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Response to the TRAI Consultation Paper on Regulatory Framework for Over the Top (OTT) Services dated March 27, 2015

1.0 Introductory Comments:

- 1.1. The consultation paper issued by the Telecom Regulatory Authority of India (“TRAI”) on March 27, 2015 apropos of the Regulatory Framework for Over the Top (OTT) Services (the “Consultation Paper”) raises numerous serious questions concerning the telecom space in India and particularly regarding the Internet ecosystem.
- 1.2. Prior to entering into a discussion on the specific questions raised by the Consultation Paper, it is relevant to note that the primary concern in the Consultation Paper appears to be regarding the need to ensure ‘public interest’ regulation of the Internet (given the range of concerns regarding the online environment ranges from protecting user privacy to economic considerations such as how to ensure appropriate taxation regimes etc.), and what form such regulation could take.
- 1.3. The Consultation Paper essentially suggests a licensing regime be instituted for services and content delivered over the Internet so as to enable the application of a regulatory regime in this regard.
- 1.4. In implementing such a licensing system, the Consultation Paper aims to protect traditional telecom companies who provide voice and sms services from competition from online services that could (arguably) act as substitutes for the traditional telecom services. It appears therefore that the present proposals are merely an attempt to ensure that incumbent telecom companies can ensure multiple profitstreams at the expense of the consumer and indeed at the cost of preserving the openness of the Internet.
- 1.5. It is relevant to note that under our present system of licensing of telecom services, the entire Internet is treated as a single service / entity and telecom.serviceproviders are licensed for providing data services – they transmitted data packets generated by the users, or more correctly, users' computers. What is within the data packets is treated as content – video, audio, text or pure data -- and generally not subject to telecom regulations. The carrying of data is the service provided by the relevant licensee. This is also the principle

on which the International Telecom Union works and is the same system as anywhere else in the world.

- 1.6. Accordingly, in India, an applicant may seek, say an ISP license to provide access to the public Internet. Notably Clause 2.1, Chapter IX of the UASL¹ provides that “The subscriber shall have unrestricted access to all the content available on Internet except for such content which is restricted by the Licensor/designated authority under Law.”
- 1.7. This framework of treating the entire Internet as a single service is one of the primary reasons why permission less innovation is possible in the context of the Internet. Separating the Internet into different services – each of which may or may not require a license to operate – is an attempt to change an existing structure that is globally followed. We do not believe there is any pressing need to make such a far reaching, or for that matter impractical change to the regulatory structure – which will only have the effect of stunting Internet penetration, raising costs for the user, and limiting the growth of content / services / applications on the Internet.
- 1.8. We believe that the definition of Over the Top (OTT) services provided in the Consultation Paper is unclear – it is used to refer to “applications and services which are accessible over the Internet and ride on operators networks offering Internet access services’ and thereafter to refer to “a service provider offering ICT (Information Communication Technology) services, but neither operates a network nor leases network capacity from a network operator”. Given that all content, services and applications on the Internet are indeed provided over the top of telecom services or the telecom stack – there seems little point in such a wide phrase being coined.
- 1.9. Further, the definition of OTTS provided in the Consultation Paper fails to adequately provide reasons to differentiate between data packets based on their content (and therefore classify things into OTT communications, OTT Media, etc). Should the proposed definition of OTTS be taken to its logical end, any and everything on the Internet will be an OTTS including plain vanilla websites. Currently, we do not need a license to create a website, provide a service through the Internet or provide an app for use on computers, tablets or mobile phones. All this could change in the event the proposed definition of an OTT service is converted to law.
- 1.10. Further, given the converged nature of content, services and applications on the Internet, very often you may have one platform which falls into a number of the buckets designated by TRAI (OTT media, OTT communications etc). Trying to differentiate between such content or services and implement separate regulatory regimes for each is therefore likely to be very difficult if not completely unworkable.

¹ <http://www.dot.gov.in/sites/default/files/Unified%20Licence.pdf>

- 1.11. It could also be argued that TRAI may be guilty of regulatory overreach should it seek to classify all(or any) Internet based services as OTT and therefore look to expand its jurisdiction to cover these services in their entirety. It is possible that by defining any application or service that uses the Internet to be an OTT, such application or service will become subject to TRAI's regulation – which, even if unintentional, will certainly not be in consonance with the powers of the telecom regulator.
- 1.12. Should the proposed system of licensing be implemented, any business that uses the Internet – e.g., e-retail, media, health care, etc.-- could henceforth be regulated by TRAI as an Over-The-Top service.
- 1.13. This is similar to defining any service that uses telephones to be an OTT service. So it could then be argued that if any person uses a telephone for buying or selling shares in the share market, the sale or purchase should itself be regulated as an OTT service.
- 1.14. The issue is not whether licensing will be required for all websites or applications. While licensing may only be restricted to a few of the existing services (arbitrarily chosen, say based on their competitive effect on existing telecom companies) - for example, Skype (internet based video and audio chats, not calling phones using VOIP) and WhatsApp (an SMS service using the internet),the problem is that such a licensing framework would then have to be extended to any and every website that offers real time chat or real time conferencing facility – something that if implemented will prove disastrous for innovation of new services and applications and will greatly reduce consumer choice.
- 1.15. As mentioned previously, such a system is also likely to be practically unworkable. Given the vast quantity of content, services and applications present on the Internet as well as the pace of online innovation, it will be foolhardy for TRAI to assume it can actually try and categorize and thereafter license any or all content and service providers of various types.
- 1.16. The attempt to classify the Internet as a bundle of OTT services is akin to opening Pandora's box and has the potential of creating a closed Internet. The concept of an open Internet has been widely accepted across the globe. The growth of the Internet has taken place due to its open character – i.e.anybody can connect to the Internet and offer an application or a service; or provide a website containing blogs and other content. Creating a closed Internet is no longer an issue that is being discussed in any country.
- 1.17. While we believe that there is clearly a need to ensure that the Internet is regulated in public interest(and that appropriate principles of say competition law are applied to the online marketplace, or that appropriate taxation regimes must be implemented), the method suggested by the Consultation Paper appears to be ill

thought out and wholly unworkable. Licensing is not a one shot solution to ensure the implementation of public interest regulation in the context of the Internet.

- 1.18. In this respect, we believe that the present Consultation does not adequately identify the issue to be solved. Is TRAI attempting to solve issues pertaining to security over the Internet? Or, the lack of transparency by search websites? Or, whether taxation regimes are applicable to online services? By raising multifarious unconnected issues in a single consultation paper, TRAI appears to have lost sight of the purpose of the consultation itself. The twenty questions raised by TRAI mostly concern the economics of the online market and the effects on competition therein. TRAI then proposes to implement a licensing regime, which as such has limited connection with the issue of creating competition in the online market (and would arguably only lead to further tendencies towards monopolization in the Internet economy). We urge TRAI to recognize that curbing abuses of monopolistic positions and creating regulated monopolies are not two sides of the same coin.
- 1.19. It must also be kept in mind that implementing a licensing regime in the context of a global network would be virtually impossible. Should such a system be implemented it would essentially lead to a situation where Indian citizens would have access to a very limited range of content / services / applications on the Internet. Indian citizens would be denied access to various types of online content and services – thereby starving the Indian public of use of one of the greatest innovations of humankind. Similar to the Chinese Internet firewall, such a system would set up a juridical barricade classifying the Internet into ‘India compliant’ and ‘unavailable in India’. This would involve a form of pre-censorship of the Internet – in that only those services and content licensed in India will be accessible by viewers.
- 1.20. Implementing the proposals suggested in the Consultation Paper would result in some of the essential principles that have made the Internet an indispensable engine of economic growth and information dispersal (such as supporting permission less innovation, ensuring the openness of the Internet, enabling edge-to-edge communications etc.) being thrown by the wayside – thereby irretrievably affecting the online environment for all citizens of India.
- 1.21. In this context, it may be useful to refer to the findings of the Federal Communications Commission (FCC) in its recent order on Protecting and Promoting an Open Internet (adopted February 26, 2015).² The FCC notes specifically that “*the Verizon court upheld the Commission’s finding that Internet openness drives a “virtuous cycle” in which innovations at the edges of the network enhance consumer demand, leading to expanded investments in broadband infrastructure that, in turn, spark new innovations at the edge*”.

² The Federal Communications Commission, “Protecting and Promoting an Open Internet”, order adopted February 26, 2015, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0312/FCC-15-24A1.pdf

- 1.22. The proposals presented in the Consultation Paper therefore appear to be unworkable and technologically retrograde. It is arguable that this is merely an attempt by TRAI to protect obsolete technology and in the process limit innovation on the Internet.
- 1.23. In this context we note that the TRAI is empowered under Section 11 of the Telecom Regulatory Authority of India Act, 2007 to *inter alia*:
- a. Make (non-binding) recommendations to the government on amongst other issues - terms and conditions of license to a service provider, measures to facilitate competition and promote efficiency in the operation of telecommunication services so as to facilitate growth in such services, measures for the development of telecommunication technology and any other matter relatable to telecommunication industry in general, etc.
 - b. Inquire into and ensure compliance with the terms of the licenses granted by the Government of India
 - c. Regulate revenue sharing agreements between service providers
 - d. Lay down standards for Quality of Service and ensure maintenance thereof (so as to protect consumer interest)
 - e. Notify rates for provision of telecom services
- 1.24. TRAI's key functions therefore involve ensuring orderly development of the telecom sector *inter alia* through the promotion of competition and facilitating efficiency. TRAI's primary function is therefore to ensure the development of the telecom industry and environment in the interests of the public.
- 1.25. *We accordingly request TRAI to reconsider its decision to implement the proposed licensing framework and instead concentrate on putting in place public interest regulation that will directly ensure a competitive and efficient online environment including through putting in place appropriate net neutrality regulation and transparency related laws.*

Our responses to the specific issues raised in the Consultation Paper follow.

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.

Response:

The online environment in India is still developing. Only about 10-15% of our population is connected to the Internet in any form (figures vary dependent on sources) and the quantity of people with access to broadband and high speed Internet is still abysmal. In fact, in its recently released Recommendations on “Delivering Broadband Quickly What do we need to do?” dated April 17, 2015,³ TRAI has noted with serious concern the slow penetration and adoption of broadband in the country. TRAI observes that:

- India ranks 125th in the world for fixed broadband penetration with only 1.2 per 100 inhabitants having access to fixed broadband; the global average is 9.4 per 100 inhabitants.
- In terms of household penetration within developing countries, India is ranked 75th with a penetration of 13%
- In the wireless broadband space too, India is ranked 113th with a penetration of 3.2 per 100 inhabitants.

It is therefore clear that the efforts of TRAI must be focused on increasing Internet penetration in India rather than hampering growth of the Internet sector, including by implementing regulatory measures that will act to create further barriers to entry into the online marketplace and also increase costs for consumers.

As repeatedly noted by TRAI in its Consultation Paper, the use of online communication applications and services encourages the use of the Internet and associated services. This not only drives increased data use and therefore increased revenues for TSPs but also meets an evident social need. There should therefore be no attempt made to check the increased use of these applications and services.

The comments of the US DC Circuit Court in the *Verizon v FCC* case⁴ are useful to note in this context. In this case (while striking down portions of the FCC’s Open Internet Rules), the Court upheld the FCC’s finding that Internet openness drives a “virtuous cycle” in which “*innovations at the edges of the network enhance consumer demand, leading to expanded investments in broadband infrastructure that, in turn, spark new innovations at the edge*”. The Verizon court further affirmed the FCC’s conclusion that “*broadband providers represent a threat to Internet openness and could act in ways that would ultimately inhibit the speed and extent of future broadband deployment.*”

We believe that it is too early to establish a comprehensive regulatory framework along the lines suggested in the Consultation Paper to deal with ‘OTT services’ (or for that

³ Telecom Regulatory Authority of India, “Recommendations on “Delivering Broadband Quickly What do we need to do?” dated April 17, 2015, available at <http://www.trai.gov.in/WriteReadData/WhatsNew/Documents/Broadband=17.04.2015.pdf>; also Press Release of the Press Information Bureau, Government of India, titled “TRAI Releases Recommendations on Delivering Broadband Quickly: What Do We need to Do?”, dated April 17, 2015, available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=118304>

⁴ *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014), available at [http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/\\$file/11-1355-1474943.pdf](http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/$file/11-1355-1474943.pdf)

matter any specific category of services on the Internet). Not only is the term defined in an extremely broad manner (thereby making any licensing system near impossible to implement), it is likely to severely affect not only the business of these companies but also will affect the usage by Indians of a variety of applications and services that are available online.

The popularity of online communication services as well as the increased usage of such services clearly meets a pressing social need. As TRAI itself notes, people would not normally make calls of the length they do using online services on traditional calling systems. This also clearly establishes that there is no real cannibalization of services of traditional telecom companies – instead Indian citizens are being encouraged to communicate more and exchange more information.

At the moment, given the state of Internet access and penetration in India, the primary focus for TRAI ought to be ensuring greater infrastructure development in order that the benefits of the Internet can be availed by the maximum number of people. Regulating different types of online content and services, whether by TRAI (through proposals such as the present licensing system) or indeed by commercial players (through private arrangements and through the unregulated use of traffic management practices, etc.) by TSPs would hinder Internet penetration and adoption.

There are also clear and pressing reasons why TRAI must act to ensure that more and more people have unhindered access to online content. Over the last few years there have been more and more instances of incumbent TSPs putting in place private arrangements that act to threaten the openness of the Internet and the ability of consumers to access the public Internet (an illustrative list of instances of violations are annexed herewith as **Annexure – I**).

We therefore believe that there is a strong case to put in place regulation protecting the openness of the Internet – in the form of strong protections of the principle of network neutrality.

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.

