

**Comments of AT&T India on the Consultation Paper
on Issues related to Internet Telephony,
Telecom Regulatory Authority of India,
Consultation Paper No. 11/2008, May 2008**

Part I: Introduction and Summary

1.1 AT&T Global Network Services India Private Limited (“AT&T India”) respectfully submits these comments on the Consultation Paper on Internet Telephony, dated May 12, 2008 (“Consultation Paper”). AT&T India is a joint venture, owned 74 percent by AT&T Inc. (“AT&T”), and 26 percent by Mahindra Telecommunications Investments, and is licensed to provide National Long Distance (NLD), International Long Distance (ILD) and Internet Service Provider (ISP) services in India. The company began providing ILD and NLD services in April 2007.

1.2 AT&T, through its affiliates, is a leading provider of wireless and broadband services in the U.S., and globally operates one of the world’s most advanced backbone networks carrying more than 13.4 petabytes of data traffic on an average business day to nearly every continent and country. With operations throughout the U.S. and in over 60 other countries, AT&T has extensive experience as an incumbent and a new entrant, as a fixed line operator and a wireless operator, in the dynamic areas of converged technologies and services.

1.3 AT&T India is pleased to comment on the issues listed in the Consultation Paper concerning the authorization of Internet Service Providers (ISPs) to provide Internet Telephony calling services to the public switched telephone network (PSTN) and the public mobile network (PLMN) in India. As the Chairman of the TRAI states in the Preface to the Consultation Paper, “Technologies that use the Internet to deliver voice communications have the potential to reduce costs, support innovation, and improve access to communications services within developing countries and around the world resulting in reduced digital divide.”¹ Internet Telephony provides a viable and cost-effective alternative to circuit switched phone service that not only offers significant benefits in terms of lower costs for both residential and business users but also can contribute in critical ways to the Indian economy if allowed to flourish under open competition.

1.4 AT&T India accordingly supports the removal of present restrictions on the provision of Internet Telephony Services to (and from) the PSTN and PLMN by ISPs within India. Currently, only Unified Access Service Providers (UASPs) and Cellular Mobile Service Providers (CMSPs) are permitted to provide these services. Allowing ISPs to offer Internet Telephony Services to (and from) the PSTN and PLMN in parity with UASPs and CMSPs would introduce additional competition that would encourage lower prices and expanded access opportunities and also would allow important new services. The converged voice, data and video capabilities for Internet

¹ Consultation Paper at page 2.

Telephony, when run efficiently over an IP-enabled platform, can create unprecedented efficiencies for call center operations, remote teleworker applications, and video or IP conferencing. This will support the Indian economy by ensuring it remains a competitive location for telecom-dependent industries to operate, and by promoting the manufacture of and investment in Internet Telephony equipment and software. By contrast, the continuation of existing barriers to Internet Telephony in India will impede both economic growth and consumer benefits. AT&T hears frequently from its multinational business customers that they find the barriers to use of Internet Telephony in India very unusual and complex, and an impediment to conducting business, in comparison to most other countries where the business customer has sites.

1.5 The TRAI also should encourage service provider innovation and implementation of these advanced applications by regulating Internet Telephony with a light-handed approach. Because Internet Telephony can offer far more advanced and different service attributes than traditional voice services, the “technology neutrality” principle does not require application of the same regulations to these different services. Internet Telephony is an advanced communications application that can converge voice communications seamlessly with additional data or video applications and devices. For business customers, Internet Telephony can be a seamless application on their wide area IP networks. Most contemporary forms of Internet Telephony, and in particular those provided over broadband connections, offer far more than the service attributes of traditional voice services, including access-independent characteristics and many integrated computer application features. Current examples include advanced call forwarding features that allow sequential or simultaneous forwarding to multiple alternative numbers; “do not disturb” functions that allow the user to set times to restrict incoming calls while also permitting an override for urgent incoming calls; voice mail that can be accessed, saved or forwarded by computer as an electronic file; and advanced call management features such as personalized call logs, phone books, and click to dial functions. Equally important, these benefits are multiplying rapidly, as Internet Telephony services are quickly evolving as full-blown “computer” applications, limited only by the talents of applications developers.

1.6 Although it may have been the case in past years that Internet Telephony could properly be characterized as just “cheap voice,” that is not the case now with current-generation Internet Telephony services delivered over broadband access. When “voice” becomes one of many IP data applications available to the end-user, the voice/data dichotomy erodes. Moreover, with IP, the end user has the ability to use the communications content with a variety of devices unthinkable in a circuit switched environment. Beyond traditional phone service, Internet Telephony promises voice convergence with other data applications and devices such as:

- Presence (like Instant Messenger)
- One Number/ “Follow Me” services
- IP call centers
- Universal messaging
- Virtual Meetings/Collaboration (like NetMeeting)
- Real time language translation
- IP Centrex

- Multi-Point Video Conferencing
- Desktop Multimedia
- Push to talk cellular
- Voice chat
- WiFi PDA mobile phone

1.7 Given the revolutionary ability of these new services to bring different features to end users that are impossible with circuit-switched voice, the TRAI should recognize that IP Telephony and traditional voice services are not the same, and accordingly that the principle of “technological neutrality” must not by default mean that due to certain common “voice” features among traditional telecommunications services and Internet Telephony, that the same precise regulations should apply. Indeed, because voice may be but one application in a converged Internet Telephony offering, comparing circuit-switched voice and Internet Telephony is like comparing apples to fruit, not apples to apples. Internet Telephony introduces a fundamentally different technology as well as different service attributes, with different capabilities and limitations and raising different policy considerations.

