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project

New Delhi, 5 September 2016

To,

Shri Arvind Kumar,
Advisor (Broadband & Policy Analysis),
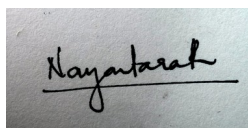Telecom Regulatory Authority of India,
New Delhi

Dear Mr. Arvind Kumar,

Thank you for the opportunity to comment on the consultation paper on Internet Telephony. Please find below the response from Internet Democracy Project (www.internetdemocracy.in) to the consultation paper.

The Internet Democracy Project is a Delhi-based civil society initiative that works for an Internet that supports freedom of expression, democracy and social justice through research, advocacy and debate in India, and beyond.

Please do let us know if you need any further clarifications regarding our submission. We hope that our comments will be taken into consideration.

Thank you and best regards,
For the Internet Democracy Project,

Nayantara Ranganathan
Programme Manager- Freedom of Expression
Internet Democracy Project

Consultation paper no. 13/ 2016 on Internet Telephony

The Internet Democracy Project's submission

The Internet Democracy Project is concerned with TRAI's Consultation paper no. 13/2016 on Internet Telephony specifically from the perspective of the protection of network neutrality.

The consultation paper raises many issues arising from the transitioning of circuit-switched communication technologies to packet-switched technologies in the provision of the public utility of telecommunication services. Specifically, it examines interoperability between circuit-switched and packet-switched networks, and is concerned with which license holders can offer 'unrestricted Internet Telephony'[1], and what should be the arrangements between them for interconnection, billing, numbering and quality of service.

Mobile phone penetration in India is at 80%[2] in the first quarter of 2016, and expected to grow even more due to factors like reduction in price of handsets and cheaper call rates. A large number of these users are not connected to the Internet through mobile data and use mobile phones purely for voice telephony. However, this is changing with increasing affordability of calling on Voice over Long Term Evolution (VoLTE) which uses packet-switched networks for voice telephony and also supports high speed data transfer. Most recently, Reliance Jio Infocomm launched its network services where voice and messaging will be free even after the Welcome Offer period[3]. The number of subscribers of Plain Old Telephone Service (POTS) or landline users has stagnated over the years and is only expected to decrease further.[4]

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1   Unrestricted Internet Telephony means the ability to interconnect with POTS (PSTN), as well as circuit-switched mobile telephony (PLMN). UAS and Unified license holders are allowed to have unrestricted Internet Telephony, whereas ISPs can only provide restricted Internet Telephony. According to ISP license terms, it means that ISP-provided Internet Telephony calls cannot terminate on landline or mobile phones within India. The Internet Telephony call can be received on a mobile handheld device, but only because it is initiated as well as completed on an IP based network.

2   http://www.medianama.com/2016/06/223-ericsson-consumer-report-june-2016/

3   http://economictimes.indiatimes.com/industry/telecom/reliance-jio-net-speed-will-be-80-times-faster-than-rivals-says-mukesh-ambani/articleshow/51624093.cms

4   http://www.dot.gov.in/sites/default/files/u75/Annual%20Report%202015-16__English.pdf

The result of interoperability between Public Switched Telephone Networks (PSTN) or landlines, Public Land Mobile Networks (PLMN) or mobile phones and IP networks would mean that different Consumer Premises Equipment (CPE) like telephones, mobile handsets, tablets etc. can be used to place voice calls to each other, notwithstanding the fact that the underlying technologies that they operate on are different.

Interoperability between different kinds of networks increases the overall capacity of networks and generally leads to maximisation of benefits that the networks can offer. Interoperability should therefore not only be allowed, but also enabled in a fair and transparent manner.

Internet Telephony and Network Neutrality

The thrust of advocacy on network neutrality has been that Internet traffic should be treated in a non-discriminatory manner such that no content/application/service should get preferential treatment for commercial reasons. The Internet Democracy Project has in the past argued that ensuring the non-discriminatory functioning of the pipes strengthens competition, maximises benefits that the Internet can bring for small innovators, political participation etc., and impedes the Internet from mirroring conventional inequalities faced by many marginalised groups.[5] We have argued that the principle of network neutrality is valuable even when pitted against inexpensive or free access to a selection of services on the Internet.[6]

In the present context, network neutrality concerns might not be immediately obvious. The consultation paper asks whether Internet Service Provider license holders (ISP) should be allowed to provide unrestricted Internet Telephony such that they can interconnect with POTS and fixed/mobile wireless subscribers, and what should be the conditions therein.