Response:

As mentioned previously, there is no basis for and no need to bring online communication services under any licensing regime. There is no pressing need to do so particularly given that the industry is still in its infancy in India and most people still use regular voice telephony and the like. To be kept in mind that OTT communication players are not perfect substitutes for voice and other traditional services. This is *inter alia* due to the absence of QoS regulations and the like in the case of data services ((as well as the various reasons pointed out by TRAI in its Consultation Paper, notably in paragraph 2.24 thereof). Further, it may be noted that due to the conditions of the broadband and wi-fi

networks available in India, OTT communication services are still incapable of substituting for traditional services. To be noted that per TRAI's own data, usage of both traditional services as well as Internet services is only increasing in India. For instance, in the month of November 2014, total telephone subscriber numbers increased by 0.16% in the single month (addition of 1.57 million callers).⁵

As repeatedly noted by TRAI in its Consultation Paper, the use of online communication applications encourages the use of the Internet and associated services. This not only drives increased data use and therefore increased revenues for telcos but also meets an evident social need. There should therefore be no attempt made to check the increased use of these applications and services.

Licensing of online communication applications will increase barriers to entry into the market (including by raising costs of entry into the market) and therefore curtail innovation in the online sector and adversely affect Indian content and service providers. Such a move will also reduce competition in the online space and ensure that users do not have access to diverse applications and services. Any move to implement a licensing regime will only ensure the protection of incumbent companies, kill innovation and make the costs of entry into the business very high.

There are already hundreds of services providing one or another type of online communication – skype and gchat etc. may be the most popular ones, but it will prove practically impossible to license every application or service that allows communication on the Internet. Any licensing framework must also raise the question of what happens to providers who may not be able to apply for licenses (either due to location or otherwise). Licensing any and all telecommunication services and apps. may be practically unworkable as well. The obvious question is whether all non – licensed online communication apps will be banned and how will such a ban be effectively implemented in the context of the Internet (without affecting citizens rights including the right to life and that of freedom of speech and expression as guaranteed under the Constitution of India)?

One of the great things about the Internet is that anyone can develop and provide a new service – the concept of permission less innovation is one of the key principles that has made the Internet what it is today. Licensing would kill this and must be seen as a retrograde step.

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.

Response:

⁵ Highlights of Telecom Subscription Data as on November 30, 2014, TRAI Press Release No 4/2015, January 7, 2015.

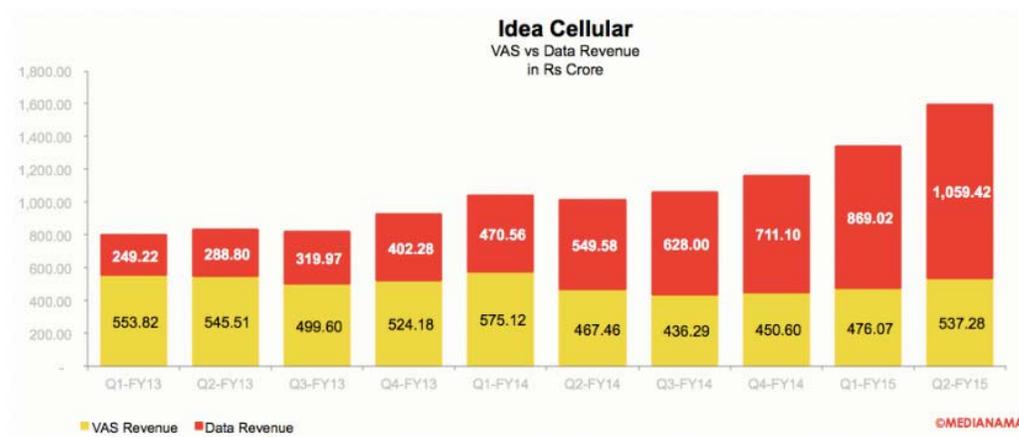
There is absolutely no evidence to support the claim that the growth of OTT is affecting the revenue streams of TSPs so as to make the business of TSPs unviable. Notably, Internet telephony currently accounts for less than 0.035% of total voice minutes of the industry in India.⁶ In India, Internet telephony and the use of OTT applications is not a perfect substitute for traditional telephony services for a variety of reasons including the poor quality of broadband as well as low costs of telephony. *“Voice and data rates are the lowest for Indian operators as compared to Asian counterparts and the difference between voice rate per minute and data rate per MB is not significant. Thus, the risk of data cannibalizing voice is very low. Our case study on OTT applications like What’s app and Skype indicates exponential rise in data volumes despite compression.”*⁷

Further, the claim that revenues of the Government are affected is also mistaken.

First, it is a matter of fact that data revenues of all TSPs are increasing by leaps and bounds. This not only ensures a continued and increasingly profitable revenue source for TSPs but also ensures adequate revenue for the government. In the respect of Government revenues, it must be kept in mind that merely because OTT players do not pay a license fee or an equivalent thereof, does not mean they are not liable to taxation in India (of course, while implementation of tax structures to the online world does prove a challenge, licensing is certainly not the answer).

As recognized by TRAI, the use of OTT applications encourages increased use of Internet services by consumers– thereby pushing up data usage and revenues for TSPs.

The fact that data revenues are increasingly drastically is shown for instance by the figure below which demonstrates the vast data revenues earned by Idea Cellular.



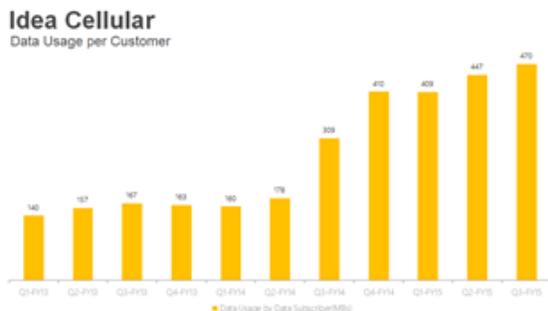
source: Nikhil Pahwa, “A response to Airtel’s justification of its net neutrality violation”, December 27, 2014, <http://www.medianama.com/2014/12/223-a-response-to-airtels-statement-justifying-net-neutrality-violation/>

⁶VinayJaisingh and AmrutaPabalkar, “Asia Insight: Decoding India’s Data Story”, Morgan Stanley, June 8, 2014.

⁷VinayJaisingh and AmrutaPabalkar, “Asia Insight: Decoding India’s Data Story”, Morgan Stanley, June 8, 2014.

As can be seen in the figure above, the data revenues of Idea are increasing rapidly, more than making up for any supposed loss on account of substitution of traditional calling services by OTT players. Similar number can be seen in the case of most dominant telcos in India.

The charts below also show that data revenue is growing exponentially⁸.



Source: Deepak Shenoy, Net Neutrality: Telcos are not losing money to data services, Medianama, <http://www.medianama.com/2015/04/223-net-neutrality-telcos-are-not-losing-money-to-data-services-deepak-shenoy/>

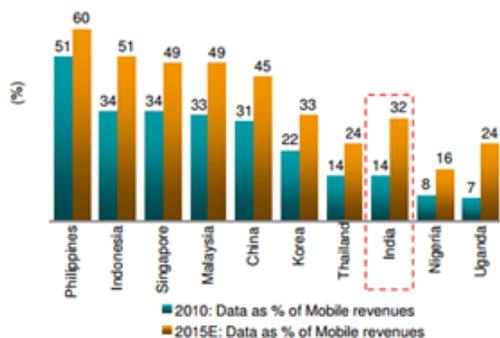
In fact, it is significant to note that various TSPs themselves have predicted rosy futures for themselves on account of increased data usage. For instance, Airtel reports in a Management Presentation dated November 2014⁹ that data revenues will drive their future growth.

⁸ Deepak Shenoy, Net Neutrality: Telcos are not losing money to data services, Medianama, <http://www.medianama.com/2015/04/223-net-neutrality-telcos-are-not-losing-money-to-data-services-deepak-shenoy/>

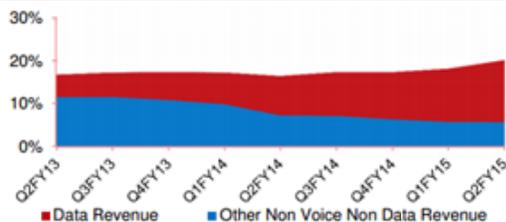
⁹ Airtel, “Management Presentation”, November 2014, available at http://www.airtel.in/wps/wcm/connect/0cddd6cf-eaac-42e5-8366-da7cf62f087d/Bharti-Airtel_Management-Presentation-Q2FY15.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=0cddd6cf-eaac-42e5-8366-da7cf62f087d

India Wireless – Significant Upside From ‘Data’

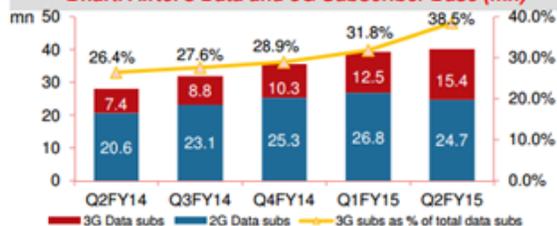
Data as a percent of Mobile Revenues across Emerging Markets ¹



Bharti Airtel's Non Voice Revenues as a % of Mobile Revenues ¹



Bharti Airtel's Data and 3G Subscriber Base (mn)



India is expected to have one of the fastest growth rates in the data segment over the next 5 years, to be driven by low cost mobile handsets and new technologies (3G/4G)



Source: Informa, Company filings

Note:

1. For Mobile Services India

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Source:Airtel, “Management Presentation”, November 2014 (see note 9)

These numbers clearly indicate that data can be a more than profitable source of revenue on its own for all TSPs.

Significantly, in a study conducted on total revenues of TSPs from traditional and data services, it was found that while call revenues and sms revenues had fallen by small amounts (INR 3.18 per user per month and 24 paise per user per month respectively) data revenues had increased exponentially by INR 10.46 per user per month.¹⁰

¹⁰ Deepak Shenoy, Net Neutrality: Telcos are not losing money to data services, Medianama, <http://www.medianama.com/2015/04/223-net-neutrality-telcos-are-not-losing-money-to-data-services-deepak-shenoy/>

Qtr Ended	Monthly Metrics		Monthly Per-User Revenue Split		
	Number of SMS per user	Average Revenue Per User	SMS	Revenue from Data	Calls
Jun-13	27	111	3.99	10.02	72.53
Sep-13	29	109	4.09	12.41	70.97
Dec-13	28	112	4.20	14.96	71.71
Mar-14	27	113	4.08	16.19	72.67
Jun-14	25	119	3.94	18.29	74.05
Sep-14	24	116	3.75	20.48	69.35

Data from TRAI's quarterly reports

From Jun 2013 to Sep 2014:

Capital Mind

Change In SMS Revenue	₹ -0.24 per month, per user
Change in Call Revenue	₹ -3.18 per month, per user
Change in Data Revenue	₹ 10.46 per month, per user
Change in ARPU	₹ 5.00 per month, per user

Source: Deepak Shenoy, Net Neutrality: Telcos are not losing money to data services, Medianama, <http://www.medianama.com/2015/04/223-net-neutrality-telcos-are-not-losing-money-to-data-services-deepak-shenoy/>

Various studies conducted by reputable investment houses such as Morgan Stanley and Co.¹¹ also point to the fact that data revenues are increasing at exponential rates – and are more than sufficient to enable a profitable business for TSPs. In fact, Morgan Stanley notes in its examination of the data market in India that *“Our analysis suggests it is cheaper to transmit short message service (SMS) through OTT, but for rich voice/video substitution can be revenue generating. Data operators are voice operators; hence, losses from one would benefit the other.”*

The table below demonstrates the rate at which data volumes are growing and consequent revenue gains made by TSPs in India. To be noted that the statistics clearly indicate an average revenue gain, year on year, of over 80%.¹²

¹¹ VinayJaisingh and AmrutaPabalkar, “India Telecoms - Asia Insight: Decoding India’s Data Story”, Morgan Stanley Research Asia Pacific, June 8, 2014.

¹² VinayJaisingh and AmrutaPabalkar, “India Telecoms - Asia Insight: Decoding India’s Data Story”, Morgan Stanley Research Asia Pacific, June 8, 2014.

Data Volumes – Impressive Growth

	F4Q13	F1Q14	F2Q14	F3Q14	F4Q14	% QoQ	% YoY
Total Data Volume (mn MB)							
Bharti	23,937	27,271	33,630	38,960	46,690	20%	95%
Vodafone	14,121	17,803	22,481	26,430	32,739	24%	132%
RCOM	27,240	31,050	37,570	41,702	50,251	21%	84%
Idea	11,421	13,791	17,452	20,840	27,299	31%	139%
Total	76,719	89,915	111,133	127,932	156,979	23%	105%
QoQ growth	19%	17%	24%	15%	22%		
Data ARMB (paisa)							
Bharti	29	31	30	30	28	-6%	-3%
Idea	34	34	31	30	25	-15%	-25%
Average	32	32	31	30	27	-10%	-15%
Data Revenue (Rs mn)							
Bharti	7,161	8,585	10,445	11,936	13,413	12%	87%
Idea	4,023	4,706	5,496	6,280	7,111	13%	77%
Average	5,592	6,645	7,971	9,108	10,262	13%	84%
2G/3G data as % of Wireless Revenues							
Bharti	7.2%	7.9%	9.5%	10.5%	11.5%	106	430
Vodafone	10.3%	11.3%	11.7%	11.8%	12.7%	86	237
Idea	6.6%	7.2%	8.7%	9.5%	10.1%	60	350
Average	8.1%	8.8%	10.0%	10.6%	11.5%	84	339

Source: Company Data, Morgan Stanley Research

Given that in the future, data will drive revenues for TSPs, the issue becomes whether data revenues on their own is a sufficient revenue stream to attract investment and make it a viable business proposition. Morgan Stanley notes that “*Data revenues push EBITDA margins higher due to lower variable costs, but ROCE is below voice on lower capacity utilization.*” While the return on capital expenditure may indeed be below voice, it is by no means prohibitive. “*We estimate over 500mn data subscribers, and see data usage growing over 4 trillion MB by F2018 and data usage per subscriber per month rising to 750MB by F2018, the current world average consumption. The rest of Asian operators witnessed high growth in F2009-13, driven by data, and we believe India’s data CAGR in F2014-18 could be even higher, at 40%.*” The investment advisor goes on to state “*Data EBITDA margins are 70-75% as compared to 25-30% for voice. However, return on voice is higher than on data due to higher utilization levels in voice. As data utilization levels pick up from the current 20-30%, profitability should improve.*”

