

Tata Communications response to the CP on Internet Telephony

4.1 Whether Internet service provider should be permitted Internet Telephony services to PSTN/PLMN within India? If yes, what are the regulatory impediments? How such regulatory impediments can be addressed? Please give your suggestions with justifications. (para 3.10)

Yes, ISPs should be permitted Internet Telephony Services to PSTN/PLMN within India. We believe this is imperative for the growth and viability of ISP's and for Indian telecom market at large. Some of the benefits from such a move are listed below:

- Facilitate increased penetration of Internet and Broadband through better bundling of voice and data/Internet services
- **Create much needed competition and choice in the Fixed Line Services market which is currently dominated by a single player**
- Facilitate price reduction for local and long distance tariffs, thus benefiting customers directly and also expanding the fixed voice market
- Encourage investments in convergence and unified communication related initiatives
- Facilitate development and launch of new services for customers
- Provide additional stream of revenue share to Government

The current ISP license would need to be modified suitably to enable the provision of Internet Telephony services to PSTN/PLMN in India. In the past, the ISP license was modified to create a category for restricted Internet Telephony. We recommend a similar approach that creates a new category of ISP license with the ability to provide all access services with appropriate entry and license fees as well as other terms conditions. This will then also ensure that every broadband connection provided by such ISPs who obtain the new proposed ISP license would contribute towards the crucial tele-density and would also result in the growth of the fixed service in the country, which is presently on the decline. **All our comments hereinafter in our response are with reference to the new category of ISP license which we have proposed above.**

The other regulatory issues can be addressed as follows:

Numbering Plan: The Numbering scheme for ISPs providing unrestricted internet telephony services should be based on E.164 for convenience of the consumers and as per international best practices in the category.

Level Playing Field and Interconnection: The proposed new ISP license should have the same (relevant) obligations and rights as the UASL /CMSPs to ensure a level playing field, though we believe, in the initial years there should be some relaxation on the commercial aspect for the proliferation of the service and create a level competitive landscape. We recommend the interconnection regime for this new category of licensee can be separately determined and issued by TRAI after consulting all the stakeholders and taking care of all the technical and commercial issues

Emergency Dialing: At present, emergency dialing from Internet Telephony cannot be addressed fully in almost all countries due to the absence of location information, etc. though some advances have been made especially in EU member states. However, unrestricted IP telephony has been allowed in the US and other European countries. We recommend that emergency dialing should not be made mandatory requirement for the new ISP license, rather the progress on the issue should be closely watched and subscribers should be communicated upfront about the limitations of the same.

Lawful Interception: This is a critical requirement from the security view point for the country. Thus, we recommend having similar obligations as other categories of access providers.

Quality of Service: Quality of Service in Internet Telephony is directly dependent on the quality of broadband services being used by the subscribers, thus a separate Quality of Service should not be imposed on the Internet Telephony services. However, subscribers should be communicated about the limitations of the service and the customers can make a trade-off / choice between tariffs, availability and quality.

4.2 Whether allowing ISPs to provide Internet Telephony to PSTN/PLMN within country will raise issues of non-level playing field? If so, how can they be addressed within present regulatory regime? Please give your suggestions with justifications. (para 3.11)

We believe allowing ISP's to provide Internet Telephony to PSTN/PLMN within county should not raise issues of non level field, as Internet Telephony is no competition to players operating with UASL & CMTS. The current penetration of Broadband is just about 4 million, and even with dial-up included, the number of Internet subscriber numbers is just about ~10 mn, which is only about 3.3% of the fixed and mobile penetration of nearly 300mn in India. Even though Internet Telephony

will help grow the Internet and broadband penetration, it will continue to be very small fraction of the total mobile and fixed customer base. Thus allowing Internet Telephony to PSTN/PLMN in India will only complement the other national efforts of making communications and telephony cheaper and more available in this country.

Level playing field issues, if at all, should be addressed by setting appropriate terms and conditions, including entry fees, license fees, obligations and interconnection regime, for the ISPs that are permitted to offer unrestricted Internet Telephony. It is to be noted that license conditions have been modified in the past without necessarily ensuring level playing field for existing operators (reduction of NLD and ILD licenses entry fees and roll-out obligations being a case in point), with the stated objective of increasing competition and therefore, customer benefit.

4.3 ISPs would require interconnection with PSTN/PLMN network for Internet telephony calls to PSTN/PLMN. Kindly suggest Model/ architecture/ Point of Interconnection between ISPs and PSTN/PLMN?
(para 3.12)

We view that the interconnection model for the new proposed category of ISPs should have the same rights and obligations as other access licensees and should have a similar commercial model on per call charge basis for customer ease. Alternatively, the new Licensee can have agreements with a BSO/UASL and use their network for transiting calls to the networks of various BSOs/UASPs/CMSPs. The ISPs who migrate to the new ISP category will have the responsibility of conversion of IP calls to TDM format before termination in PSTN/PLMN network.

