fee, taxes, security conditions, etc., OTT communication service providers have no such obligations.

The other important point to highlight is the fact that, at present, there exists a substantial arbitrage between voice and data realization per unit of network resource and, an unintended consequence of a significant growth in OTT voice communication services (and the resultant substitution of TSP voice), could well result in one of two possibilities - a significant rise in data prices or a slowdown in investment, either of which would set back the vision of Digital India. This must be kept in mind while formulating policy since it could affect broadband penetration. These issues are highlighted below:

a) Contribution to national development

TSPs contribute significantly towards national development by purchasing spectrum worth thousands of crores and paying approximately 25 per cent of their revenue in the form of LF, USOF, SUC, and service tax to the national exchequer. Since 2002, TSPs have contributed an approximate Rs. 62,000 crores to USOF alone. The contribution has been significant enough to allow the government to initiate the process of rolling out a nationwide OFC network with an aim to extend fibre connectivity from the block level to the panchayat level by connecting 2,50,000 Gram Panchayats. This project, once completed, will enable access to and usage of several e-services such as healthcare, education, financial services, agriculture, e-governance and will be a catalyst for increasing broadband penetration in rural areas so as to foster overall socio-economic development.

By contrast, OTT Communication Service Providers do not pay levies or, indeed, aid national development in any way whatsoever. And they certainly bypass national security norms. While these OTT Communication Service Providers do offer telecommunication services, they also do not buy spectrum or pay regulatory levies/taxes; and hence do not contribute in any way other than the provision of services that the TSPs also provide.

b) Obligation to meet national security requirements:

OTT Communication Service Providers do not offer any lawful interception to national security agencies even for Indian citizens residing in India. Further, since their

switching servers are installed in foreign countries, OTT's communication traffic from these servers can be intercepted by those foreign governments, but not by the Indian government. They are also not obliged to provide subscriber and call logs to the security agencies in India unlike TSPs who are bound to do so as per their licensing obligations.

It is important to reiterate that before any policy on OTT Communication Services is drawn up, the unintended consequences are understood. As already mentioned, there is a substantial arbitrage available between voice and data today. While a minute of voice, which utilizes network resources equivalent to 0.25MB of data, realizes a revenue of 36 paisa, TSPs realizes only six paisa when the same network resource is consumed as data for OTT communication services (VoIP). This differential pricing was designed to drive data adoption in the Indian context.

At current realization, every 1 per cent of TSP voice minute that is substituted by OTT VoIP would lead to a Rs.1200 crores revenue loss to the industry. This would result in either data prices going up significantly or an equally severe blow to Industry revenues and its contribution to the development agenda through license fees, SUC, USOF and service tax. Either of these would be a significant setback to the Digital India Agenda.

Therefore, it is critical that the playing field be leveled and those providing the same services be governed by the same set of rules. In short, the OTT Communication Service Providers should be governed by the same set of rules as are applied on TSPs.

In summary:

The vision of connecting a billion Indians is not only socio-economically justifiable, it is critical for the growth of the nation. Ubiquitous and affordable broadband access that will ultimately serve such a large ecosystem of consumers will require significant investments as well as increased innovations across networks and applications.

The financial condition of industry seriously calls into question its ability to bring affordable services to such a large number of consumers, and any policy change should be done within the context of achieving broadband for all. The contribution of OTT application providers in the growth of Internet adoption is significant, and further innovation in this space will drive future growth which is what will ultimately lead to digital inclusion.

The primary concern of TSPs is the absence of any regulatory parity in the treatment of the services provided by the two stakeholders in the value chain, even though the services offered are the same. TSPs and OTT Communication Service Providers both offer voice communication services, but are subject to different rules. While TSPs commit significant resources to connect subscribers and provide voice services, OTT Communication Service Providers offer their services on the data network of TSPs without making any kind of investment in, or contribution to, national development. The need of the hour, therefore, is compelling action prompted by an urgent need for Net Equality.

We believe that various questions in the consultation paper can be broadly categorized into three major sections: (1) Issues related to the licensing regime for OTT Communication Service Providers; (2) Issues related to Net Neutrality; and (3) Issues related to pricing and revenue share arrangements between TSPs and OTTs, if required. Hence, we are submitting our response structured along these three sections.