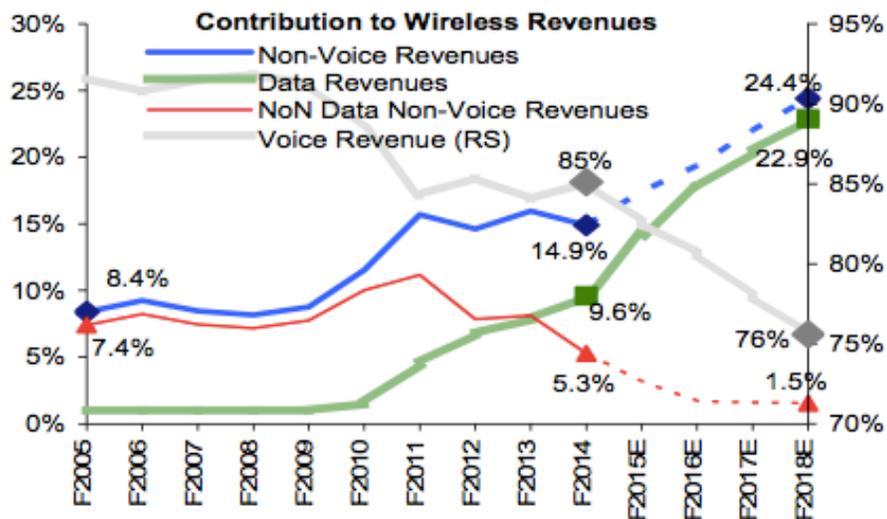
Contributions to Revenues

	CAGR	CAGR	Change bps	% of Wireless Revenues	
	F12-14	F14-18E		F12	F18E
Wireless	8.4%	12.3%	384		
Voice	8.2%	9.0%	74	85%	76%
Non-voice	9.5%	27.0%	1,755	14.6%	24.4%
Data	29.1%	39.5%	1,036	6.8%	22.9%
Non data other	-10.9%	-17.5%	(658)	7.8%	1.5%

Source: Company Data, Morgan Stanley Research

Exhibit 12

Data Growth Seen Driving Non-voice Revenues



Source: Company Data, Morgan Stanley Research. E=Morgan Stanley Research estimates.

As can be seen from the data presented above, even as voice revenues are expected to reduce over the coming years, data revenues will more than make up for this shortfall. As noted by Morgan Stanley, “we see data’s contribution to overall telecom revenue more than doubling by F2018...Industry revenue should grow 384bp to CAGR of 12.3%.”¹³

Secondly, as mentioned previously, OTT players are not a perfect substitute for traditional services. In fact, data provided by TRAI shows increasing voice consumers as well as data users. TSPs are therefore earning revenues through increased usage of all their services.

¹³VinayJaisingh and AmrutaPabalkar, “India Telecoms - Asia Insight: Decoding India’s Data Story”, Morgan Stanley Research Asia Pacific, June 8, 2014.

Notably subscription data from 2014 shows that numbers of both total telephony subscribers and data subscribers is increasing in India.¹⁴

Third, virtually every TSP in India is making huge profits, which more than cover the investment costs.

For instance, Airtel claims it has invested a sum of INR 120,000 crores in infrastructure over the last twenty years and that this cost must be recovered in order to make their business viable. However, a cursory examination of Airtel’s books shows profits in excess of 16000 crores (and revenues in excess of 140,000 crores) over merely a two year period.¹⁵

Airtel in India		
	Total revenues	Net Income
Sep-14	15,815	2,450
Jun-14	15,787	2,348
Mar-14	14,910	2,012
Dec-13	14,443	1,583
Sep-13	14,079	1,401
Jun-13	14,123	1,479
Mar-13	13,358	1,085
Dec-12	13,100	886
Sep-12	13,271	1,388
Jun-12	12,657	1,580
<hr/>		
in Rs Crore (over 2.5 years)	141,545	16,211

Note: Prior to 2.5 years, Airtel used to disclose combined data for India + South Asia

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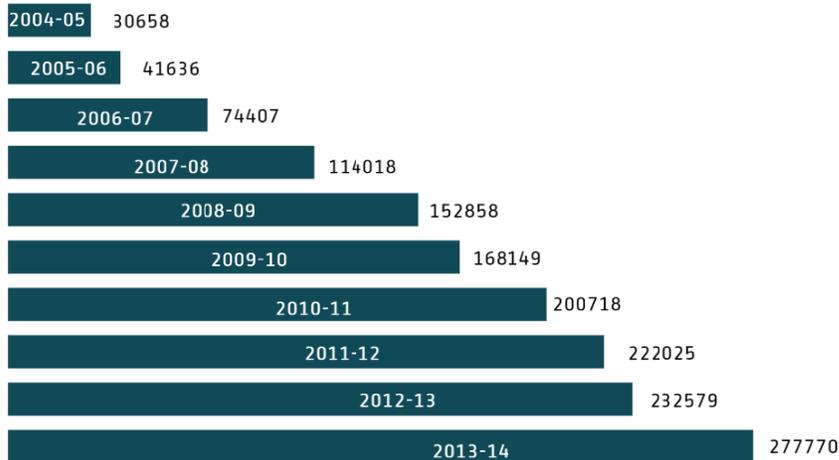
Idea too has shown massive revenues and profits over the last few years. Notably, profits before tax for the first 3 quarters of 2014-15 equate to somewhere around INR 35,500 million, a year on year growth of profit of 31%.¹⁶

The profits and revenues of both Airtel and Idea (as an example) clearly indicate that the business of TSPs are more than adequately profitable.

¹⁴ See for instance, TRAI Press Releases dated January 7, 2015, No .4/2015, Press Release dated November 20, 2014, No, 73/2014, Press Release dated October 14, 2014, No. 66/2014.

¹⁵ Nikhil Pahwa, “A response to Airtel’s justification of its net neutrality violation”, December 27, 2014, <http://www.medianama.com/2014/12/223-a-response-to-airtels-statement-justifying-net-neutrality-violation/>

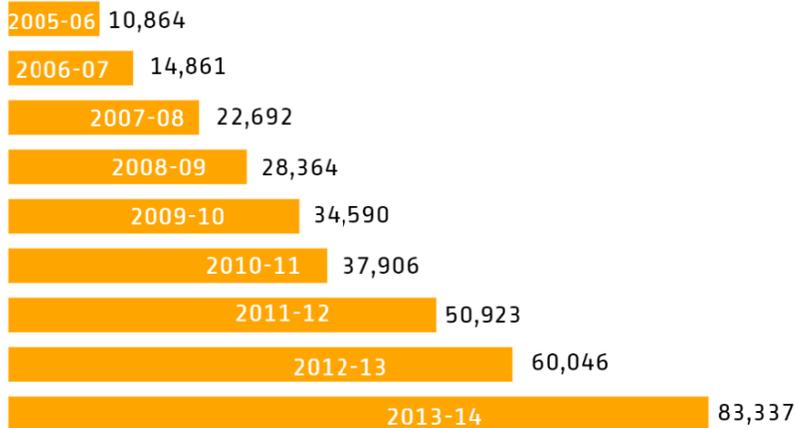
¹⁶ Calculations based on Annual Reports and other public documents of Idea Cellular available at <http://www.ideacellular.com/investor-relations/annual-report> and <http://www.ideacellular.com/investor-relations/results>



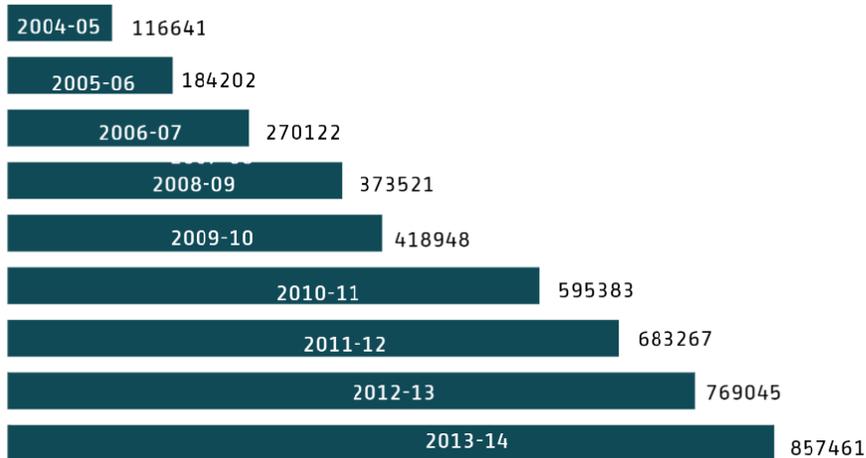
Profits (EBITDA) in Rs. Million - Airtel

Source: Graph based on data from Airtel Annual Reports and other public documents available at <http://www.airtel.in/about-bharti/investor-relations/results>

Profits (EBITDA) in Rs. Million - Idea



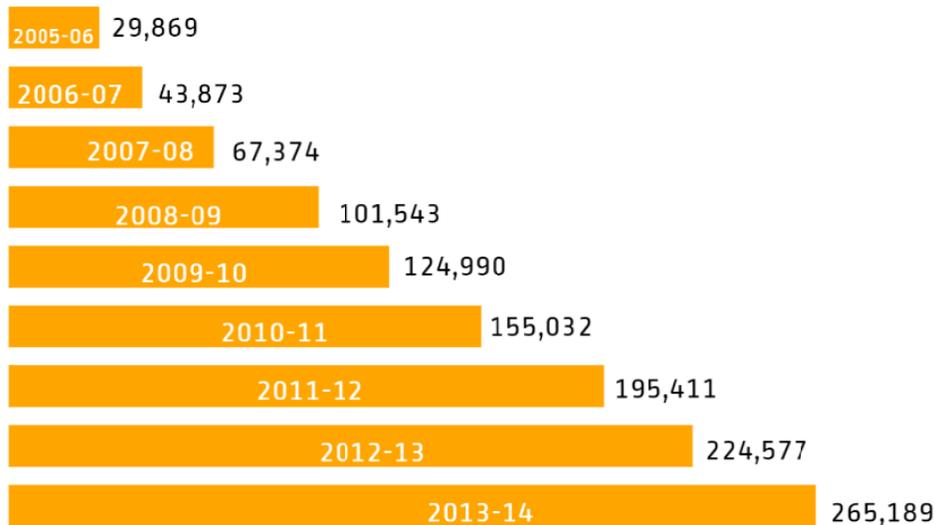
Source: Graph based on data from Idea's Annual Reports and other public documents available at <http://www.ideacellular.com/investor-relations/annual-report> and <http://www.ideacellular.com/investor-relations/results>



Revenues - in Rs Million - Airtel

Source: Graph based on data from Airtel Annual Reports and other public documents available at <http://www.airtel.in/about-bharti/investor-relations/results>

Revenues (in Rs. Million) - Idea



Source: Graph based on data from Idea's Annual Reports and other public documents available at <http://www.ideacellular.com/investor-relations/annual-report> and <http://www.ideacellular.com/investor-relations/results>

Morgan Stanely notes that “We estimate data margins are 3,000bp over voice for the

major incumbents, and hence EBITDA growth would be faster than revenue growth. However, they are less profitable with utilizations at 20-30%. We are higher by ~4% on revenues and 9% on EBITDA than consensus on F2016E for Idea and Bharti, and think data is the differentiator. Idea, our favorite, should have the highest EBITDA growth among Asian telcos, on higher leverage to data and ARPMs; A successful share issuance should improve its leverage for spectrum renewals. Bharti, with a stronger balance sheet, is second.”

In the premises, it is clear that the TSP business is more than sufficiently profitable and will continue to be so (driven by data revenues) for the foreseeable future. There is therefore no need to put in place any charging regime for OTT players.

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.

Response:

No. OTT players should not have to pay TSPs to use their networks over and above data charges paid by customers.

As explained previously, there is no evidence to show that TSPs revenues are being drastically affected due to the business of OTT players. In fact, as mentioned previously, TSPs revenues are increasing and are estimated to continue to skyrocket in the coming few years – largely on the back of increased data revenues.

Such proposals are merely attempts to ensure that TSPs can gain super profits through multiplying their revenue sources – while at the same time protecting obsolete technology. There should be no attempts to distinguish between services available on the Internet.

Ensuring payment by OTT players to TSPs would increase regulatory compliance costs for all players in the online market thereby creating barriers to entry and inhibiting competition in the online ecosystem.

Further, costs to users are likely to increase and therefore the social benefit of cheap communication facilities will be lost. Over the top communication services meet a social need and charging these services would drive up costs and affect users.

There should be no additional charges to users for different types of services. There is no basis for TRAI to attempt to regulate what users are doing using the Internet (in other words, there is no logic towards differentiating between different data packets based on content). Extending the logic, it could then be argued that if any person uses a telephone for buying or selling shares in the share market, the telecom company providing the call service can claim a proportion of the sale price involved.

Pricing should not be a method of differentiating between products and services online. The Internet is what it is today due to the fact that all content is equally accessible and further due to the seamless interconnection between services and applications. Differential pricing for different content would completely destroy the Internet as we know it.

Should TRAI be aware of any evidence of massive losses being caused to TSPs it must publish such data first before taking any steps to implement a revenue sharing arrangement as proposed.

Further, we would urge that other options to ensure adequate revenues for TSPs are also explored. For instance, TRAI can regulate the interconnection rates between external networks that connect to the Indian networks. All Internet companies use their home networks to connect to their Indian consumers, as their servers are located in their home jurisdiction. Higher delivery charges from other networks would help in creating extra revenue for the Indian network operator.

TRAI can also look into the issue of the reducing costs of landing fees as ensuring that greater interconnection points are made available so as to inter alia ensure greater connectivity and bandwidth availability for consumers. This would also reduce costs for TSPs which could also be passed on to users. While TRAI has announced the 'International Telecommunication Cable Landing Stations Access Facilitation Charges and Co-Location Charges Regulations in 2012'¹⁷, it may be time to revise the access facilitation charges paid by TSPs.

TRAI could also regulate the rate for data services.

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.