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5   https://internetdemocracy.in/reports/our-response-to-department-of-telecommunications-report-on-net-neutrality/

6   https://internetdemocracy.in/reports/our-response-to-trai-consultation-paper-on-differential-pricing-for-data-services/

While contemplating telephony over the public Internet, the consultation paper does not consider whether content/applications/service providers (players who do not operate any part of the network) should be allowed to compete alongside to provide unrestricted Internet Telephony. It does not examine the consequences of such an exclusion. It is surprising that the question is not even considered in a consultation that involves Internet Telephony being provided over the 'public Internet', and at a time when networks and network providers' roles are evolving and the transition to fully IP based networks is in the near future.

Recently released BEREC Guidelines on the Implementation of European Network Neutrality Rules[7] (BEREC implementation guidelines) asks national regulators to look into interconnection arrangements only when interconnection is implemented in a way that seeks to circumvent regulation and affect end-user rights under Article 3(1)[8] of European Union Regulation 2015/2120[9].

However, it is nevertheless instructive in some respects. The BEREC implementation guidelines distinguish between "Internet Access Services" (IAS) and "Specialised Services".[10] The former is what is understood as "public Internet" in the TRAI consultation paper. It is defined as:

> publicly available electronic communication service which provide access to the internet, and thereby connectivity to virtually all end-points of the internet, irrespective of the network technology (e.g. fibre, cable, mobile) used, and

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7   http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory _best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules

8   Article 3: Safeguarding of open internet access
1. End-users shall have the right to access and distribute information and content, use and provide applications and services, and use terminal equipment of their choice, irrespective of the end-user's or provider's location or the location, origin or destination of the information, content, application or service, via their internet access service.

This paragraph is without prejudice to Union law, or national law that complies with Union law, related to the lawfulness of the content, applications or services.

9   http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015R2120

10 http://berec.europa.eu/eng/net/regulation/

> irrespective of the terminal equipment (e.g. mobile phone handset, tablet laptop) used.

The latter is defined in the guidelines as:

> services other than internet access services which are optimised for specific content, applications or services, or a combination thereof, where the optimisation is necessary in order to meet requirements of the content, applications or services for a specific level of quality.

Further, the guidelines contemplate the shifting nature of consumer expectations and trends, and account for the fact that a service deemed to be a specialised service today may not necessarily qualify as a specialised service in the future due to the fact that the optimisation of the service may not be objectively necessary, as the general standard of IAS may have improved.

This distinction between IAS and specialised services (a) specifically safeguards IAS from being degraded in any way (b) casts as a separate category, content/applications/services that seek to provide QoS (c) requires logically separate networks (and not the public Internet) where such a QoS might not be objectively necessary.

This is instructive and relevant for the present consultation because it is suggested in the paper that the 'public Internet' would be used by a limited set of players (licensees who can provide unrestricted VoIP) excluding non-network-operators who wish to provide unrestricted VoIP, to provide a service with QoS, or in other words, prioritising their own voice service over others'. In doing this, TSPs (Unified Access, Cellular Mobile Telephony Service and Unified Licensees) and ISPs, if allowed (and they should be allowed), would be gatekeeping entry into unrestricted telephony for content/application/service providers on what is the public Internet (and not logically separate networks). This would affect innovation in voice to a large extent, and the potential benefits of it to users. Before moving forward, the larger question has to be addressed of whether any measures are temporary and time-bound until transition to IP networks are complete, or whether TSPs will be allowed to have an advantage over user-developed VoIP applications leading to network neutrality concerns.

In framing the consultation, TRAI should reconsider two things:

1. Allowing only licensees to provide unrestricted Internet telephony on public Internet

2. QoS advantage of PSTN/PLMN-IP interconnection cannot be crystallised into a permanent advantage for TSPs in the future when Consumer Premises Equipment (CPE) being used might still be landline telephone and mobile phone handsets, but the provision of telephony is over IP-based networks.