Section 1: Issues relating to the licensing regime for OTT Communication Service Providers:

Question 1: Is it too early to establish a regulatory framework for OTT services, since internet penetration is still evolving, access speeds are generally low and there is limited coverage of high-speed broadband in the country? Or, should some beginning be made now with a regulatory framework that could be adapted to changes in the future? Please comment with justifications.

Question 2: Should the OTT players offering communication services (voice, messaging and video call services) through applications (resident either in the country or outside) be brought under the licensing regime? Please comment with justifications.

Question 3: Is the growth of OTT impacting the traditional revenue stream of TSPs? If so, is the increase in data revenues of the TSPs sufficient to compensate for this impact? Please comment with reasons.

Question 5: Do you agree that imbalances exist in the regulatory environment in the operation of OTT players? If so, what should be the framework to address these issues? How can the prevailing laws and regulations be applied to OTT players (who operate in the virtual world) and compliance enforced? What could be the impact on the economy? Please comment with justifications.

Question 6: How should the security concerns be addressed with regard to OTT players providing communication services? What security conditions such as maintaining data records, logs etc. need to be mandated for such OTT players? And, how can compliance with these conditions be ensured if the applications of such OTT players reside outside the country? Please comment with justifications.

Question 7: How should the OTT players offering app services ensure security, safety and privacy of the consumer? How should they ensure protection of consumer interest? Please comment with justifications.

Question 16: What framework should be adopted to encourage India specific OTT apps? Please comment with justifications.

Question 17: If the OTT communication service players are to be licensed, should they be categorized as ASP or CSP? If so, what should be the framework? Please comment with justifications.

Question 19: What steps should be taken by the Government for regulation of non-communication OTT players? Please comment with justifications.

Bharti Airtel's Response

1. The same services should be subject to the same rules

- 1.1. At the outset, we wish to state that OTT communication services are quite distinctive from OTT application services. While applications services are based on the content posted on web sites (such as music, video, and text) and are available to the general public, OTT Communication services (VoIP) are real time, person-to-person telecommunications services. OTT Communication Services are therefore exactly the same as telecommunications services provided by licensed telecommunications providers except that instead of providing these services through their own networks, OTT communication service providers provide these services over the internet.
- 1.2. The VoIP service offered by OTT communication service providers is a perfect substitute for PSTN/Internet Telephony voice services offered by licensed TSPs. As per the National Telecom Policy and the present licensing regime, the privilege to offer these services is reserved under the Unified/UAS/ISP License granted under Section 4 of the Indian Telegraph Act. In contrast, OTT Communication Service Providers offer these services without holding a telecom license in India and, therefore, circumvent Indian telecom licensing norms.
- 1.3. TSPs have invested billions of dollars in spectrum and networks in the belief that the prevailing licensing and regulatory regimes make it mandatory for the operator to install their own network to provide voice services. As per TRAI¹, a stable regulatory framework that promotes investment is *sine qua non* if anticipated investments for rolling out the ambitious Digital India mission are to materialize. However, OTT Communication Service Providers undermine the prevailing licensing regime of the country by offering licensed services without holding a valid license. Therefore, we believe that this issue needs to be resolved on an urgent basis as these unlicensed services have a direct and profound impact on network investments, an element that is critical to achieving the vision of 'Broadband for All'.

¹ TRAI's recommendations on "Definition of Revenue Base (AGR) for the Reckoning of Licence Fee and Spectrum Usage Charges" dated 06.01.2015

1.4. While it is important for OTT Communication Service Providers to be brought under a regulatory framework on an urgent basis, OTT application services providers who are merely the end users of the internet need not be brought under any licensing/regulatory regime.

2. Contribution to national development

2.1. TSPs contribute to national development by buying spectrum worth thousands of crores and paying Licence Fee, USOF, Spectrum Usage Charge and other Central/State Taxes. In the last five years, TSPs have purchased Rs.2,80,000 crores worth of spectrum and paid Rs.82,000 crores as Licence Fee, USOF and SUC to the government. In the last five years, Airtel has contributed approximately Rs.1,00,000 crores to the national exchequer in the form of Licence Fee/SUC, Direct & indirect taxes, and Spectrum charges (including commitments).

2.2. By contrast, OTT Communication Service Providers (who are often US based companies with market capitalization well in excess of \$100B) do not contribute to national development in any way since they neither pay any regulatory levies nor any central or state taxes to the government. We believe that this imbalance can be addressed by bringing them under a suitable regulatory framework that mandates OTT Communication Service Providers to contribute towards national development by paying regulatory levies and other taxes, similar to those being paid by TSPs.