Response:

It is unclear why TRAI is treating the services provided by telecom providers on par with those provided by OTT players. Telecom players carry data packets or voice – and do so irrespective of the content thereof. Given the two provide vastly different services – there is clearly a different regulatory regime for each.

That said, it is important to note that any service or application available on the Internet in India already needs to comply with Indian laws including under the Information Technology Act (the “IT Act”), the Indian Penal Code etc.

¹⁷ Available at http://www.trai.gov.in/WriteReadData/WhatsNew/Documents/Final%20CLS%20AFC%20&%20CLC%20Regulations%20_21.12.2012.pdf

Licensing of OTT players is no way to try and ensure compliance with Indian laws will be maintained. Existing methods of avoiding Indian legal processes will be equally applicable in a scenario where licensing is made mandatory (say through using online anonymisation services such as those described by Der Spiegel in their series of revelations by Edward Snowden¹⁸). Such a move would only act to curtail innovation and affect user experience on the Internet.

It must also be kept in mind that the Government can legitimately exercise its rights to surveill traffic and block certain data under the Information Technology Act and by exercising its powers under the licenses issued to telecom providers. Given that all over the top players will provide services through a telecom player, the government will clearly have access to the necessary communication data from over the top players, should it be required. The fact that licenses bar the use of bulk encryption must also be noted. The Government or security agencies are also free to utilize existing law such as under the Criminal Procedure Code and relevant court procedures to require information and documents pertaining to an investigation to be produced.

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.

Response:

As mentioned previously, any service or application available on the Internet in India already needs to comply with Indian laws including under the Information Technology Act, the Indian Penal Code etc. Licensing of OTT players by TRAI is not the way to ensure compliance with Indian laws. In effect, it will be almost impossible to differentiate between different kinds of services and identify which ones will need to be licensed.

There is no need for a specific regulatory regime to be brought in with regard to OTT players. Given that all OTT players must necessarily provide their services using a telecom network, the Government of India can legitimately access communications through these points. The Government may call for records of telecom companies, seek information from them about data and can intercept and monitor traffic per provisions of the Information Technology Act. In the premises, there is no requirement for any additional steps to be taken.

TRAI's concern is also that telecom players need to invest in order to meet security compliances. If the argument for bringing in all Internet (OTT services) under a licensing regime is an economic one, there should be data presented to demonstrate that TSPs are losing money. Given that they have healthy growth of revenue as noted previously, the

¹⁸ See generally, Der Spiegel, Inside the NSAs War on Internet Security, December 28, 2014, available at <http://www.spiegel.de/international/germany/inside-the-nsa-s-war-on-internet-security-a-1010361.html>

economic argument does not hold. In any case, the cost of meeting security considerations is a very small fraction of TSPs total investments and cannot be an argument for introducing licensing of all applications and services on the Internet.

While we recognize that there are security and other legal concerns with the use of OTT communication players (as indeed with the use of multiple types of services and content on the Internet), we believe that appropriate measures taken at the telecom level are more than sufficient (for instance by blocking access to illegal content, monitoring illegal communications and so on under relevant provisions of the Information Technology Act, the Telegraph Act etc. read with the terms of licensing of access providers).

It may also be noted that addressing multifarious and unnamed security concerns in the context of the Internet is not specifically under the mandate of TRAI – which should concern itself more with network functionality and performance related issues.

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.

Response:

All Indian laws such as those relating to privacy, consumer protection etc. are applicable to online services and applications accessible in India.

While there is clearly a need to update privacy legislation in India, this falls outside the mandate of TRAI, particularly given that the Government of India is presently seized of a Privacy Bill.

Further, implementing any licensing system (or indeed failing to adequately protect the principle of network neutrality) may/will likely involve ISPs having to constantly conduct deep packet inspection so as to determine the content of data travelling over its networks – thereby leading to additional privacy concerns for users. *“In particular, the use of DPI generates privacy concerns, as data about a users' behavior on the Internet (which will often include sensitive data) is monitored and used for various purposes, such as traffic management or advertising.”*¹⁹ The ITU also recognizes that *“At the moment, the most important technology for traffic management is deep packet inspection (DPI). DPI equipment inspects the content of packets travelling over an IP network to identify the application or protocol that is in use, which is done by examining the source and destination IP address, the packet payload and the port number of the packet. DPI has become widely deployed because it allows for a relatively fine-grained discrimination among the applications running on an IP network, which allows an ISP to manage traffic*

¹⁹ Angela Daly, ‘The Legality of Deep Packet Inspection’ (June 2010), 8 cf http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR12/documents/GSR12_Webb_NetNeutrality_1.pdf

at the level of the individual subscriber.”²⁰

It may be noted that this was one of the main reasons for the Netherlands to pass net neutrality regulation after it emerged various telecom companies such as KPN²¹ and Vodafone²² were indulging in deep packet inspection for the purpose of blocking user access to specific services (such as VoIP).

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.

Response:

The ETNO proposals suffer from multifarious problems. Its proposal to have a QoS for senders based on payments would necessitate a change in the existing network protocols, apart from being a violation of net neutrality. We therefore oppose all such proposals.

While in general we do not agree with the ETNO proposals, we would like to point out that there are serious issues with the existing interconnection charges between various ISP's which penalise the smaller players in the market. This is because the ITU no longer decides on interconnection charges between various players, as it once did. As a consequence, the interconnection charges have been decided by private negotiations between players. The big network players have cartelised and imposed a regime by which they do not pay each other any money, but all the small players have to pay in order to interconnect to the big players. By this, the interconnection costs today are being carried exclusively by the small network operators.

The problem of companies such as Google and Facebook generating heavy traffic could be addressed not by trying to license such operators but through interconnection charges by which sending network could be made to pay. These companies are on their home networks and use their networks to send data packets to other networks. Otherwise, we have a system by which only the small networks today pay – the receiver pays principle operates.

Given that most traffic originates today from the bigger networks to smaller networks, a receiving party pays principle adversely effects developing countries.

TRAI can take two steps to correct this. One is by imposing charges for all networks that connect to the Indian one such that some of the costs of network expansion, interconnections, etc., are passed on to the networks that originate a large amount of traffic. The second is to ask the Government of India to take up the issue of network

²⁰ Net Neutrality: a regulatory perspective, GSR 2012 discussion paper ,ITU – D, International Telecommunication Union, available at https://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR12/documents/GSR12_Webb_NetNeutrality_1.pdf

²¹ Archibald Preuschat, “KPN Admits to Using Deep Packet Inspection”, Tech Europe, May 12, 2011, available at <http://blogs.wsj.com/tech-europe/2011/05/12/kpn-admits-to-using-deep-packet-inspection/>

²² Colin van Hoek, “Ook Vodafone Blokkeertdiensten”, NU.nl, April 23, 2011, available at <http://www.nu.nl/internet/2498984/vodafone-blokkeert-diensten.html>

interconnection charges in the ITU.

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.

Response:

Our current Internet is, generally speaking, built on the principle of paying Internet service providers a subscription fee for freedom to go wherever you want on the Internet. Users do not pay more for accessing one website in preference to another, and all content is equally accessible.

This ensures a diversity of online applications and services i.e. the presence of competition in the online world, protects emerging and smaller players in the online market place and ensures improvement of Internet infrastructure as well as equitable access to technical development. Maintaining an ‘open Internet’ is vital to consumers and innovators and TRAI must therefore step in to put in place strong network neutrality regulation.

The idea is that a maximally useful public information network aspires to treat all content, sites and platforms equally. This allows the network to carry every form of information and support every kind of application.²³

“Network neutrality regulation will benefit investors, innovators, and end users by providing more certainty to each regarding [TSPs] behavior, and by helping to ensure the market is conducive to optimal use of the Internet. Net neutrality regulation is critical to ensuring that people living and working in rural areas can take advantage of the substantial benefits that the open Internet has to offer. In economically weaker communities where many individuals’ only Internet connection may be through a mobile device, robust open Internet rules help make sure these communities are not negatively impacted by harmful broadband provider conduct. Such rules additionally provide essential safeguards to ensure that the Internet flourishes as a platform for education and research.”²⁴

Implementing Net Neutrality regulation is essential as:

- Net neutrality laws prevent users from being restricted to certain specific content determined by commercial agreements between content providers and

²³ Wu, T (2003) ‘Network Neutrality, broadband discrimination’, 2 Journal on Telecommunications and High-Tech Law 141.

²⁴ The Federal Communications Commission, “Protecting and Promoting an Open Internet”, order adopted February 26, 2015, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0312/FCC-15-24A1.pdf

TSPs. Such agreements restrict consumer choice, competition and plurality in the online space.

- The possibility of unrestricted implementation of traffic management practices by a TSP acts as a disincentive towards expansion of infrastructure and creation of more bandwidth for users. It is in the TSPs interest to limit the total bandwidth available so as to create an artificial scarcity of bandwidth thereby increasing the price of the product/service. Not only does this affect the customer – who may end up paying higher rates for lower speeds and lower quality of service, but it can also result in anti-competitive practices in the market.²⁵

In fact, research demonstrates that it is actually more efficient to upscale capacity than put in place traffic management measures (which are often backed by software companies and access providers).²⁶

- Packages for specific content are sold as “Internet packages” – which is clearly a case of misleading consumers. Further, lack of appropriate regulation leads to a lack of transparency in the practices of service providers leading to poor quality of service to the user.
- The principle protects smaller content providers who will not be able to pay access providers to have their content delivered on high-speed lanes. This is particularly important in the case of a developing country like India – where the amount of content created domestically is still very low, and must compete with content provided by more established foreign players. Without net neutrality there will be an Internet for the rich and an Internet for the poor.
- Without net neutrality, those who pay control what we see and what is shared online.
- The principle prevents the emergence and consolidation of vertical monopolies in the Internet economy. The Internet economy is highly prone to monopolization due to its nature / inherent characteristics – for instance due to the existence of network effects and large economies of scale. The effects of agreements that violate net neutrality can be disastrous, particularly for small players and can therefore curtail innovation and competition in the market.

²⁵ The ITU notes that the internet service provider industry in this sense does not function as a normal industry would – which would be very happy at an increased demand for a good or service. “ISPs are suppliers in a market where prices have dropped over time even as demand and quality has improved; leaving ISPs in the somewhat unique position of facing strong growth forecasts, not with anticipation but with an apparent air of trepidation.” Net Neutrality: a regulatory perspective, GSR 2012 discussion paper ,ITU – D, International Telecommunication Union, available at https://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR12/documents/GSR12_Webb_NetNeutrality_1.pdf

²⁶ It may be noted that even the Canadian traffic management practice regulations specify that such practices cannot be at the cost of investment in infrastructure and capacity building.

- Creation of monopolies in the online space affects customer choice, increases prices for users, and is a security threat (due to the centralization of services and data collection).
- Convergence may lead to a drop in profits for service providers of traditional services (for instance voice services) as they are over taken by VoIP based services. There is therefore an incentive for service providers to discriminate against such new services (particularly where the same service provider provides both voice and internet services).
- In the Indian context it must also be kept in mind that most users, including in urban areas, have no or limited choice of ISP. This also means that should net neutrality not be implemented, users are likely to severely suffer if their ISP decides to charge at differential rates for different content etc.

It is worthwhile keeping in mind that the ISP market is not exactly competitive in India. As of July 31, 2014, the DoT has permitted 350 ISPs to operate in India of which 90 are licensed to provide all India services.²⁷ Despite the seemingly high number of ISPs, the TRAI has itself noted that “...top 20 ISPs provide Internet services to 98% subscribers.”²⁸ Per TRAI figures of May 2014, the top five broadband service providers constitute 84.35% market share of total broadband subscribers. These few ISPs therefore have massive power to shape the way India accesses the Internet. Despite various comments to the contrary, there is a distinct lack of adequate competition amongst TSPs in India. It is also often seen that the top ISPs indulge in cartelized behavior – for instance by dividing up residential areas and agreeing on which service provider should provide its services in which specific portions of a locality. Switching between service providers can therefore be virtually impossible for users – who are often simply informed that there are no available connections / there is no infrastructure to provide a connection.

- Protection of this principle is essential under the framework of Article 21 of the Constitution of India and the consequent right to information that citizens of India have. Agreements that act to limit the freedom of information dispersal and access are arguably in violation of both Article 19 and 21 of the Constitution of India.
- Protection of this principle is essential in working towards Internet as a right.
- Some traffic management practices are a violation of privacy rights as noted previously.

²⁷ List of Authorised ISPs, http://dot.gov.in/sites/default/files/List%20of%20companies%20authorized%20to%20provide%20ISP%20services%20as%20on%2031.07.2014%20%284%29_0.pdf

²⁸TRAI Consultation Paper dated December 2006, on “Review of Internet Services”, p.3

At the root of the issue of net neutrality is the issue of how the Internet is viewed – is it seen as a public utility (much like say, electricity) or as a club good (like say cable television). Given the numerous benefits of the Internet – towards development, promoting social and economic justice, information dispersal and transparency, it could be argued that the Internet must be treated as a public utility. It could be seen as being essential for a full exercise of one’s citizenship rights – in particular given the plans of the Government of India to ensure multiple channels of service delivery over the Internet.