Forward-looking regulation

A forward looking regulation would also consider making some bold changes already or anticipate developments and set a horizon period for structural changes in the sector:

1. Reduction in license levies paid by TSPs

   A first step towards allowing more players in the field of unrestricted Internet telephony would be to reduce TSPs' levies. It is understandable that TSPs (who are required to comply with license terms, provide financial bank guarantee and also pay an annual license fee 8% of aggregate gross revenue earned on Internet Telephony), do not want to let ISPs (who are not subject to the same entry requirements) and content/application/service providers (who pay no license fees) to compete alongside. There should not be a disincentive to allow additional players in the market. This point is argued further in the answer to Question 1.

2. Progressive unbundling of network services and voice services should accompany transition to IP-based networks

   Regulation in this transition phase should be aware that an integrated network system where network and voice services are necessarily offered by the same entity will not be suited for packet-switched networks where modularity is possible. There is likely to be a strong downward pressure on traditional voice telephony tariffs from VoIP applications,

and this will only increase in the future. Regulation should move towards recognising that TSPs would have to capitalise on access charges, resale of network services etc. and not rely on voice as primary source of revenue. This means that TSPs would have to spin off into becoming two separate entities: one operating networks and the other offering voice services over the network.

The reason for this is that in the market for Internet Telephony, as more networks are deployed, the basis of competition is likely to shift from factors like sound quality, call drop rate to flexibility of communication.[11] As broadband penetration increases, the quality of calls made over IP-based networks will get better and no perceptible difference will be felt by users between a Whatsapp call and call from a mobile network operator to another. Although there is a long way to go before there is sufficient capacity through fibre optic networks and before QoS is high for even unmanaged services, the basis of competition will still slowly move towards modularity of use from and to various kinds of devices, as well as the possibility of multiple use cases beyond telephony.

Commentators say that due to TSPs' vested interest in safeguarding voice revenues rather than innovating on services that they view as cannibalising their revenues, innovation would not happen at the same pace as innovation of voice services developed by service platforms which are set up for 'flexibility and openness to external innovation.'[12] Twilio, for example provides an Application Programming Interface (API) that enables video, voice-over-IP, and messaging to be embedded into desktop, web, and mobile software. It also lets users connect to PSTN and PLMN and create custom communications solutions according to their needs. Innovations like these would be pushed out of the Indian market or hampered if only TSPs (or indeed only TSPs and ISPs) can interconnect.

The separation of service provisioning from the management of IP-based services has made it possible for the development of VoIP services to be no different from developing

11 https://www.visionmobile.com/blog/2012/10/the-need-to-unbundle-voice-challenging-century-old-assumptions-about-telephony

12 Ibid.

other kinds of applications on the Internet. The same level of free entry is desirable for VoIP services as, say, a text-based communication service.

Experts have noted that a progressive separation of network services and voice services would protect competition in both markets.[13] In other words, operation of networks (along with resale of network services) should be separated from provision of voice over it. The consultation paper also touches on this when it says '*VoIP demonstrates that the basic premise of traditional voice telephony – the network and voice services must be owned and operated by the same firm – is no longer relevant.*'

In light of above comments, we answer TRAI's questions:

1. **What should be the additional entry fee, Performance Bank Guarantee (PBG) and Financial Bank Guarantee (FBG) for Internet Service providers if they are also allowed to provide unrestricted Internet Telephony?**

Instead of erecting barriers for ISPs to provide unrestricted Internet Telephony, existing levies on UAS, CMTS and Unified licensees (collectively called TSPs) should be progressively reduced to ensure that such licensees do not have perverse incentives to resist entry of new players in the market. ISPs should not have to pay an additional entry fee, Performance Bank Guarantee or Financial Bank Guarantee if they want to provide unrestricted Internet Telephony. Content providers should also be allowed to compete in the market for unrestricted Internet Telephony in the interest of competition, innovation and preserving low-entry barriers in provision of content/application/service over the public Internet.

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13 http://www.mayin.org/ajayshah/MEDIA/2016/unbundling.html

Presently, the license conditions of ISPs allow Internet telephony with restrictions[14], while TSPs are allowed unrestricted Internet Telephony. This means that currently, ISPs are not allowed to connect to a landline telephone number or a mobile phone number within India, but a caller connecting from an ISP outside the country may do so.

It is in the interest of customers that connectivity and telephony be seamless. There has progressively been a liberalisation of traffic flows since the introduction of Internet telephony since 2002. Most recently in April 2016, the DoT amended UAS license terms to allow IP based interconnections with non-IP based networks.[15] This liberalisation should continue and entry barrier should be low for anyone looking to offer VoIP.