3. Support for national security

3.1. Today, TSPs are subject to many national security and other norms, some of which we have listed:

- Domestic traffic to stay within India
- Network to be set up within service area or country
- Provision of lawful interception to the security agencies
- Access of subscriber database to the security agencies
- Maintenance of CDR/IPDR for various security requirements.

3.2. OTT Communication Service Providers, meanwhile, are able to offer calls across telecom networks in India using strong encryption and switching servers located outside the country and hence effectively prevent any lawful interception and/or monitoring of calls handled in their switching servers/network. These players also avoid sharing subscription details of customers and/or logs of communications. In fact, some OTT Communication Service Providers facilitate spoofing of CLI, which makes it difficult to identify or locate the actual caller.

3.3. National security agencies and the Department of Telecommunications have often voiced their interest in having Indian TSPs intercept and monitor the VoIP traffic offered by OTT Communication Service Providers. However, since the TSPs merely provide internet, they are unable to intercept and monitor services which are provided in a strong encrypted form and through switching servers not under their control. Besides national security concerns, Indian TSPs also continue to risk violations of their licensing conditions, specifically the condition that mandate them to provide for lawful interception and monitoring of each type of service/product including internet/internet telephony passing through their networks.

3.4. Therefore, OTT Communication Service Providers should allow national security agencies to intercept their traffic as per the law and also fulfill other applicable security conditions complied with by Indian TSPs under their license agreement as well as under the IT Act.

4. Customer privacy and other rules

4.1. TSPs, while complying with the terms of their license, ensure that the privacy of communications is protected and prevent all unauthorized interceptions of messages. However, OTT Communication Service Providers are not subjected to any such license conditions.

4.2. Further, in order to curb the menace of UCC, TSPs follow TRAI regulations of Unsolicited Commercial Communications (UCC) and National Do Not Call Registry (NDNC). Stringent penalty provisions for violation of these regulations have been prescribed by TRAI. However, OTT Communication Service Providers' services are outside the scope of this regulation and therefore they are able to generate significant amounts of spam and unsolicited communication without any adverse effects. Similarly, OTT Communication Service Providers are not subject to customer-centric regulation, such as metering and billing audits, quality of service, etc.

4.3. Therefore, it is essential that OTT Communication Service Providers be brought within the ambit of a regulatory regime and made to operate under a uniform set of rules as are applicable to TSPs, relating to security, safety and privacy of communication, billing and Quality of Services for Indian customers.

5. TSP and OTT Communication provider's tie-ups should not be misconstrued as interconnections

5.1. The most fundamental aspect of the interconnection is that it only happens at the peer level, e.g., "voice to voice" or "data to data". While OTT communication service providers are application providers offering voice, TSPs in their capacity as

data/internet providers are providers of bearer services only. Therefore, any association between OTT Communication Service providers and TSPs cannot be termed as an interconnection.

5.2. At best, OTT communication providers can buy/negotiate the bulk data capacity they need as bearer infrastructure for their VoIP/voice services from the TSPs. Therefore, OTT Communication Service Providers cannot be termed interconnecting partners even if they were to be licensed within the country.

Summary:

We believe it is important that the concept of Service Neutrality be acknowledged, and the provision of the same services be governed by the same set of rules. At present, while TSPs are heavily regulated and pay huge shares of their revenues to the government, OTT Communication Service Providers are not subjected to any such requirements even though they provide exactly the same services. We have drawn up a table to illustrate this point further.

S. No.	Area of regulation	TSPs	OTT Communication Service Providers
1	Licensing regime	✓	X
2	Purchase of spectrum for providing communication services (<i>TSPs have purchased Rs.2,80,000 crores worth of spectrum in the last five years</i>)	✓	X
3	Payment of Regulatory Levies and Taxes (25% of TSPs' revenue, which includes 8% licence fee {including 5% contribution to USOF fund}, 5% spectrum usage charge, 14% service tax)	✓	X
3	Lawful Interception and fulfillment of other security conditions	✓	X
4	Consumer Privacy and other regulations such as emergency services	✓	X
5	QoS norms	✓	X

Therefore, it is critical for OTT Communication Service Providers to be brought under a regulatory framework which prescribes the same rules for the same services. TRAI should ensure that a single, consistently applied policy framework is put in place that covers all competitors (offering similar services) regardless of technology or type of provider. The homogenous policy/regulatory framework will stimulate growth in the economy and will motivate TSPs to invest further in network expansion and upgrades.