Arguments against network neutrality regulation generally take the following forms:

- (a) Free access – the argument is that it is better to have free/cheap access to a limited selection of content than no access at all. This argument is of note particularly in the case of ‘zero rating agreements’ which are now attracting attention the world over. While undoubtedly these agreements do ensure users get a limited benefit of being able to access some content for free, it must be kept in mind that this provision of free access is not to the Internet, but to a limited array of services and content – there are therefore problems with monopolization and its effects. Such agreements also raise the critical issue of ensuring plurality of media and what happens to smaller players who cannot afford to enter into similar agreements. It is largely for this reason – i.e. the uncompetitive effect of such agreements and their effect on plurality of content that various jurisdictions have held such agreements to be unlawful. To be kept in mind that zero rating is not merely a question of whether or not such deals contain exclusivity clauses – i.e. whether they explicitly exempt others from participation in the platform, but what the effect would be on content providers who cannot afford to pay even supposedly nominal charges to access providers to ensure their content is carried on such a platform. This is the problem with even platforms such as Airtel Zero that claim²⁹ not to discriminate against content (since they permit any application or content provider to enter into a (paid) agreement with Airtel under which Airtel will ensure customers get free access to that particular application or content), Further, one must keep in mind that at present, a content provider of any size merely has to get a single internet connection in order to provide his or her services to the public. Zero rating will create an environment where start ups and smaller businesses will have to enter into such additional agreements in order to reach their user base. In situations where their content is accessed through different TSPs (say in different telecom circles), this could lead to huge costs on account of having to sign agreements with many TSPs. This could also lead to situations where users are driven to certain specific TSPs as content providers may not choose to enter into deals with all service providers (due to costs) but may instead opt only to enter into agreements with those TSPs who already have large market shares. This will therefore hamper the business of smaller ISPs who will not be able to offer a content provider as much bang for the buck as a large ISP (in terms

²⁹ TNN, “Clearing the misconceptions about Airtel Zero: CEO GopalVittal’s email to customers”, The Times of India, April 18, 2015, available at <http://timesofindia.indiatimes.com/tech/tech-news/Clearing-the-misconceptions-around-Airtel-Zero-CEO-Gopal-Vittals-email-to-customers/articleshow/46970513.cms>

of number of people viewing the content providers content for free) and will consequently see its existing market share reduce as customers opt for ISPs who provide them free services. Such a system would also create a a tiered Internet with some services available for ‘free’ – something that is clearly a problem from the perspective of ensuring diversity of content and competition in the online market.

To date at least 6 countries have explicitly banned zero rating deals in view of their affect on competition and plurality of media on the Internet. These include Canada³⁰, Chile³¹, the Netherlands³², Slovenia³³ and Norway³⁴.

In this context, it is useful to refer to the findings of various studies that have found that large proportions of people, particularly in developing countries, have no idea that they are actually using the Internet while using Facebook i.e. Facebook is becoming synonymous with the Internet (largely as Facebook has worked hard to ensure it is the only accessible content option to many users – including through the use of zero rating deals). This of course has huge implications for the continued growth and usage of the Internet. Not only is this a competition related issue – it is also likely to limit the potential uses to which the Internet can be put and will lead to an unhealthy centralization of online services. Already services are starting to move away from the open web and to Facebook – businesses for example are increasingly flocking to Facebook as large parts of their customer base only use this one platform. If people ‘decide’ to largely use one service, it follows that content, advertisers, and associated services also will flow to that service, possibly to the exclusion of other venues.³⁵

³⁰ Government of Canada News Release, “GRTC Continues to Set the Course for the Future of Television with Lets Talk TV Decisions”, January 29, 2015, <http://news.gc.ca/web/article-en.do?nid=926529>. Note in particular, Broadcasting and Telecom Decision CRTC 2015-26

which holds illegal practices followed by Bell Mobility, Videotron and Quebecor Media (who were providing preferential access to certain types of services) available at <http://www.crtc.gc.ca/eng/archive/2015/2015-26.htm>

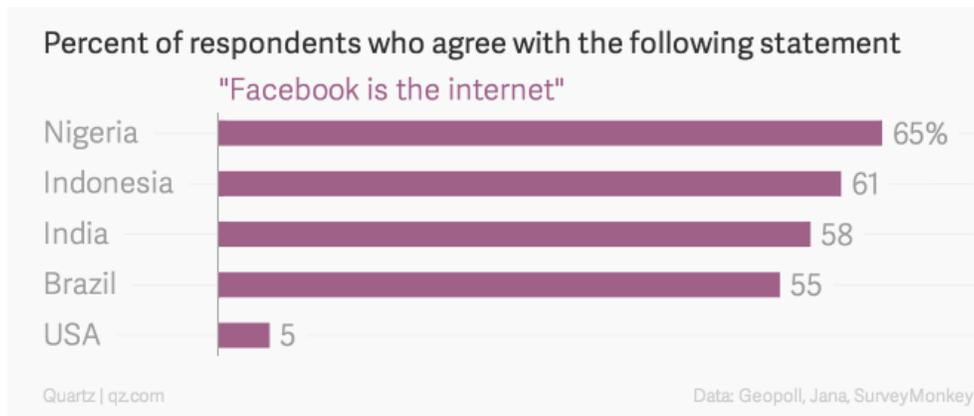
³¹ David Meyer, “In Chile, mobile carriers can no longer offer free Twitter, Facebook or WhatsApp”, Gigaom, May 28, 2014, available at <https://gigaom.com/2014/05/28/in-chile-mobile-carriers-can-no-longer-offer-free-twitter-facebook-and-whatsapp/>

³² David Meyer, “Dutch and Slovenian regulators nail carriers over net neutrality”, Gigaom, January 27, 2015, <https://gigaom.com/2015/01/27/dutch-and-slovenian-regulators-nail-carriers-over-net-neutrality/>

³³ David Meyer, “Dutch and Slovenian regulators nail carriers over net neutrality”, Gigaom, January 27, 2015, <https://gigaom.com/2015/01/27/dutch-and-slovenian-regulators-nail-carriers-over-net-neutrality/>

³⁴ David Meyer, “Pro Net Neutrality Norway Advises Carriers to Avoid Zero Rating”, Gigaom, November 18, 2014, <https://gigaom.com/2014/11/18/pro-net-neutrality-norway-advises-carriers-to-avoid-zero-rating/>

³⁵ Quartz, “Millions of Facebook Users Have No Idea They’re Using the Internet”, February 9, 2015, <http://qz.com/333313/milliions-of-facebook-users-have-no-idea-theyre-using-the-internet/>



Of course, should any such ‘zero rated’ platforms provide completely free and unhampered access to the entire Internet – this will only help in increasing penetration in India and would drastically bring down costs to customers encouraging greater use.

- (b) It is inefficient to build capacity, instead traffic management practices are required to be put in place to enable a smooth flow of data and to deal with increased usage. In this regard, it must be kept in mind that it is in the ISPs interest to restrict bandwidth and create less infrastructure (as this cuts into profits). By ensuring that traffic management and other such practices are not indiscriminately, there is an incentive for the ISP to increase the size of the pipe so that more and more content can be accessed / more users attracted. Failure to stop the indiscriminate and unregulated use of Traffic Management Practices acts as an incentive for TSPs to neglect infrastructure development and instead indulge in rent seeking behavior. To be noted that TRAI has recognized in its Recommendations titled “Delivering Broadband Quickly: What Do We Need to Do?” dated April 17, 2015, that “Another reason for poor quality of broadband is non-availability of adequate bandwidth in the backhaul.” This clearly indicates that there is a need to ensure further investment in ensuring adequate availability of broadband – something that would be hindered by permitting unrestricted use of traffic management practices.

Further, it must be kept in mind that in India a significant part of the telecom network is built using tax payer funds / by or through government enterprises (or indeed through utilizing USO funds). Further, telecom companies benefit from the Government using its powers of eminent domain to provide right of way for setting up telecom infrastructure. In the circumstances, permitting carriers to piggyback on this ‘public’ infrastructure to make super profits is unwarranted.

- (c) It is also argued that traffic management is required to prevent a small number of customers from clogging up access to the Internet by using a disproportionate share of the available bandwidth. Service providers are therefore justified in controlling the flow of data because it is necessary to maintain the quality of service to all users. However, it must be kept in mind that a user pays his content

provider for using the Internet – he or she should therefore be free to do what they want on the Internet (within legal limitations). As more content moves to video and other heavy bandwidth applications there is no option but to increase the size of the pipes.

- (d) Most ISPs in India already have some traffic management practices in place – such as limiting download speeds after a certain pre specified limit. However, these practices should be applied equitably and without differentiating between content / service / application. Failure to do so privileges certain content / services / applications thereby skewing the online marketplace and reducing plurality in online content. TRAI must ensure that there is no scope for TSPs to enter into (unfair) private arrangements in this regard.
- (e) Permitting differentiated access enables service providers to charge more from customers who are able to pay, and they can use this revenue to expand the capacity of the networks. There is no incentive for service providers to invest in infrastructure if they cannot charge for preferential services. In this regard, it must be kept in mind that there is generally an incentive for an ISP to create an artificial scarcity by not investing in infrastructure. Differentiated access ensures that you limit the content which poorer users will have access to – which is inequitable.

Given the numerous benefits of an open Internet and having seen the need to ensure a competitive and free online space – numerous countries have put in place laws to maintain network neutrality. An indicative list of countries that have put in place regulation in this area are mentioned in **Annexure – II** to this document. In this respect, we would encourage TRAI to keep in mind that a large number of developing countries in particular are putting in place strong net neutrality regulation *inter alia* with a view to ensuring that local content is not discriminated against. We would encourage TRAI to examine in detail the regulatory frameworks used in countries such as Brazil – which are economically speaking far closer to India than the EU and the US.

In India, in general violations of the principle of network neutrality are of three types:

- (a) throttling: traffic management practices are commonly used by access providers in India, though often these are discriminatory, arbitrary and at any rate lack transparency.
- (b) Agreements between content providers and access providers for preferential access to specific content (cheaper access, exemption from data caps etc): there are numerous examples of tie-ups between content providers and access providers whereby certain content is provided at reduced rates or is not counted towards data cap limits by the access provider to the user.

- (c) a general lack of transparency in so far as services of access providers are concerned, as illustrated by the numerous instances of service providers offering specific content / service as ‘Internet’ access.

(See Annexure – I for an indicative list of violations of the principle.)

The most commonly seen violation appears to be of ISPs seeking payments from content providers for:

- (i) providing higher speeds to specific services / throttling other services;
- (ii) permitting differentiated data plans for users (for instance company x may offer an ISP a certain sum of money to ensure that data caps do not apply to its content). Zero rating agreements are also increasing in popularity as seen by the launch of services such as Internet.org and Airtel Zero. These ensure a customer is provided free access to a limited array of services of content (as opposed to the Internet itself).
- (iii) provision of ‘over the top’ services (such as free sms and VOIP)

In this context it is also worthwhile referring to the TRAI Consultation Paper dated December 2006, on “Review of Internet Services” where dealing specifically with the issue of Net Neutrality in paragraph 3.6. , TRAI specifically recognises the importance of the principle of net neutrality (to preserve competition in the online marketplace). The authority notes the various violations of this principle reported in the context of the United States and therefore concludes that anti-competitive practices as seen in the US market may also be seen in India “as Internet access providers may use their market power to discriminate against competing applications and/or contents”.

Given the various violations of the principle of network neutrality seen in India (an indicative list of which is annexed herewith as Annexure – I), we believe that at the minimum, TRAI must put in place regulation that ensures:

- (a) A prohibition on discrimination of data packets except in specific, strictly construed and narrowly defined circumstances (possible exceptions could be for emergency services and for genuine traffic management and security / network management reasons - though the scope of these exceptions must clearly defined – in this context refer Responses to questions 10 and 11).
- (b) Specifically, no blocking by TSPs and ISPs on specific forms of Internet traffic, services and applications must be permitted. Similarly, TRAI must ensure no slowing or “throttling” Internet speeds by TSPs and ISPs on specific forms of Internet traffic, services and applications or any other form of preferential treatment of services, content and platforms by TSPs and ISPs, particularly for commercial reasons.
- (c) No limiting of number of web sites offered under any plan.

- (d) A prohibition on deep packet inspection (for the purpose of applying discriminatory traffic management practices);
- (e) Provisions mandating greater transparency in the provision of services to a user and preventing false advertising;
- (f) Prohibition against any measures taken by a service provider to limit use of any specific hardware / end point devices.
- (g) Mandating minimum quality of service.

Question 10: What forms of discrimination or traffic management practices are reasonable and consistent with a pragmatic approach?

Response:

Implementation of traffic management practices should, generally speaking, be in the form of an exception as any such practices violate the principles of network neutrality and can lead to unethical practices being followed by service providers. As a general rule no discrimination should be permitted on the Internet.

However, we do recognize that in certain circumstances such practices may be essential to maintain network functionality and ensure a best possible experience for the maximum number of users.

We believe that all instances of traffic management must be specifically regulated by the Government (or TRAI) to ensure complete transparency and avoidance of any illicit behavior by ISPs.

In the event any traffic management principles are indeed required, the onus must be on the service provider to justify the need to carry out the specific practice. Further, it should be kept in mind that such steps shouldn't interfere with the access, affordability and quality of the services.

In any event, traffic management must not be used for solely commercial reasons or applied arbitrarily (i.e. inconsistently across services and applications). There must be serious network security and performance related concerns that should necessitate the implementation of such practices and such practices must not be implemented as a consequence of private arrangement.

It is commonly accepted, including by the ITU³⁶ and the EU Commission that there is an incentive by telecom operators to indulge in unnecessary traffic management practices and thereby restrict access to certain types of content.

As noted by the ITU:

“there is a fine line between correctly applying traffic management to ensure a high quality of service and wrongly interfering with Internet traffic to limit applications that threaten the ISP’s own lines of business. This discrimination could be through:

- *the use of blocking technology to completely prevent access to, or use of, a rival’s content or application;*
- *throttling a rival’s content or application so that the ISP’s own service is more attractive in comparison, or conversely, access-tiering the ISP’s own content and not permitting the competitor to acquire equivalent prioritization;*
- *even where access-tiering is offered widely, discrimination may be problematic if the terms on which access-tiering is offered treat CAPs differently to each other, or differently to the ISP’s equivalent content or application, and those differences are not objectively justifiable (e.g., for cost of technical reasons); or*
- *dedicating so much capacity (either through access-tiering or prioritization) that the remaining “best efforts” Internet access service is degraded – the so-called “dirt track” issue.”*

Keeping this in mind, TRAI needs to ensure that instances of discrimination of traffic should be few, far between and, above all, transparent, proportional and non-arbitrary.

It is often argued that traffic management practices are required given the lack of adequate bandwidth (or the scarcity of bandwidth) and the need to ensure equity between all types of users (some of whom may be heavy bandwidth users).

While it is indeed true that network management reasons may necessitate some forms of traffic management, these should not be an excuse to arbitrarily degrade the quality of service to a user. There must be serious concerns regarding network disruption in order to justify implementation of such practices.