Globally interconnection between ISP's & PSTN/PLMN today happens on IP or TDM, whichever is available with the PSTN/PLMN, though it will gradually move to IP softswitches based architecture (Next Generation Networks). Therefore, IP based interconnection should also be permitted subject to mutual agreement between the parties.

Please refer to the diagram below for both scenarios of interconnection:

Fig 1.1 Proposed Architecture between ISP's Softswitch and PSTN/PLMN Softswitch

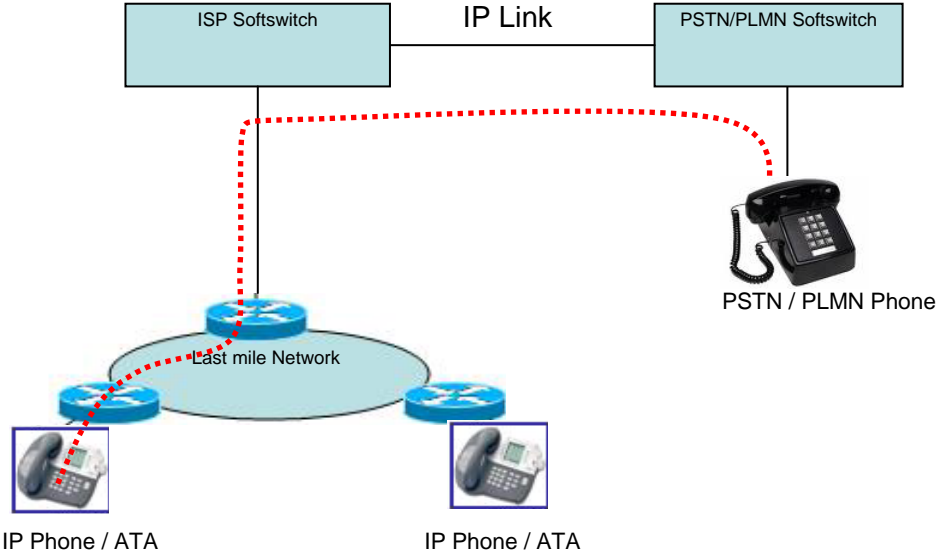
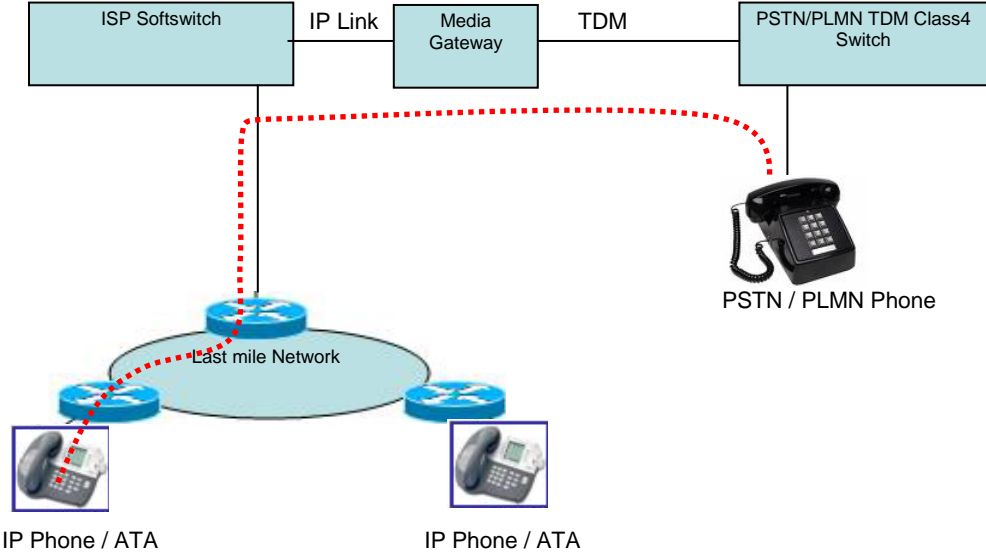


Fig 1.2 Proposed Architecture between ISP's Softswitch and PSTN/PLMN TDM Switch



4.4 Please give your comments on any changes that would be required in the existing IUC regime to enable growth of Internet telephony? Give your suggestions with justification to provide affordable services to common masses? (para 3.12)

The current IUC regime need not be changed in any major way to accommodate the new category of access service providers. We suggest that TRAI determine and mandate cost based transit charges for providing transit interconnection connectivity. This will ensure that new service providers can roll-out Internet Telephony services quickly and economically. The new ISPs providing unrestricted Internet Telephony services should work under the same IUC regime of carriage and termination charges as applicable to existing access providers.