Absence of a Same Services, Same Rules framework will result in unintended consequences leading to increased data prices and set back the agenda of 'Broadband for All'.

Section 2: Issues related to Net Neutrality

Question 9: What are your views on net-neutrality in the Indian context? How should the various principles discussed in para 5.47 be dealt with? Please comment with justifications.

Question 10: What forms of discrimination or traffic management practices are reasonable and consistent with a pragmatic approach? What should or can be permitted? Please comment with justifications.

Question 11: Should the TSPs be mandated to publish various traffic management techniques used for different OTT applications? Is this a sufficient condition to ensure transparency and a fair regulatory regime?

Question 13: Should TSPs be allowed to implement non-price based discrimination of services? If so, under what circumstances are such practices acceptable? What restrictions, if any, need to be placed so that such measures are not abused? What measures should be adopted to ensure transparency to consumers? Please comment with justifications.

Bharti Airtel's Response

1. Principles of Net Neutrality should accelerate the vision of 'Broadband for All'

1.1. The Authority has highlighted several principles that must be adhered to, to preserve the democratic power of the public internet. We provide our comments on each principle:

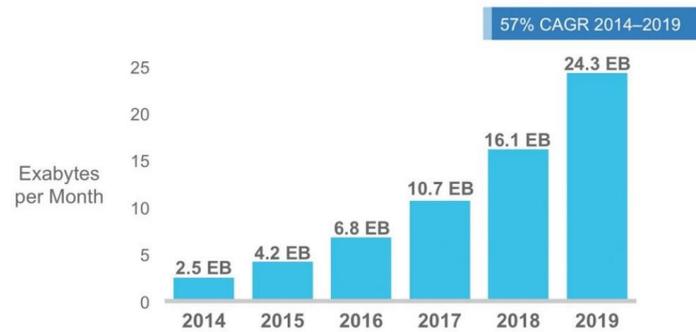
1.1.1. **Effective competition and user choice facilitated through the provision of sufficient information and the ability of customers to switch:** The Indian telecom market is recognized as one of the most competitive markets in the world. Users have benefitted from this competition and enjoy services at among the lowest tariffs. The Authority has also highlighted that sufficient information must be available to end users to make informed choices, and that they should be able to act on this information by switching providers if they so desire. We wish to state that such information is always provided to end-users, and that switching from one provider to another has already been simplified by the MNP policy.

- 1.1.2. **Transparent traffic management practices:** We completely support the six principles of transparency as proposed by OFCOM, e.g., Appropriate, Accessible, Understandable, Verifiable, Comparable and Current can be reasonably applied in the Indian context as well.
- 1.1.3. **Low Switching costs:** With the introduction of MNP, switching costs associated with telecom services have been greatly reduced, and customers can switch providers quickly with virtually no disruption in services, while retaining their numbers.
- 1.1.4. **QoS Assurances:** Reasonable QoS assurances can and should always be a requirement.
- 1.2. Further, the technical and commercial freedom to plan and operationalize the network should not be erroneously linked to net-neutrality, and must most definitely be permitted. This will help greater adoption and proliferation of broadband services at affordable prices.
- 1.3. There is a pressing need to provide broadband to a billion Indians. This need can be appropriately addressed if services are affordable enough for large scale adoption. Hence, pricing innovations such as zero rating, which will act as a catalyst in widespread adoption of broadband services, should not be stopped in any manner. Stopping such activities will violate the principles of tariff forbearance and the fundamental commercial and marketing tools that are used across all Industries to drive category adoption.

2. Traffic will need to be managed sensitively

Internet traffic is increasing globally, with increased demands reinforcing the need for traffic management. Globally, mobile data traffic grew 69 per cent in 2014, up from 1.5 exabytes per month in 2013 to 2.5 exabytes per month in 2014. Mobile data traffic in 2014, in other words, was nearly 30 times the size of the entire global internet in 2000. This growth in data traffic is only expected to increase over the coming years, with recent estimates indicating a 57 per cent compounded annual growth rate (CAGR) from 2014-2019, to 24.3 exabytes per month².