It must be kept in mind that without appropriate regulation of traffic management practices, the access provider will be the sole arbiter of which users and services to impact through such practices. This increases the potential for rent seeking behavior for instance by restricting access to certain content or services and then seeking payments to remove these restrictions. Further, access providers could use such measure to discriminate against competitors by limiting bandwidth available to certain services (say that compete against their own). Access providers could also discriminate against the end users who may utilize heavy bandwidth applications.

³⁶ Net Neutrality: a regulatory perspective, GSR 2012 discussion paper ,ITU – D, International Telecommunication Union, available at https://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR12/documents/GSR12_Webb_NetNeutrality_1.pdf

It must also be kept in mind that unnecessarily putting in place download limits and so on (under the guise of fair usage policies and the like) would have the effect of adversely affecting the ability of Indian users to access video and other types of new content on the Internet. Education related services and numerous other businesses who rely on the Internet (and need to access large quantities of data) may also face problems due to any restrictions. Unrestricted implementation of traffic management practices under the guise of fair usage policies must be clamped down upon – as it is quality of service to Indian users is generally very poor and giving further reasons to a TSP to permit degradation of connections will only further limit user experience (and consequently inhibit Internet penetration).

The comments above regarding the use of deep packet inspection for the purposes of traffic management may also be kept in mind. Implementing such practices would therefore involve the loss of privacy for Indian citizens.

What should or can be permitted? Please comment with justifications.

Response:

While it is not possible to list each and every possible traffic management practice – each must be seen in context and a determination made as to the necessity of implementing such a practice for network security and functionality reasons vs. the costs to users (in the form of restricting consumer choice, limiting the amount of Internet use etc). Traffic management must be restricted to specific instances – for example in the case of fighting spam, denial of service attacks, preventing computer viruses etc. i.e where activities cause severe and serious network disruption- rather than differentiating between services or applications on the Internet, particularly for commercial or business reasons.

TRAI must look to ensure that competition is protected in the online economy and at the very least it must ensure that traffic management principles are not applied arbitrarily to an application / service or a type of service / application.

All traffic or network management must be reasonable, proportionate and must be used only if tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the Internet access service. No degradation or restriction of specific services should be allowed except in limited circumstances as mentioned previously.

Further, access providers must not be allowed to arbitrarily degrade services to applications that utilize heavy bandwidth such as video sites, torrents etc; or for that matter place arbitrary restrictions on total download limits.

The comments of the EU Council of Ministers Committee on Net Neutrality is instructive in this regard where they mention “exceptions to this principle should be considered with great circumspection and need to be justified by overriding public interests”.³⁷

In this context, and given this consultation relates largely to online communication applications and services, it is also relevant to note that the Body of European Regulators of Electronic Communications (BEREC) has opined that blocking VoIP over a mobile network is unlikely to be legitimate from a congestion management perspective. Although the bandwidth required for a VoIP call is roughly 25-30% greater than required for a traditional circuit switched call, and so some capacity is necessary to accommodate VoIP calls, BEREC considered that this use takes up only a small fraction of capacity on the network and so is unlikely to result in a level of congestion that would require traffic management.³⁸

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?

Response:

As noted by the BEREC in its Guidelines on Net Neutrality and Transparency: Best practices and recommended approaches,³⁹ “transparency regarding net neutrality is a key pre-condition of the end users’ ability to choose the quality of the service that best fits their needs and also should reduce the asymmetry of information existing between providers and end users, fostering proactive behaviour by Internet Service Providers (ISPs)...At the same time, we underline that transparency alone is probably not sufficient to achieve net neutrality, since other factors also have to be taken into account...”.

The FCC also specifically recognizes that putting in place strong transparency measures is essential to promote development of newer services (“the record supports our conclusions that more specific and detailed disclosures are necessary to ensure that edge providers can “develop, market, and maintain Internet offerings”⁴⁰), ensure consumer protection and in particular protection for “certain user groups who rely on broadband as

³⁷ Declaration of the Committee of Ministers on Network Neutrality, Council of Europe, available at <https://wcd.coe.int/ViewDoc.jsp?id=1678287&Site=CM&BackColorInternet=C3C3C3&BackColorIntranet=EDB021&BackColorLogged=F5D383>

³⁸ See BEREC, ‘Differentiation Practices and related competition issues in the scope of Net Neutrality’, BoR (12) 31, 29 May 2012, 49, cf. Net Neutrality: a regulatory perspective, GSR 2012 discussion paper, International Telecommunication Union.

³⁹ BEREC Guidelines on Net Neutrality and Transparency: Best practices and recommended approaches, BoR (11) 44, October 2011, available at http://berec.europa.eu/files/news/consultation_draft_guidelines.pdf

⁴⁰ The Federal Communications Commission, “Protecting and Promoting an Open Internet”, order adopted February 26, 2015, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0312/FCC-15-24A1.pdf

their primary avenue for communications, such as people with disabilities”⁴¹

Similarly, a Declaration of the Committee of Ministers on Net Neutrality of the EU Council recognizes that a “users’ right to access and distribute information online and the development of new tools and services might be adversely affected by non-transparent traffic management, content and services’ discrimination or impeding connectivity of devices.”⁴²

The aforementioned Declaration also clearly spells out the legal framework to be applied for genuine traffic management practices – which we believe should also be considered by TRAI. The Committee of Ministers notes that “Users and service, application or content providers should be able to gauge the impact of network management measures on the enjoyment of fundamental rights and freedoms, in particular the rights to freedom of expression and to impart or receive information regardless of frontiers, as well as the right to respect for private life. Those measures should be proportionate, appropriate and avoid unjustified discrimination; they should be subject to periodic review and not be maintained longer than strictly necessary. Users and service providers should be adequately informed about any network management measures that affect in a significant way access to content, applications or services. As regards procedural safeguards, there should be adequate avenues, respectful of rule of law requirements, to challenge network management decisions and, where appropriate, there should be adequate avenues to seek redress.”

It is essential that customers should be in a position to make an informed choice at the time of contracting with an access provider. Further, all customers must be able to continuously confirm whether they are actually receiving the service they have paid for. Therefore, a fully effective transparency policy (as recognized by TRAI in the Consultation Paper) should fulfill all of the following characteristics: accessibility, understandability, meaningfulness, comparability and accuracy.

TRAI should ensure the entire system of access provisioning must be as transparent as possible – merely requiring the disclosure of traffic management principles is therefore insufficient.

Users must be able to make informed choices throughout the different stages of a commercial relationship, i.e. before signing the contract, at the point of sale and after signing the contract. The information needed differs depending on these different stages and will need to be generic one time and individual at another stage.

For instance, in the event of implementation of traffic management practices such as degradation of high bandwidth users connections during peak hours – users must be

⁴¹ The Federal Communications Commission, “Protecting and Promoting an Open Internet”, order adopted February 26, 2015, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0312/FCC-15-24A1.pdf

⁴² Declaration of the Committee of Ministers on Network Neutrality, Council of Europe, available at <https://wcd.coe.int/ViewDoc.jsp?id=1678287&Site=CM&BackColorInternet=C3C3C3&BackColorIntranet=E5D021&BackColorLogged=F5D383>

informed in real time of the degradation that they can expect (assuming of course, that such practices are indeed permitted).

In addition to traffic management practices, TSPs must also disclose performance, and commercial terms of its broadband Internet access services sufficient for consumers to make informed choices regarding use of such services and for content, application, service, and device providers to develop, market, and maintain Internet offerings. TSPs must disclose all promotional rates, all fees and/or surcharges, and all data caps or data allowances. They must provide specific notification to consumers that a “network practice” is likely to significantly affect their use of the service. As part of quality of service or network performance disclosures, TSPs must also be mandated to include statements regarding packet loss.

Given that it is a common practice in India for ISPs to piggyback on each other’s infrastructure / networks (usually in exchange for payment of a fee), details of such agreements – particularly in so far as they affect performance or conditions of user access, must be disclosed.

To be noted that transparency provisions form a vital part of net neutrality regulation the world over. Legal instruments ranging from Marco Civil (Brazil) and the FCC Declaratory Order (USA) all contain provisions mandating transparency in the provision of services by TSPs.

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.

Response:

In this context it may be useful to refer to the decision of the US DC Circuit Court in the Verizon case that set aside the FCC’s Open Internet Rules in 2014. The Court noted that the Commission [had] more than adequately supported and explained its conclusion that edge provider innovation leads to the expansion and improvement of broadband infrastructure. The court also found “reasonable and grounded in substantial evidence” the Commission’s finding that Internet openness fosters the edge provider innovation that drives the virtuous cycle.⁴³

The FCC, after examining evidence comes to the conclusion that broadband providers—including mobile broadband providers—have the incentives and ability to engage in practices that pose a threat to Internet openness, and as such, rules to protect the open nature of the Internet remain necessary.

⁴³ The Federal Communications Commission, “Protecting and Promoting and Open Internet”, order adopted February 26, 2015, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0312/FCC-15-24A1.pdf

As stated in the FCC order, “*The record also supports the proposition that the Internet’s openness continues to enable a “virtuous [cycle] of innovation in which new uses of the network—including new content, applications, services, and devices—lead to increased end-user demand for broadband, which drives network improvements, which in turn lead to further innovative network uses. End users experienced the benefits of Internet openness that stemmed from the Commission’s 2010 open Internet rules—increased consumer choice, freedom of expression, and innovation.”*⁴⁴ The FCC continues “[TSPs] have the economic incentives and technical ability to engage in practices that pose a threat to Internet openness by harming other network providers, edge providers, and end users... The key insight of the virtuous cycle is that broadband providers have both the incentive and the ability to act as gatekeepers standing between edge providers and consumers. As gatekeepers, they can block access altogether; they can target competitors, including competitors to their own video services; and they can extract unfair tolls. Such conduct would, as the Commission concluded in 2010, “reduce the rate of innovation at the edge and, in turn, the likely rate of improvements to network infrastructure.” In other words, when a broadband provider acts as a gatekeeper, it actually chokes consumer demand for the very broadband product it can supply.”⁴⁵

As noted previously, the ITU has also recognized that net neutrality regulation acts as an incentive for TSPs to invest in infrastructure rather than merely implement traffic management practices.

In this context it is also worthwhile noting that all major TSPs in India make large profits and therefore certainly have the ability to invest in infrastructure. Given that revenues are only expected to increase (including on account of increased data usage) there is no reason for TSPs not to invest in infrastructure growth.

For instance, in just the last two and a half years, Airtel has earned Rs 141,545 crore in revenues, and Rs 16,211 crore in profit. This is as against estimated investments of Rs 140,000 crore over a 20 year period. If the revenues for Airtel are calculated extrapolated over a twenty year period, it can be seen that the return is more than sufficient to enable a profitable business.⁴⁶

We would also suggest that the TRAI use information and analysis provided by the ITU to further examine this issue. The ITU has conducted numerous case studies of different models of investments in telecom infrastructure (relating particularly to broadband access) notably in their series of ‘broadband reports’ including the report titled Developing Successful Public-Private Partnerships to Foster Investment in Universal

⁴⁴ The Federal Communications Commission, “Protecting and Promoting an Open Internet”, order adopted February 26, 2015, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0312/FCC-15-24A1.pdf

⁴⁵ The Federal Communications Commission, “Protecting and Promoting an Open Internet”, order adopted February 26, 2015, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0312/FCC-15-24A1.pdf

⁴⁶ Nikhil Pahwa, “A response to Airtel’s justification of its net neutrality violation”, December 27, 2014, <http://www.medianama.com/2014/12/223-a-response-to-airtels-statement-justifying-net-neutrality-violation/>

Broadband Networks, February 2013.⁴⁷

Network upgradation and expansion should be a priority for the Government of India and it must actively pursue this goal through all possible means – including through the appropriate utilization of the USO funds. Roll out conditions of licensees of telecom services must be strictly enforced.

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.

Response:

Discrimination of services in any form is detrimental for the growth of the telecom and online industry and there should be no general circumstances for a telecom operator to do so. Given the diverse nature of the Internet, telecom operators should not be allowed to determine what type of service should get more priority. Transparency alone will not bring about a fair regime for users, and it is crucial that TSPs be prohibited from discriminating between services.

That said, we reiterate our comments regarding the use of traffic management practices and note that any discrimination of services must also be strictly on an exceptional basis – for clearly defined reasons relating to network functionality and security.

It must be kept in mind that India has one of the lowest average Internet speeds in the Asia Pacific region and further India has one of the lowest adoption rates of high speed broadband.⁴⁸ Failure to ensure traffic management practices are not used indiscriminately by service providers will only continue to retard average speeds and internet adoption trends. Generally speaking there are two ways for TSPs to increase their profits – the first is to increase infrastructure and bandwidth and as a consequence thereof derive larger revenues from increased usage of services. The second is to create a bottleneck or an artificial scarcity of bandwidth, and thereafter derive more revenues by indulging in rent seeking behavior. The latter route is it appears, what most Indian TSPs wish for TRAI to give their approval to, and we believe TRAI must strongly discourage any such attempts.

The comments made in response to Question 10 may also be read as part of the response to this question. In so far as the transparency regime to be applied, please see response to Question 11.

⁴⁷Matt Yardley, “Developing Successful Private-Public Partnerships To Foster Investment in Universal Broadband Networks”, February 2012, Broadband Series, Telecommunication Development Sector, International Telecommunications Union, <http://www.itu.int/ITU-D/treg/publications/SuccessfulPPPs.pdf>

⁴⁸PTI, “Average Internet Speed in India Lowest In Asia Pacific”, Times of India, April 25, 2014, <http://timesofindia.indiatimes.com/tech/tech-news/Average-internet-speed-in-India-lowest-in-Asia-Pacific-Akamai/articleshow/34199101.cms>

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.

Response:

There is no justification for differential pricing between data and OTT services. All OTT services utilize data and therefore the attempted differentiation by TRAI is completely incorrect. All data on the Internet should be treated equitably.

It is also arguable that to attempt to differentiate between services must necessitate invasions of privacy (through the use of techniques such as deep packet inspection).

It is important to note that nearly one billion people still don't have internet access in India - which means telecom companies stand to gain substantially from their data services in the near future.