4.5 What should be the numbering scheme for the Internet telephony provider keeping in view the limited E.164 number availability and likely migration towards Next Generation Networks? Please give your suggestions with justifications. (para 3.13)

Standard E.164 numbering is critical for success of Internet Telephony, since E.164 format of numbering is easy to use and familiar to customers. Moreover, billions of the devices currently available on different networks use only numeric keypads. Hence E.164 numbers can easily be dialed using such devices. Since the number of Internet Telephony subscribers are expected to be a small incremental percentage of the mobile subscribers, they can be accommodated under the current numbering scheme.

Further , it has been noted in the Consultation Paper that NNP2003 is already under review by a Committee due to existing shortage of Numbering resources, the issue of numbering scheme for Internet telephony services should be reviewed along with those of other access services.

4.6 UASL and CMTS operators are allocated number resources and permitted to provide Internet telephony including use of IP devices/Adopters. Whether such devices should be allocated E.164 number resource to receive incoming calls also? If so, whether such number resources should be discretely identifiable across all operators and different than what is allocated to UASL and CMTS to provide fixed and mobile services? Give your suggestions with justifications? (Para 3.4)

It is important that Internet Telephony customers be able to receiving incoming calls, else their utility will be seen as limited. Having a discretely identifiable numbering for IP telephony calls will be beneficial from a customer's perspective. This will also ensure that customers can be proactively informed about the features of this service. A 10 digit number

series with first 3 digits to identify the ISP and next 7 for customer identification can be used.

4.7 If ISPs are allowed to receive Internet telephony calls on IP devices/ Adopters, what numbering resources should they be allocated? (para 3.13)

In USA and most European countries, Internet Telephony services are interconnected with PSTN and PLMN for calls in both the directions. Such services are treated at par with PSTN services and E.164 format numbering resources are provided for such services either directly by the licensing authorities or enabled through third party transactions. A 10 digit number series with first 3 digits to identify the ISP and next 7 for customer identification can be used.

4.8 Is it desirable to mandate Emergency number dialing facilities to access emergency numbers using internet telephony if ISPs are permitted to provide Internet telephony to PSTN/PLMN within country? If so, Should option of implementing such emergency Number dialing scheme be left to ISPs providing Internet telephony? Please give your suggestions with justifications. (para 3.14)

At present emergency dialing cannot be addressed fully in almost all countries due to the absence of location information etc., though some advances have been made especially in EU member states. We recommend that emergency dialing should not be made mandatory requirement for ISPs providing Internet Telephony; rather the progress on the issue should be closely watched and subscribers should be informed about the limitations of the service.

4.9 Is there any concern and limitation to facilitate lawful interception and monitoring while providing Internet telephony within country? What will you suggest for effective monitoring of IP packets while encouraging Internet telephony? Please give your suggestions with justifications. (para 3.15)

There does not appear to be any concern and limitation to facilitate lawful interception and monitoring while providing Internet Telephony services within the country provided appropriate interception and monitoring devices are installed by the Internet Telephony service providers at the

internet telephony gateway itself. The obligation for providing the lawful interception and monitoring should rest with the Service Provider providing the Internet Telephony services. As a way forward a Central Monitoring agency can be set up for the same which will help reduce the costs incurred by individual service providers thereby helping reduce end customer cost..

4.10 Is there a need to regulate and mandate interoperability between IP networks and traditional TDM networks while permitting Internet telephony to PSTN/PLMN within country through ISPs? How standardization gap can be reduced to ensure seamless implementation of future services and applications? Please give your suggestions with justifications. (para 3.16)

There is no need to regulate and mandate interoperability standards between IP networks which would be run by the Access Providers including the new proposed ISP category, and the traditional TDM networks while permitting Internet Telephony to PSTN/PLMN within the country. The IP based networks have to convert to TDM before the interconnection interface to effectively interconnect with the TDM networks. The technologies for conversion of IP to TDM format are readily available and there is a need to adopt a technology agnostic view. The standardization gap can be reduced only when the TDM networks mature to NGN technology.

This approach was adopted by Singapore in the “Infocomm Development Authority of Singapore Policy Framework for IP Telephony and Electronic Numbering in Singapore” dated 14 June 2005:

“14. IDA recognises that IP Telephony is a new and evolving technology, therefore, consistent with IDA’s policy objectives and approach, IDA will not dictate the specific interconnection configurations that must be adopted at this stage. IP Telephony service providers are free to commercially negotiate and pursue the most appropriate interconnection arrangements with the Dominant Licensee and/or other service providers.”

Similarly, even in USA no standards have been defined to regulate and/or mandate interoperability between the IP networks and traditional TDM networks.

4.11 Is there a need to mandate QoS to ISPs providing Internet telephony to PSTN/PLMN within country? Please give your suggestions with justifications. (para 3.17)

We believe at this stage there is no need to mandate new QoS parameters to ISPs who would be providing Internet Telephony to PSTN/PLMN within the country. Globally also, wherever Internet Telephony services have been launched, initially they have been subjected to a very light regulation regime, especially for QoS and a similar approach can be followed for India. Parameters such as availability, service uptimes, MTTR, satisfaction, etc should be as per the Broadband QoS.