² Cisco, 2015. *Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2014-2019*, s.l.: Cisco



Source: Cisco Visual Networking Index, Global Update 2014-2019

It is estimated that by 2018, there will be nearly four billion global internet users and around 80 per cent of all traffic will be video, which will require enormous network capacities to fulfill increasing demand. TSPs will not only require huge quantities of spectrum and other resources, but will also be required to manage traffic efficiently to meet this demand. One application of technology that may help in this regard would be the storing of content to bring it closer to end users. This will allow operators to reduce transportation costs and improve delivery.

Due to the scarcity of spectrum, the mobile network poses altogether different challenges than the fixed networks. The scarcity and high cost of spectrum starves the mobile network of its available capacity. Further, shared access topologies employed in the case of mobile broadband as opposed to dedicated access in the case of fixed technologies bring further challenges in terms of assured speeds and transparency to customers. Therefore any governing principles on traffic management should take into account the challenges faced by service providers due to their use of mobile technologies.

Traffic management will play a critical role with this huge volume of traffic, served mostly by wireless networks, for a number of reasons that are elaborated upon in the next section.

2.1. There can be no guarantee that service levels of mobile networks will be the same at all locations

Wireless network providers have to deal with several constraints to ensure satisfactory QoS to all subscribers. Some of these are highlighted next:

- 2.1.1. **Distance from a cell-site:** A primary consideration when evaluating the reliability of a mobile connection is the distance between the user and the closest cell site. Moving away from a connecting cell tower degrades the connection and provides a somewhat variable quality of experience as a consumer moves from one site to another.

- 2.1.2. **Localized congestion:** Local factors can lead to traffic spikes that can potentially bring about congestion failure in wireless networks. Localized congestion may increase during festivals, occasions with large public gatherings, and at times of emergency.
- 2.1.3. **Time sensitive traffic:** The internet, akin to broadcast networks, displays off-peak and peak hour patterns of traffic. Internet traffic increases during peak hours, and smart traffic management serves to ensure that peak hour activity doesn't cripple networks.
- 2.1.4. **Networking technology (2G/3G/4G):** QoS in wireless networks also varies according to the connecting technology. Assuring QoS becomes increasingly challenging as a consumer switches from one technology to another during periods of mobility.
- 2.1.5. **Scarcity of Spectrum:** Availability of adequate spectral resources is yet another constraint that limits the ability of TSPs to create a capacity unconstrained network.
- 2.1.6. **Devices:** The devices, along with different operating systems, use the network in different ways, which creates a different service experience for users.
- 2.1.7. **Applications:** The application design using the data service place an important role in the customer experience.

Due to all these factors, as well as continuously increasing internet traffic, TSPs face challenging constraints that limit their ability to assure a uniform level of quality for a wireless connection. In fact, the only way each bit of data has a uniform quality of service is if every user has the same device located at the same place; all Cells have uniform distribution; network is not constrained because of the unavailability of spectrum at any place at any given of point; all Cell sites function on the same technology; and every user is equally distant from the Cell site.

2.2. Traffic Management has always been part of wireless networks

The strict interpretation of Net Neutrality that requires treating each bit of data equally ignores the reality of how networks are designed and how consumers use them. Internet Protocol (IP) based networks have been designed to route IP data packets according to their performance characteristics. Packet delivery needs to take into account multiple characteristics – type of traffic, destination of packet, availability of routing options, network propagation environment, etc. For example, essential services like emergency services, remote diagnostics, etc. should be prioritised over delay-tolerant services such as messages, file sharing and emails to meet the consumer expectations of different services and to support critical communication needs.

Traffic management has been used in previous generations of networks and the need today is greater than before due to the wider variety of services with different

requirements. Similar to the prioritisation of voice calls in 2G and 3G networks, voice calls are prioritised over 4G networks based on open standards developed by international standards organisations.³ The sophistication of traffic management will evolve as an increasing number of complex applications begin to use mobile networks and a growing number of device types access those applications.⁴ Further network prioritization was always envisioned as part of the Internet Protocol and its implementation was consistent with the laid out specifications.

It should also be appreciated that traffic management takes place at every level of the Internet. Providers of hand sets, browsers, virtual market places and other services such as Google, Microsoft, Nokia and others use traffic management to improve the delivery of their pages on the internet and to optimize third party content using the same methods as those used by ISPs. Optimization, caching, intelligent traffic management and providers of Content Delivery Networks have a business model based on obtaining revenues by improving quality of experience for end users. Net Neutrality must address the complete value chain and result in holistic benefits to the end user and restrictions, if any, must apply equally to all players in the value chain.