Customers should be charged on the basis of volume of data used (and possibly the quality of connection) and not on the basis of the type of Internet services they are accessing.

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.

Response:

There is no basis for this differentiation and similar arguments as posed previously in the context of licensing of OTT communications providers can be applied to this case as well.

The question further assumes that the only stakeholders on this issue are the telecom operators and not consumers. If only the interests of the telecom operators are protected by treating services which compete with their traditional services differently, it will lead to a skewed and anti competitive market. Telecom companies have an interest in imposing their control over information and communication networks, but the price of that would mean stifling competition, increased barriers for innovation and business and eventually infringe on the fundamental rights of Indian citizens.

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

Response:

TRAI needs to put in place strong principles to protect network neutrality to ensure that

India specific content and applications are created. Failure to do so would only lead to existing (foreign) players continue to enhance their already sizeable market shares as they will be able to enter into commercial agreements with telcos to ensure their services are provided at a priority.

An example is the case of zero rating by various applications and services. Zero-rating of Facebook for instance ensures that users are driven to this particular application at the cost of its competitors.

Putting in place strong net neutrality regulation will ensure that India continues to have a diverse app economy where entry barriers are minimal and entrepreneurs can launch their product without having to worry about discriminatory treatment from the telecom operators. In such a case, the best product will win which will be beneficial for the customers and the telecom as well as the Internet industry.

TRAI must also note that a large number of developing countries in particular are putting in place strong net neutrality regulation *inter alia* with a view to ensuring that local content is not discriminated against. Foreign companies / MNCs control the present Internet economy – for instance Google and Facebook have over 70% global market share in search and social media usage respectively. This market share gives these companies great power to influence the Internet economy and utilize this power to ensure that competitors cannot gain a foothold in the market.

The agnostic nature of Internet networks has boosted the growth of India’s app economy but we risk destroying this fast growing sector by violating net neutrality.

As mentioned previously putting in place a licensing framework would only increase the barriers to entry to the online market – which is due to its very nature prone to monopolization (due to things like the network effect, the bundling effect etc).

Further, TRAI must take steps to increase average bandwidth speeds as well as reduce costs of access. India continues to have incredibly low average speeds – ranked by some studies as amongst the lowest in the Asia-Pacific region⁴⁹.

TRAI may also consider taking steps to encourage community owned access infrastructure, adopt an appropriate white space policy etc.

We note that the TRAI has recommended the creation of local data storage facilities in its Recommendations of April 17, 2015 titled “Delivering Broadband Quickly What do we need to do?”.⁵⁰ We believe such steps, to ensure creation of local infrastructure, are

⁴⁹PTI, “Average Internet Speed in India Lowest In Asia Pacific”, Times of India, April 25, 2014, <http://timesofindia.indiatimes.com/tech/tech-news/Average-internet-speed-in-India-lowest-in-Asia-Pacific-Akamai/articleshow/34199101.cms>

⁵⁰Telecom Regulatory Authority of India, “Recommendations on “Delivering Broadband Quickly What do we need to do?” dated April 17, 2015, available at <http://www.trai.gov.in/WriteReadData/WhatsNew/Documents/Broadband=17.04.2015.pdf>

essential both from a security perspective as well as to give a spur to local economies and Internet users (for whom costs should decrease due to the ability to use local data centers).

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

Response:

OTT communication players must not be licensed for the reasons mentioned previously. Requiring licensing of online services and mobile apps under the current telecom framework in India will have enormous negative consequences. The impossibly onerous burdens imposed by such licensing would result in many such globally developed services and apps not being launched in India - and our own startup efforts to develop local versions of such apps being killed in their early stages. The net results would be decreased consumer benefit and a massive slowdown in innovation and reduced "Make in India" efforts due to the regulatory cost of doing business becoming very high.

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

Response:

Again, this is akin to licensing and the arguments against such a practice are virtually identical. In the circumstance, the responses to Questions 1 and 2 may be considered.

To be kept in mind that due to the number of OTT communication services available and the low switching costs, subscription charges tend to be low in any case – which benefits the user.

However, should any charging system be implemented for OTT communication services as contemplated in the Consultation Paper, it may then become necessary to put in place appropriate regulatory measures to check subscription services. However as mentioned previously (in the context of Question 4), we do not believe there is any need whatsoever to ensure any such charging systems are put in place.

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

Response:

There is no need to put in place a licensing regime to implement Indian laws in the context of the Internet or indeed take any regulatory measures to specifically regulate communication or non-communication OTT service providers on the Internet.

That said, India does need to ensure that strong privacy protections etc. are put in place. This must be done through the route of legislation and the Government of India (not TRAI) must take up these issues at the earliest.

Question 20: Are there any other issues that have a bearing on the subject discussed?

Response:

We believe that TRAI must carry out more complete consultations on the issue of network neutrality before putting in place an appropriate regulatory regime. Given the importance of the issue as well as its likely effect on the online environment in India, we believe that TRAI should not rest with this one public consultation (for which a time of about a month was provided to the public to respond) but should in fact continue to examine the issue and invite greater public debate and opinion.

In the interim, however, appropriate temporary regulations may be passed regarding the most egregious violations of the principle of network neutrality.

Annexure – I: Indicative List of Violations of the Principle of Net Neutrality in India

(a) Provision of faster speeds for specific services / exemptions from data caps or fair usage policies / throttling of certain services and content:

- (i) BhartiAirtel offered preferential (fast) Internet access for people watching the Indian Premier League on Youtube in early 2010. Airtel's customers could use an upgraded speed of 2 Mbps to view the cricket tournament on Youtube's IPL channel. This offer of faster speeds was not applicable to any other content accessed by the customer.⁵¹ Google however denies any agreement with Airtel for provision of such preferential services.

It appears that various other service providers have also made similar offers. BSNL is reported to have offered to double the bandwidth speed to facilitate watching the IPL on youtube. It is however unclear if the increased speed would apply solely to youtube or to other websites as well.⁵²

In June 2013, RCOM partnered with partnered STAR Sports to offer unlimited live streaming of the ongoing ICC Champions Trophy 2013 tournament on STAR Sports mobile site to its subscribers.⁵³

- (ii) Reports indicate that some ISPs (such as Airtel and BSNL) throttle certain P2P applications during peak usage times.⁵⁴ It is reported that in the first quarter of 2011, BhartiAirtel throttled 8 per cent of the BitTorrent traffic on its network. The percentage slowly increased throughout the year, increasing to 33 percent in early 2012. BSNL has reportedly blocked 9 percent of its Bittorrent traffic in 2011 and YouBroadband blocked over 50 per cent in 2009.⁵⁵
- (iii) Numerous service providers, notably Airtel, have instituted Fair Use Policies that throttle Internet speeds (by significant amounts) once a predetermined data cap is reached. It is argued that by controlling access speeds, they will limit the amount of data that users have access to (and consequently the type of services or websites the users can access).⁵⁶ Further, these Fair Usage policies may not apply to specific services or websites – as in the case of Airtel's Fair Use Policy – which does not apply to BigFlix powered Airtel Movies (where a user will therefore have access to unlimited movies on this one service). Similarly, Vodafone offers a

⁵¹ <https://gigaom.com/2010/03/25/youtube-caught-in-net-neutrality-flap-in-india/>

⁵² <http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/article743519.ece>

⁵³ <http://www.medianama.com/2013/07/223-wikipedia-partners-airtel-to-offer-free-access/> and <http://www.medianama.com/2013/06/223-rcom-star-sports-live-streaming/>

⁵⁴ <https://broadbandforum.co/threads/airtel-violates-net-neutrality-again-with-its-broadband-tv.48700/> and <https://campusdiaries.com/stories/how-indian-isps-are-already-fighting-net-neutrality>

⁵⁵ <http://www.thehindu.com/sci-tech/technology/internet/isps-slam-brakes-on-bittorrent-speeds/article3751310.ece>

⁵⁶ <http://www.medianama.com/2009/03/223-airtel-to-moderate-user-broadband-speeds-what-of-net-neutrality/>

music streaming service which offers unlimited music downloads, once subscribed⁵⁷ and it appears MTS India offers a similar package for its movie services.⁵⁸ Hathway Cable has started a movie service called Broadband Movies which is exempted from its Fair Usage Policy.⁵⁹ Certain ISPs are also reported to have entered agreements to exempt specific Internet TV sites from their Fair Use Policies.⁶⁰

- (iv) Tata Docomo entered into agreements to have special Youtube, Apalya Mobile TV (live TV streaming services) and Saavn (an online music streaming service) plans⁶¹ as well as agreements with WhatsApp for unlimited use of its services.⁶²
- (v) Similarly Times Internet's video on demand service BoxTV has tied up with Spectranet Broadband to offer free subscriptions, operator billing and improved data limits for Spectranet's fibre customers. "Spectranet is essentially encouraging customers to use BoxTV by providing free dedicated Internet usage data to stream movies on the service."⁶³
- (vi) Airtel charging pre paid mobile users more for access to VoIP services such as Skype and Viber.⁶⁴

(b) Agreements that allow users access only to specific content:

There are numerous instances of service providers providing specific packages that enable access to only limited parts of the Internet – for instance only Facebook or Youtube or that enable cheaper access to specific content.

- (i) Tata Docomo has put in place pay per site plans that charge customers depending on which websites they visit.⁶⁵
- (ii) MTS has reportedly offered packages where its customers can browse certain selected websites for free (such as Yahoo India, Yahoo Mail, Wikipedia, Makemytrip, shopping.indiatimes.com and Cricinfo.com.).⁶⁶
- (iii) Content providers (such as Whatsapp⁶⁷, Google⁶⁸, Facebook⁶⁹, Twitter⁷⁰ and Wikipedia⁷¹), trying to push for acquiring mobile usage of their services, are tying

⁵⁷ <http://www.medianama.com/2014/06/223-india-net-neutrality/>

⁵⁸ <http://www.medianama.com/2014/08/223-mts-movies/>

⁵⁹ <http://www.medianama.com/2014/07/223-hathaway-eros-now/>

⁶⁰ <https://broadbandforum.co/threads/airtel-violates-net-neutrality-again-with-its-broadband-tv.48700/>

⁶¹ <http://www.medianama.com/2014/07/223-tata-docomo-youtube/> and http://articles.economicstimes.indiatimes.com/2014-07-07/news/51133653_1_tata-docomo-gurinder-singh-sandhu-online-video-consumption

⁶² <http://www.medianama.com/2013/12/223-tata-docomo-whatsapp/>

⁶³ <http://www.medianama.com/2014/01/223-boxtv-carrier-billing-for-spectranet-fiber/>

⁶⁴ <http://blogs.economicstimes.indiatimes.com/et-citings/airtel-shouldnt-charge-for-voip-help-keep-the-net-neutral/>

⁶⁵ <http://www.medianama.com/2013/12/223-tata-docomo-whatsapp/> and <http://www.tatadocomo.com/pps-tariff-plans.aspx>

⁶⁶ <http://www.medianama.com/2010/04/223-mts-mblaze-net-neutrality-mobile-internet/>

up with telecom operators, where, sometimes, users get unlimited bandwidth for that service⁷² or are given access only to those specific services / websites.

- (iv) Google has reportedly entered into a deal with Airtel wherein all Google services were available for free to Airtel's Internet subscribers.⁷³ Facebook has a similar deal with Reliance Communications⁷⁴ as does WhatsApp.⁷⁵
- (v) Airtel has also entered into deals with Facebook to allow its services for free in 9 regional languages.⁷⁶ Uninor has announced deals with Facebook and WhatsApp to offer these services at specially discounted rates.⁷⁷ Vodafone has an agreement with Twitter where its users get free access to the site.⁷⁸ Twitter has similar agreements with Reliance and Airtel.⁷⁹ Wikipedia has partnered with Aircel to offer free access.⁸⁰
- (vi) In April 2013, RCOM and Twitter entered into an agreement⁸¹ where Reliance's customers could get free Twitter access for 90 days.
- (vii) In June 2013, Airtel partnered with Google to launch Free Zone service that will offer Airtel subscribers with free access to Google services such as Google Search, feature phone friendly version of Gmail and Google Plus.⁸²
- (viii) Airtel has announced plans to provide free Internet services to consumers for a limited period, which will allow users access to specific websites / content / services such as Facebook, Youtube, Snapdeal, Makemytrip and Twitter. Airtel will then offer specific content based plans once the free period expires (for instance, per day usage of Facebook at INR 1).⁸³

⁶⁷ <http://www.medianama.com/2014/05/223-whatsapp-airtel-50m-india/>

⁶⁸ <http://www.medianama.com/2013/06/223-airtel-partners-google-to-offer-free-google-search-gmail-google/>

⁶⁹ <http://www.medianama.com/2012/10/223-facebook-starts-offering-free-talktime-with-new-mobile-sign-ups-in-india/>

⁷⁰ <http://www.medianama.com/2013/07/223-twitter-vodafone-india/>

⁷¹ <http://www.medianama.com/2011/10/223-size-zero-wikipedia-looks-to-telcos-handset-cos-for-free-mobile-access/>

⁷² <http://www.medianama.com/2014/06/223-india-net-neutrality/>

⁷³ <http://www.medianama.com/2014/03/223-de-coding-indian-intellectual-property-law-on-the-need-for-network-neutrality-spicyip/>

⁷⁴ <http://www.medianama.com/2014/01/223-airtel-facebook-free-hindi/>

⁷⁵ <http://www.medianama.com/2013/12/223-tata-docomo-whatsapp/>

⁷⁶ <http://www.medianama.com/2014/01/223-airtel-facebook-free-hindi/>

⁷⁷ <http://www.medianama.com/2014/03/223-uninor-facebook-whatsapp/>

⁷⁸ <http://www.medianama.com/2013/07/223-twitter-vodafone-india/>

⁷⁹ <http://www.medianama.com/2013/07/223-twitter-vodafone-india/>

⁸⁰ <http://www.medianama.com/2013/07/223-wikipedia-partners-aircel-to-offer-free-access/>

⁸¹ <http://www.medianama.com/2013/04/223-reliance-free-twitter-access>

⁸² <http://www.medianama.com/2013/07/223-wikipedia-partners-aircel-to-offer-free-access/> and <http://www.medianama.com/2013/06/223-airtel-partners-google-to-offer-free-google-search-gmail-google/>

⁸³ <http://timesofindia.indiatimes.com/tech/tech-news/Airtel-to-woo-data-users-through-free-internet/articleshow/45063462.cms>

- (ix) Uninor, the Indian wing of Norway's Telenor, charges 50 paise for an hour of usage of Facebook, while pricing a day's Whatsapp use for Re 1.⁸⁴

- (x) There are various examples of Zero rating – all of which are uncompetitive and breach the principle of net neutrality. The most egregious are Facebook's Internet.org project where Facebook has tied up with Reliance Communications to provide a limited array of about 30 websites/services for free, and Airtel's 'Airtel Zero' which similarly provides free access to a limited array of content (based on which content providers pay Airtel to do so).