Network operators in other regions of the world are not subject to the kind of heavy annual revenue shares that Indian TSPs are subject to. The National Telecom Policy 2012 also sees the need to rationalise levies on the Indian telecom sector.[16] Instead of requiring ISPs interested in providing Internet telephony to acquire a Unified License by paying an entry fee of Rs. 15 crores, depositing financial and bank guarantees and be subject to revenue share, the government should instead reduce the levies that are imposed on UAS, CMTS and Unified licensees. Requiring fixed and mobile operators to be subject to a revenue model where 8% of their Aggregate Gross Revenue (AGR) goes towards license fees heavily disincentivises them from cooperating to open up the market to players who are not subject to the same levies.

Further, convergence of voice and data networks in the form of VoIP services, is sharpening the boundaries between networks and content. What would the consequences be to the evolution of the network and voice services if a difference is created between Internet telephony provided by

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14 ISP license condition:
"*Internet telephony means a service to process and carry voice signals offered through Public Internet by the use of Personal Computers (PC) or IP based Customer Premises Equipment (CPE) connecting the following:*
  1. *PC to PC; within or outside India*
  2. *PC / a device / Adapter conforming to standard of any international agencies like- ITU or IETF etc. in India to PSTN/PLMN abroad*
Any device / Adapter conforming to standards of International agencies like ITU, IETF etc. connected to ISP node with static IP address to similar device / Adapter; within or outside India"
15 http://www.medianama.com/2016/04/223-dot-unified-access-service/

16 Para 12.3, http://www.trai.gov.in/WriteReadData/userfiles/file/NTP%202012.pdf

network operators and Internet telephony provided by user-developed applications? As the consultation paper notes, "*Internet Telephony might very well be considered the front-runner IP based converged service, but its provision happens by actors other than network operators or Internet service providers.*" From the framing of questions in the consultations, it seems that these actors will be sidelined into not being able to connect with PSTN/PLMN without becoming a licensee. That would be hurtful for innovation, decrease competition in the market, and not lead to the kind of lowered costs for Internet users that convergence has enabled.

2. **Point of Interconnection for Circuit switched Network for various types of calls is well defined. Should same be continued for Internet Telephony calls or is there a need to change Point of Interconnection for Internet Telephony calls?**

Flexibility and diversity of interconnections should be the result of any regulation. Points of Interconnection for content/application/service providers with other networks should also be examined in the same discussion, and TRAI can do this once it addresses the question of allowing unrestricted Internet Telephony by all.

Reliable interconnections give network benefits such as cost reduction, improved user experience and higher investments in the ICT sector[17]. Towards this end, existing infrastructure should be leveraged, as well as new ways of interconnecting enabled.

Due to network effects, an Internet Exchange Point (IXP) which has many service providers exchanging traffic is attractive for other service providers to connect with. Many cities in India have IXPs[18] and these can be leveraged to provide interconnection for PSTN/PLMN interconnection as well. Internet interconnection arrangements have been flexible and ISPs have adapted to changes in mutually beneficial ways. Such models would lead to more efficient network usage and improved network performance where calls do not have to traverse the backbone.

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17 http://www.internetsociety.org/policybriefs/internetinterconnection

18 http://www.internetexchangemap.com/

New infrastructures and arrangements should also be enabled in order to provide diverse options for interconnection. The role of the regulator should be limited to ensuring a fair and competitive access to regional networks for transit, while leaving room for voluntary and independently negotiated agreements for interconnection.

3. **Whether accessing of telecom services of the TSP by the subscriber through public Internet (Internet access of any other TSP) can be construed as extension of fixed line or mobile services of the TSP? Please provide full justification in support of your answer.**

Yes, if the subscriber uses the public Internet to access TSP services, that can be construed as an extension of fixed line or mobile services of the TSP.

If new technologies enable the cost of calls to go down, then they are desirable. Thus, if transport of some leg of the call happens via IP-based networks in order to price telecom services at more competitive prices, then such routing should be allowed. If the extension of TSP services argument is used to keep certain players out of the scope to compete to connect with the TSP, then it should not be construed as extension of fixed line or mobile services of the TSP.