The efficient way to manage multiple traffic types is not to treat all traffic with the same priority, but to match the prioritisation of network resource to traffic characteristics and service requirements.

2.3. Benefits of traffic management

Today, the internet operates on a best effort architecture and Telecom Service Providers use traffic management to minimize the incidence and impacts of congestion, ensuring that as many users as possible get the best internet experience. Traffic management is necessary for technical, operational and commercial requirements such as:

- a) **Management of Network Congestion:** Especially required for mobile broadband networks where signal strength varies from location to location, in localized congestions, during mobility, and the non-availability of spectrum at all locations. Traffic management helps provide a better online experience for end users by using available network capacity more efficiently and helps network operators support a larger number of concurrent users.

Traffic management techniques are critical for managing congestion in mobile networks which are inherently capacity constrained. Traffic Management techniques provide an

³ For example, 3rd Generation Partnership Project (3GPP) has standardised Voice over Long Term Evolution (VoLTE) for the provisioning of voice calls on LTE networks based on managed resource allocation for VoLTE calls.

⁴ The vision for next generation 5G networks illustrates this complexity where billions of devices, from phones to cars, could communicate to each other within fraction of seconds.

essential layer of efficiency which alongside ongoing investments in speed, capacity and coverage, help network operators cope with the rapid growth in data traffic. Appropriate traffic management techniques can improve the efficiency of broadband networks by 25 -35 per cent, which not only results in better quality services but also reduces costs for consumers by the same proportion.

- b) **Network integrity:** Traffic management techniques help TSPs to protect end users from online threats such as spam and malware. Without such protection, end users would be exposed to a range of undesirable impacts ranging from lower network performance; cluttered inboxes; greater risk of identity theft ; to device infection with viruses.
- c) **Child protection:** Traffic management also helps to apply content filters that limit access to age-appropriate content.
- d) **Delivery requirements:** Traffic management helps operators ensure that delay-sensitive services such as voice calls and video streaming keep working smoothly. This may require the use of prioritization techniques. Services that are non-real time, e.g., email, web browsing, etc., can be provided at lower priority in periods of congestion with no impact on user experiences.
- e) **Emergency calls:** Routing calls to emergency services, too, can be more efficiently performed.
- f) **Enterprise Customers:** Providing premium services for enterprise customers required for their business needs without compromising on the quality of service for ordinary users.

2.4. Policy framework for traffic management

We are supportive of the FRAND and Ofcom principles for governing traffic management. We believe a regulatory framework that prescribes transparency will sufficiently address all consumer concerns. As long as TSPs are transparent in their approach to traffic management (OFCOM principles) and their business practices follow the Fair, Reasonable, and Non-Discriminatory (FRAND) standard, consumer interests will be preserved.

3. Non-price discrimination

3.1. The Authority has highlighted several kinds of non-price based discrimination mechanisms observed in the global telecom marketplace. We present our views on each:

3.1.1. Restricting specific types of traffic (for example, P2P or VoIP)

No lawful applications/content should be blocked by TSPs except the unlawful application/content. The Indian Licensing regime under Section 4 of the Indian Telegraph Act mandates a company to acquire UL/UASL in order to lawfully provide voice, messaging and video calls. The licensing regime in India explicitly states that VoIP can only be provided by a company holding UL/UASL or ISP licence. However, there are some OTT Communication Service providers providing such services without being part of the Indian regulatory framework. We believe that the same services should be governed by the same set of rules irrespective of whether they are provided by TSPs on their own network or through the internet.

3.1.2. Data caps

TSPs/ISPs have adopted fair-use policies for years and assign usage allowances to ensure the efficient use of bandwidth. A resource starved telecom sector must retain such policies to ensure the effective use of available resources.

3.1.3. Toll Free Data Arrangements (Zero rated arrangements) promote social welfare

India is a developing market where penetration of internet/broadband is a key focus. Development of this market will rest on the ability of TSPs to invest in network infrastructure and to provide services at affordable rates. In order to connect one billion Indians, all stakeholders will have to work together and develop innovative business models to make access to internet services as affordable as possible.