⁸⁴ <http://timesofindia.indiatimes.com/tech/tech-news/Airtel-to-woo-data-users-through-free-internet/articleshow/45063462.cms>

Annexure – II – Examination of Net Neutrality Regulation in Other Jurisdictions

- *Argentina*

In Argentina, Net Neutrality was recently passed into law in the general telecommunications services regulation. Article 56 of 2014's Law 27.078 (also known as "Argentina Digital") establishes the right of users to access neutral telecommunications networks, whereas article 57 of the same rule forbids "ICT service providers" to block, interfere, or restrict any content, application, service or protocol. Article 57 also establishes an exception allowing blocking or restrictions solely under a judicial order or at user request. Price discrimination is prohibited as well, which implies that zero rating practices would be banned, although they have not yet been tested.

- *Brazil*

Brazil has enacted legislation in 2014 known as the Marco Civil da Internet that *inter alia* covers the issue of net neutrality.

The legislation, which takes the form of a rights-based framework attempts to ensure "free enterprise, free competition and consumer protection" while ensuring "pluralism and diversity" in the online economy.

The legislation specifically notes the need to preserve and safeguard network neutrality (Article 3) and ensure free business models promoted on the Internet (as long as they do not conflict with other legal principles).

In the context of net neutrality, all Internet users in Brazil have a right:

- To the maintenance of the hired quality of Internet connection;
- To clear and complete information contained in the services contracts, with details on the arrangements for protecting the connection logs and access records to Internet applications, as well as network management practices that can affect its quality;
- To the application of consumer protection regulations in transactions conducted on the Internet.

Chapter III, Article 9 of the legislation deals specifically with network neutrality and requires all Internet / telecom service providers ('agent in charge of transmission') to treat all data packets equally ('with isonomy') regardless of content, origin and destination, service, terminal or application. Service providers are also barred from blocking, monitoring, filtering or analysing the contents of data packets in a way that would result in a breach of the principle of network neutrality.

Exceptions to this general rule are permitted (i.e. discrimination between packets and / or degradation of certain services is permitted) only in the following circumstances:

- (a) Technical requirements to ensure adequate provision of services

- (b) For prioritization of emergency services

The executive is empowered to make rules in this regard (and in the context of the limited exceptions mentioned).

Even in such exceptional circumstances however, the service provider is required to:

- (a) Act proportionately, with transparency and without unreasonable discrimination against specific services ('isonomia')
- (b) To inform its customers in advance of the practices followed for management and traffic mitigation purposes, including those related to network security
- (c) To provide services on non-discriminatory commercial conditions and refrain from practicing anticompetitive behaviors
- (d) Refrain from causing damage to consumers within the parameters of the strict liability provision of the general civil law statute in Brazil.

- *Canada*

The Canadian Radio Television and Communications Commission has issued a Telecommunication Regulatory Policy (CRTC 2009-657) known as the Internet Traffic Management and Net Neutrality (Telecom Regulatory Policy that creates a framework regarding traffic prioritization.

The framework attempts to balance the freedom of users to use the Internet for various purposes with the legitimate interests of ISPs to manage traffic on their networks, and emphasizes the need for ISPs to be more transparent about the measures that they are using to manage congestion. The policy establishes a framework which allows the CRTC to determine whether or not specific traffic management principles are in compliance with subsection 27(2) of the Telecommunications Act, which prohibits unjust discrimination and undue preference.⁸⁵

The Policy also includes provisions relating to Section 36 of the Act, which governs the carriage of content. ISPs are not allowed to degrade real-time or time-sensitive traffic (e.g. voice-over-Internet protocol or video conferencing) without prior CRTC approval.

- *Chile*

Chile was the first country in the world to legislate on the issue of network neutrality when it amended its General Telecommunications Law in 2010 to state: “*No [ISP] can block, interfere with, discriminate, hinder, nor restrict the right of any Internet user of using, send, receive, or offer any content, application, or legitimate service through the Internet, as well as any activity or legitimate use conducted through the Internet*”.⁸⁶

⁸⁵www.crtc.gc.ca/eng/archive/2009/2009-657.htm

⁸⁶<https://openmedia.ca/plan/international-comparisons/chile>. For the Official Notification in Spanish see <http://www.doe.cl/fsumarios/2010-08-26/z2601001.pdf>

The law also has articles that force ISPs to provide parental control tools, clarify contracts, guarantee users' privacy and safety when surfing, and forbids them to restrict any liberty whatsoever.⁸⁷

The Chilean regulators have issued various rulings to ensure ISP transparency, to forbid companies from entering into discriminatory agreements (such as for zero rating services)⁸⁸ and to reinforce the non-discriminatory traffic management principle.⁸⁹

Interestingly Chile has been cited as an example of a regulatory regime that has not hurt or stalled the growth / development of the telecommunications industry, but has in fact promoted competition in the market.⁹⁰

Israel

Mobile operators are required by law to act in a neutral manner, not to block or limit applications, and not to bar equipment features. The Ministry of Communications intends to extend this framework to all operators.⁹¹

- *Japan*

Japan follows a self-regulatory model under which the telecommunications carrier organisations developed and adopted the “Guidelines for Packet Shaping” in early 2008 as the minimum necessary rules to avoid arbitrary operations of packet shaping. The guidelines have subsequently been revised at least twice - in June 2010 and March 2012.⁹²

- *Netherlands*

The Netherlands enacted a law dealing with net neutrality in June 2012, becoming the second country in the world to do so. The law, known as the ‘Telecommunicatiewet’ or the Telecommunication Act, is in general an attempt to ensure the protection of civil liberties in the context of the Internet (the Act contains provisions regulating internet

⁸⁷ <https://openmedia.ca/plan/international-comparisons/chile> and <http://blogs.oii.ox.ac.uk/cobo/?p=1>

⁸⁸ Chile Bans Free Delivery Of Social Media Services To Uphold Net Neutrality <https://www.techdirt.com/articles/20140603/05442127439/chile-bans-free-delivery-social-media-services-to-uphold-net-neutrality.shtml>

⁸⁹ https://www.derechosdigitales.org/wp-content/uploads/igf_2014.pdf

⁹⁰ Alberto Cerda, AnevaluationoftheNetNeutralityLawinChile(2013)<http://www.digitalrightslac.net/en/una-evaluacion-de-la-ley-de-neutralidad-de-la-red-en-chile/>

⁹¹ <http://www.oecd.org/sti/broadband/2-9.pdf>

⁹² <http://www.oecd.org/sti/broadband/2-9.pdf>

disconnection, protecting users against surveillance etc.) and also contains a provision on net neutrality.

Article 7.4a(1) requires “Providers of public electronic communication networks which deliver Internet access services and providers of Internet access services” to not “hinder or slow down” applications and services on the Internet unless one of the following conditions is satisfied:

- (a) it is an attempt to minimize the effects of congestion, but even in such situations, equal types of traffic should be treated equally;
- (b) it is necessary to preserve the integrity and security of the network and service of the provider or the terminal of the end user;
- (c) it is done so as to restrict the transmission to an end user of an unsolicited communication, (provided that the end user has given prior consent);
- (d) it is done to give effect to a legislative provision or court order.

The legislation further requires the service provider to give a user notice in the event any network/security breach is emanating from the users computer before taking any measures to hinder or slow the traffic to or from that user (so as to permit the user to stop the infraction). In emergency situations (or where the user is not a customer of the relevant service provider), notice must be given as soon as possible.

Crucially, Article 7.4(3) specifies that access providers cannot make the rates of accessing the Internet dependent on the services and applications which are offered or used via these services. The executive is empowered to frame regulations in this regard (though any regulations must first be placed before Parliament).

The Act also states that service providers may be regulated with respect to quality of service parameters with a view to prevent “degradation of service and the hindering or slowing down of traffic” on public electronic communication networks (by mandating minimum requirements).

The explanatory memorandum to the Act *inter alia* clarifies that service providers are not allowed to offer a service consisting of access to (certain) web pages, services or applications, where the use of certain applications or services are blocked or priced differently. This means that providers may not offer packages to access a part of the Internet. Service providers may however differentiate their subscriptions for Internet access in other ways - such as bandwidth and data limits.⁹³

⁹³ <https://www.bof.nl/2011/06/27/translations-of-key-dutch-internet-freedom-provisions/> and http://wetten.overheid.nl/BWBR0009950/Hoofdstuk7/Artikel74a/geldigheidsdatum_10-02-2014 (in dutch). For a note - <https://www.eff.org/deeplinks/2012/05/netherlands-passes-net-neutrality-legislation>, wiki page : http://en.wikipedia.org/wiki/Net_neutrality_in_the_Netherlands

- *Norway*

The Norwegian Post and Telecommunication authority (NPT) has published “Guidelines for Internet neutrality”⁹⁴ in February 2009 which have been agreed to by major Internet service providers, some major content providers, industry organisations, the Consumer Ombudsman and the Norwegian Consumer Council. These guidelines are unenforceable and have no formal legal status.⁹⁵

The guidelines define three principles that describe how net neutrality can be achieved, so as to ensure Internet users’ determination over their own Internet access, as well as the ways by which different providers can compete freely to offer content and applications over the Internet. The three principles are:

1. Internet users are entitled to an Internet connection with a predefined capacity and quality.
2. Internet users are entitled to an Internet connection that enables them to send and receive content of their choice, to use services and run applications of their choice, and to connect hardware and use software of their choice that do not harm the network.
3. Internet users are entitled to an Internet connection that is free of discrimination with regard to type of application, service or content or based on sender or receiver address.

- *Peru:*

Article 6 of Law No. 29904, titled "Law for the Promotion of Broadband and the Construction of Fiber Optic Backbone" or “Ley de Promoción de la Banda Ancha y Construcción de la Red Dorsal Nacional de Fibróptica”⁹⁶ states that Internet service providers are to respect network neutrality and can not arbitrarily block, interfere with, discriminate against or restrict the right of any user to use an application or protocol, regardless of origin, destination, nature or property.

The Supervisory Agency for Private Investment in Telecommunications - OSIPTEL is the regulatory agency charged with determining what activities constitute a breach of the principle.⁹⁷

⁹⁴ [www.npt.no/ikbViewer/Content/109604/Guidelines for network neutrality.pdf](http://www.npt.no/ikbViewer/Content/109604/Guidelines%20for%20network%20neutrality.pdf)

⁹⁵ https://wiki.laquadrature.net/Overview_of_Net_Neutrality_Regulations#Norway

⁹⁶

[http://www2.congreso.gob.pe/sicr/cendocbib/con4_uibd.nsf/ECC8807B858DE05F05257C3D00620E04/\\$FILE/Ley_29904.pdf](http://www2.congreso.gob.pe/sicr/cendocbib/con4_uibd.nsf/ECC8807B858DE05F05257C3D00620E04/$FILE/Ley_29904.pdf)

⁹⁷ https://wiki.laquadrature.net/Overview_of_Net_Neutrality_Regulations#Peru . Though it must be noted that some commentators indicate that “the law leaves it to the ISPs to determine what constitutes “arbitrary” practices when it comes to the respect of the Net Neutrality principle.” See <http://www.intgovforum.org/cms/documents/dynamic-coalitions/dynamic-coalition-on-network-neutrality/309-dc-network-neutrality-report-of-the-igf-2014-meeting/file>

- Paraguay:

The sectoral regulator known as CONATEL has also recently passed a resolution on net neutrality.

- *Slovenia:*

Slovenia enacted a new Electronics Communications Act in 2012, and as per Article 203 of this legislation,⁹⁸ the regulatory authority is required to promote and preserve an open and neutral Internet and the possibility of access to information / applications per the free choice of end users. The Article also requires network operators and access service providers to strive for the preservation of an open and neutral Internet – specifically they should not limit, hold or slow down traffic at the level of individual service or application or execute any measures for its depreciation, except when required in the case of:

- (d) necessary technical measures to secure undisturbed activity of networks and services (e.g.: avoiding the traffic congestion),
- (e) necessary measures to secure integrity and security of the networks and services (e.g.: an elimination of unauthorized excessive seizure of transmission medium – channel),
- (f) necessary measures for limiting unsolicited communications.

All measures must be proportionate, non-discriminatory, limited in time and to the necessary extent.

- *UK*

The UK employs a self-regulatory model, which is supervised by Ofcom. Ofcom published a regulatory statement in 2011 setting out its approach to net neutrality and providing guidance to internet service providers wherein it has stated:

- (a) Transparency is key. Consumers should be made aware of any blocked services before subscribing to a service.
- (b) That there are benefits to both “best efforts” Internet access (web traffic conveyed on more or less equal terms) and the provision of managed services (prioritized traffic), and that they can co-exist.
- (c) Innovation is important for the development of new content and services and should Ofcom gather evidence that innovation is being stifled, then it may consider introducing a minimum quality of service.
- (d) Blocking of services is undesirable and Ofcom expects market forces to address this issue, but we will keep this position under review.

Countries such as Columbia, Iceland, Australia, Belgium and Mexico are apparently

⁹⁸ http://www.uradni-list.si/_pdf/2012/Ur/u2012109.pdf#!u2012109-pdf

actively considering introducing statutes or regulations to deal with the issue.⁹⁹

⁹⁹ https://wiki.laquadrature.net/Overview_of_Net_Neutrality_Regulations#South_Korea