Questions 4, 5, 6 and 7:
4. **Whether present ceiling of transit charge needs to be reviewed or it can be continued at the same level? In case it is to be reviewed, please provide cost details and method to calculate transit charge.**
5. **What should be the termination charge when call is terminating into Internet Telephony network?**
6. **What should be the termination charge for the calls originated from Internet Telephony Network and terminated into the wireline and wireless Network?**
7. **How to ensure that users of International Internet Telephony calls pay applicable International termination charges?**

Transit charges, Interconnection scenarios and the Interconnect Usage Charges (IUC) would have to be entirely different if even content/application/service providers are allowed to interconnect to

provide unrestricted Internet Telephony. The question should be revisited once TRAI dwells on the question of why content/application/service providers have been excluded from providing unrestricted Internet Telephony over unmanaged public network.

A Calling Party Pays (CPP) termination charge regime used to calculate termination charges for retail charging in circuit-switched networks is not suitable for an increasingly IP-based network environment. Time units like seconds/minutes are not suitable for billing as dedicated channels are not established during IP-based calls, and the receiving party pays for data usage in any case.

As TRAI notes:

> Since IP based networks are poised to be the networks of the future for providing telecom services, a Bill-and-Keep regime (for interconnection) may be seen as a natural progression in line with the development of technology.[19]

The advantages of a Bill-and-Keep regime is summed up in TRAI consultation on Interconnection Usage Charges[20]:

> With the evolution of technology and convergence, more and more telecom networks are migrating towards IP-based networks. Regulators, the world over, are working towards facilitating migration towards Next Generation Networks (NGN) which are IP-based networks so that innovative services could be provided to consumers. In IP–based networks, traditionally, there has been no custom of levying termination charges for the traffic arriving in a particular network; BAK is the natural regime in the public Internet. One argument is that the regime of termination charges works as a disincentive to the deployment of IP-based telecom networks by the TSPs. Moving towards BAK will encourage deployment of IP-based telecom networks. Since IP based networks are poised to be the networks of the future for providing telecom services, a BAK regime

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19 http://www.medianama.com/2016/08/223-trai-iuc-voip-paper/

20 http://www.trai.gov.in/WriteReadData/WhatsNew/Documents/Consultation_Paper_05_Aug_2016.pdf

may be seen as a natural progression in line with the development of technology.

The current regime calls for a re-evaluation as TRAI also notes that the Telecommunication Interconnection Usage Charges (Eleventh Amendment) Regulations 2015 were drafted keeping in mind circuit switched, and not packet switched networks-

It is worthwhile to mention that through the Telecommunication Interconnection Usage Charges (Eleventh Amendment) Regulations, 2015 dated 23.02.2015, the mobile termination cost was estimated on the basis of underlying network having Circuit Switched Radio Access Network and not Packet Switched Radio Access Network. Introduction of Packet Switched Radio Access Network in the new networks raises a concern as to whether the Mobile Termination Cost estimated for networks having Circuit Switched Radio Access Network would still be applicable on networks with Packet Switched Radio Access Network.

However, transit and interconnection charges would have to be entirely reconsidered if players who operate no part of the network are also competing to provide unrestricted Internet Telephony.

8. Should an Internet telephony subscriber be able to initiate or receive calls from outside the SDCA, or service area, or the country through the public Internet thus providing limited or full mobility to such subscriber?

If the call uses the public Internet, then the subscriber should be able to initiate or receive calls from outside the SDCA/service area/country, availing full mobility.

The regulator should not restrict flexibility of communications simply because calls become cheaper and TSPs say their revenues are threatened. Revenues from voice is likely to go down with technologies like VoLTE coming into the market. TSPs should be encouraged to shift their business models in response to these trends, and look at data charges and resale of network services to remain being profitable. If users ultimately benefit, whether from increased mobility or cheaper calls, adoption of technologies that enable maximum user benefit should be allowed. Besides, there is a

positive correlation between calls becoming cheaper and Internet adoption increasing. With India lagging far behind in access, at 135th in the world in the ITU's Access and Use Sub-Index[21], the regulator should not play any role in impeding lowering of costs and increase in mobility.

9. Should the last mile for an Internet telephony subscriber be the public Internet irrespective of where the subscriber is currently located as long as the PSTN/PLMN leg abides by all the interconnection rules and regulations concerning NLDO and ILDO?