Toll free is but one step in this direction as it allows users to access internet content for free, while TSPs are compensated for this access by content providers. Such a platform enables first timers and marginal customers, who cannot afford internet services, to experience them for free. There is evidence to show that if structured appropriately, Zero Rating may drive innovation and competition in the internet economy. We believe there are no issues with respect to distorting competition in this space as long as such arrangements are based on the principle of non-discriminatory access to all.

Further, Toll Free/Zero rating as a concept is not new and is a common practice in the sector. There is no difference between zero rating and toll free voice such as 1-800. When a company selling an insurance product enrolls for the toll free voice platform, customers who call the number are not charged. Customers are however charged when they call the non-toll free number. Calls are not blocked or given preferential treatment. Toll free voice helps business owners to engage

with their customers and at the same time provides customers with the benefit of reaching the business for free. In the case of Zero rating, TSPs have simply applied the existing **concept of toll free voice to the world of data**.

It has been argued that such programs can distort competition by allowing service providers to pick which content/application provider's services are made accessible to end users. Such claims are completely unfounded as no instances of blocking or throttling have ever been observed in the Indian broadband market. It is also important to note that there appears to be little if any evidence that free access to content, which is what zero rating provides to consumers, will somehow lead to diminished online freedom and innovation. If not anything else, such programs will at least familiarize those who currently do not use internet due to fear of high charges, with the way it works.

Poverty, expensive device/data charges, digital literacy, and poor infrastructure are some of the primary barriers to the adoption of internet services in developing nations. Given the benefits associated with the increased adoption of internet services, efforts should be directed at practices that lead to increased investment in networks and lower costs for consumers. According to a Brookings report⁵, "Zero rating practices can improve internet access and use among the disenfranchised. The report states as follows:

*"This policy allows people who lack the financial resources for expensive data plans to use certain applications without having that usage charged towards the individual's data cap. It frees them to use the Internet and access various services without additional fees, and in conjunction with free Wi-Fi networks or library-based devices, represents a way to bring digital access to those who otherwise could not pay for desired services. By exempting high-usage sites from data caps, operators give people the ability to see more of the web without spending additional money. Or to put it differently, **zero rating can reduce the cost of Internet access to local sites for poor consumers because their consumption of data on global applications does not take their entire data caps. In the end, poor people get more data for their money.**"*

Another study by the Progressive Policy Institute⁶ evaluates the benefits of Zero rating over direct government subsidies, either of which would be required to

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West, D. M. (2015, February). Digital divide: Improving Internet access in the developing world through affordable services and diverse content. *Center for Technology Innovation*, pp. 1-30.

⁶ Carew, D. (2015). *Zero-Rating: Kick-Starting Internet Ecosystems in Developing Countries*. Progressive Policy Institute

spur the adoption of internet services. The report draws attention to the following:

*“In shifting to a high-connectivity equilibrium, a zero-rating approach has several advantages over direct government subsidies.... **First**, zero-rating can jumpstart an Internet ecosystem at a faster and significantly lower cost. Direct government subsidy programs can be very costly, and spread out over many years. They may also be harder to contain, especially programs that fund public broadband networks or subsidize Internet-capable devices. That’s because mobile broadband technology is constantly evolving, as are the devices that run on the networks. It is very expensive to successfully build, operate, and maintain government-owned broadband networks, especially when increased public-take up of broadband is not guaranteed. Zero-rating is cheaper because mobile operators subsidize the costs to provide zero-rated data. They internalize the costs through their billing processing operations... **Second**, with zero-rating, an Internet ecosystem can flourish relatively quickly, because such offerings can be more easily implemented and maintained, or adjusted according to public response.... **Third**, zero-rating comes with significantly less government control. That not only reduces the burden on governments with limited resources, but it also limits the possibility of mismanagement. Without a large cash transfer program, there is much less room for misallocation or waste of funds.”*

If structured appropriately, such arrangements can increase consumer welfare by transferring the cost of internet access to content providers, and also aid in digital inclusion. The socio-economic merits of zero rating have even been highlighted in the new Open Internet Rules released by the FCC (released in March, 2015). These rules have recognized the potential of zero rated deals to increase consumer welfare as well as spur on competition in the application market. As such, the Commission has chosen not to ban such arrangements, but rather evaluate these on a case-by-case basis. The FCC noted the following:

*“Sponsored data plans (sometimes called zero-rating) enable broadband providers to exclude edge provider content from end users’ usage allowances... evidence in the record suggests that these business models may in some instances provide benefits to consumers, with particular reference to their use in the provision of mobile services.... We are mindful of the concerns raised in the record that sponsored data plans have the potential to distort competition by allowing service providers to pick and choose among content and application providers to feature on different service plans. **At the same time, new service offerings, depending on how they are structured, could benefit consumers and competition. Accordingly, we will look at and assess such practices under the***

no-unreasonable interference/disadvantage standard, based on the facts of each individual case, and take action as necessary.” (Emphasis added)

Globally, many countries have debated over the issue of zero rating and whether to favor or ban the zero rating. Several large internet markets have supported zero rating as an enabler to penetrate their internet services. Only few countries have actually banned it. Out of this, only one large country namely Japan, has opposed zero rating. Therefore, it is evident that a large part of internet market which has debated the issue of zero rating has so far found it a favourable way of promoting internet penetration.

To conclude, zero rating programs are effective means of bridging the digital divide, and we believe such arrangements should be permitted. Additionally, it is important to note that in the case of zero rating, social welfare increases because benefits are directly passed on to consumers, and not to commercial entities such as in the case of paid search. Such pricing innovation holds great socio-economic merit, and as such must be evaluated pragmatically.

Section 3: Issues related to pricing and revenue share arrangements between TSPs and OTTs, if required

Question 4: Should the OTT players pay for use of the TSPs network over and above data charges paid by consumers? If yes, what pricing options can be adopted? Could such options include prices based on bandwidth consumption? Can prices be used as a means of product/service differentiation? Please comment with justifications.

Question 8: In what manner can the proposals for a regulatory framework for OTTs in India draw from those of ETNO, referred to in para 4.23 or the best practices summarised in para 4.29? And, what practices should be proscribed by regulatory fiat? Please comment with justifications.

Question 12: How should the conducive and balanced environment be created such that TSPs are able to invest in network infrastructure and CAPs are able to innovate and grow? Who should bear the network upgradation costs? Please comment with justifications.

Question 14: Is there a justification for allowing differential pricing for data access and OTT communication services? If so, what changes need to be brought about in the present tariff and regulatory framework for telecommunication services in the country? Please comment with justifications.

Question 15: Should OTT communication service players be treated as Bulk User of Telecom Services (BuTS)? How should the framework be structured to prevent any discrimination and protect stakeholder interest? Please comment with justification.

Question 18: Is there a need to regulate subscription charges for OTT communication services? Please comment with justifications.

Bharti Airtel's Response

We do not believe the OTT Application Services need licensing. This ecosystem needs a policy framework that is light touch and responsive to the moving contours of this innovative world. However, OTT Communication Services directly compete with services provided by TSPs and are aimed at substituting those. Therefore, we believe a level playing field can only be achieved through “**Same Rules for Same Service**”. This would imply a policy framework based on:

1. *Same Contribution to National Development*: This would imply contributions through License Fee, USO Levy, Service Tax and other levies that the OTT communication services provider will be required to make.
2. *Same Customer Protection*: OTT Communication Service provider should be subjected to the same compliance requirements that a TSP is, as this is what ensures the appropriate level of customer protection – QoS, tariffs, metering, billing and privacy, etc.
3. *Same National Security Responsibility*: OTT communication service provider should be required to provide monitoring and logs as required from the TSPs.
4. *Same Responsibility for Communications Infrastructure Development*: As stated earlier, TSPs spend a substantial proportion of their communications revenue on infrastructure development such as purchasing spectrum, building towers, laying fiber, etc. As providers of the same services, OTT communication service providers also need to have the same responsibility to develop the infrastructure. In this context, we believe that the appropriate structure would have the following characteristics:
 - **A Network Usage Charge**: A charge that is paid by the OTT communication service provider to the TSP. This will be paid to the TSP as the vast majority of the infrastructure investment will still be built by the TSP but utilized by the OTT communication service provider to provide their services while using the same resources as that of the TSPs.

- **The Network Usage Charge should be usage based:** The charge should be based on level of usage, i.e., on per minute/MB basis, as this would incentivize the OTT to optimize their service from a network efficiency perspective.
- **Network usage charges not to have any linkage to retail tariffs** in any form. Further, the data usage tariff should continue under forbearance.