We have argued that before moving forward with any speculation on specific scenarios involving the use of public Internet, there are questions that TRAI has to consider in order to secure the open nature of the Internet, and innovation in voice services.

10. What should be the framework for allocation of numbering resource for Internet Telephony services?

The framework for allocation of numbering resource for Internet Telephony services should be revisited once TRAI examines if content/application/service providers can also provide unrestricted Internet Telephony. ISPs should be allowed to use ENUM[22] standards to translate E-164[23] numbering scheme to IP addresses.

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21 http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf

22 ENUM comprises a set of standards and mechanisms for transforming public telephone numbers into Uniform resource identifiers (URI) using Domain Name System (DNS) to be used in NGN. It enables Service Providers and Users to continue to use telephone numbers which is beneficial for the shift from the existing public switched telecommunication environment to an Internet Protocol based environment and for the integration of new IP multimedia services.

23 E.164 is an ITU-T recommendation, titled The international public telecommunication numbering plan, that defines a numbering plan for the world-wide public switched telephone network (PSTN/PLMN/PLMN) and some other data networks. E.164 defines a general format for international telephone numbers.

TRAI's 2008 recommendations to DoT[24] notes why ENUM is suited for the needs of Internet Telephony. This numbering system allows for innovation in voice and enterprise solutions as well:

> ENUM permits additional means for identifying user, enriching the user identification information creating private number plans, introducing special billing arrangements. (for e.g., reverse billing, split billing etc) makes it suitable for Internet Telephony based solutions.

If ENUM standards are used, standardised numbering resources can be made available to application developers as well to interconnect with PSTN/PLMN.

11. Whether Number portability should be allowed for Internet Telephony numbers? If yes, what should be the framework?

Similar to the earlier question on numbering, number portability can be adequately discussed only once TRAI reconsiders the players allowed to provide unrestricted Internet Telephony.

Number portability is definitely desirable as it reduces switching costs of users, because users do not have to worry about sharing a new number with their contacts if they want to change their operator. However, additional considerations will be there if content/application/service providers are also in the mix, and TRAI should move forward on designing the framework for number portability after allowing them or after giving good reasons for why they will not be allowed.

Questions 12 and 13:

12. Is it possible to provide location information to the police station when the subscriber is making Internet Telephony call to Emergency number? If yes, how?

13. In case it is not possible to provide Emergency services through Internet Telephony, whether informing limitation of Internet Telephony calls in advance to the consumers will be sufficient?

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24 http://www.trai.gov.in/WriteReadData/Recommendation/Documents/recom18aug08.pdf

The question of whether emergency calling should be a part of Internet Telephony should also be revisited once TRAI reconsiders the players who may provide unrestricted Internet Telephony.

The ability to make calls to emergency numbers is contingent on being able to accurately identify the geographical location of the subscriber. This is particularly difficult when non-licensees are also providers of unrestricted Internet Telephony. The entry of content/application/service providers brings in special challenges that may not have been considered when only licensees have been allowed to provide unrestricted Internet Telephony.

TRAI should revisit the question once it has dealt with why content/applications/services providers are not being envisaged as players even in the longer term.

14. Is there a need to prescribe QoS parameters for Internet telephony at present? If yes, what parameter has to be prescribed? Please give your suggestions with justifications.

No, QoS parameters should not be prescribed for Internet telephony calls routed over the public Internet.

We have argued in the past that the choice to avail QoS over IP-based networks should be left to users.

The consultation paper admits that the difference in QoS between managed and unmanaged networks is "*getting narrower with technological advancement, new coding techniques and availability of higher bandwidth broadband connections.*" [para 1.6] What this means is that, with growing network capacity, a point will be reached when a VoIP call on a unmanaged network (without assured QoS) will be the same quality as a VoIP call placed on a QoS-assured managed IP network, which is logically separate from the public Internet.

The consultation paper also goes on to say that "*In future, Internet will be the primary medium through which converging voice and data services will flow.*" Given that such a convergence is

imminent, it becomes important to not vest one set of players (TSPs) with an advantage over others (VoIP offered by entities who don't own any part of the networks).

TRAI should be very cautious when it is taking decisions about QoS assurance on the public Internet, as TSPs would have an advantage that no other content/application/service provider would have: that of being able to discriminate between the treatment of different packets for commercial considerations. This would threaten network neutrality and affect the openness of the Internet by privileging some content/applications/services over others.