1.8 Accordingly, the principle of technological neutrality should not require application of traditional regulation to Internet Telephony. AT&T India urges the TRAI to consider the right balance between encouraging the development of Internet Telephony services, and ensuring that customers are properly informed and protected. The TRAI accordingly should recognize the different attributes of these services through application of light-handed regulation that maximizes reliance on market forces.

1.9 The need for such light-handed regulation is particularly evident for Internet Telephony services provided to business customers, who raise different economic and safety policy considerations from individual consumers. As described above, the capabilities of these IP-based services can create unprecedented efficiencies for business in India by converging voice, data and video applications to create new services to assist call center operations, remote teleworker applications, and video or IP conferencing. At the same time, Internet Telephony services to business customers do not require traditional levels of consumer protection and emergency service access. Provided there is adequate disclosure of the capabilities and limitations of these services, business customers are likely to make informed decisions concerning their purchase and use of Internet Telephony.

1.10 AT&T India therefore encourages the TRAI to encourage the deployment of Internet Telephony services to business customers, and the widespread benefits to the Indian economy likely to result from such deployment, by forbearing from the application of traditional public voice regulation to these services with respect to requirements relating to emergency service access and service quality. Thus, in the event that the TRAI adopts mandatory requirements concerning emergency service access and service quality for Internet Telephony services, Internet Telephony services to business customers should be placed in a separate service category and exempted from these requirements. To encourage vibrant competition that will best encourage development of innovative new services for business users, all Internet

Telephony providers, including ISPs, UASPs and CMSPs, should be eligible to provide services in this category.

In Summary:

1. Remove the restriction on ISPs to terminate IP voice calls on the PSTN or PLMN within India.
2. Apply a sustainable and pro-competitive numbering regime, conforming to general E.164 numbering plans, and any future numbering regime that the national numbering plan may apply.
3. Enforce equivalent law enforcement assistance requirements that are part of the current licensing regime
4. Emergency services not to be mandated and be left to be decided by the ISPs, with the expectation of adequate consumer notification of capabilities and limitations.
5. QoS should not be mandated and should be left for ISPs to use as a means of addressing the market segment needs that they will target.
6. Regulation should not prescribe any end-user or service-provider technology or device-type. This should be left to the determination of users and market forces.

Part II: Comments on the Issues for Consultation

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)

Comments on Issue No. 4.1

AT&T India believes that ISPs should be permitted to provide Internet Telephony Services to (and from) the PSTN and PLMN within India without restriction. As described in Section I above, the removal of existing barriers to the provision of these services by ISPs would introduce new competition that would benefit consumer and business users by reducing prices and encouraging the provision of new and innovative services using the converged voice, data and video capabilities of IP-enabled platforms. These new services will provide extensive consumer benefits, increase the efficiency of businesses in India and expand the growth of the Indian economy. Allowing ISPs to provide the same Internet Telephony Services to (and from) the PSTN and PLMN within India that UASPs and CMSPs are authorized to provide will increase market incentives for all providers to offer these services as widely as possible.

To remove the existing barriers, the TRAI not only should remove the restrictions on Internet Telephony included in ISP licenses but also should establish regulations allowing ISPs to provide these services under regulations that promote

competition with other voice service providers. In particular, as described below, ISPs require access to both geographic and non-geographic number allocations in standard E.164 format, and the availability of flexible, market-based interconnection arrangements to terminate and receive calls via the PSTN and PLMN.

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)*

Comments on Issue No. 4.2

AT&T India does not agree that allowing ISPs to provide the Internet Telephony services to (and from) the PSTN and PLMN within India will provide any unfair competitive advantage to those providers. To the contrary, AT&T India believes that the present restrictions on the provision of Internet Telephony services by ISPs significantly disadvantage these providers and stifles the overall potential of the Indian telecommunications market – particularly in competing to serve many business customers who increasingly seek providers that can offer services with converged voice and data capabilities. The removal of these restrictions would merely allow ISPs to provide the Internet Telephony services that UASPs and CMSPs are authorized to provide today, which would increase competition and the resulting benefits of competitive markets for these services to consumer and business users in India.

AT&T India also notes that any concerns regarding the higher annual license fee applied to UASPs and CMSPs providing Internet Telephony in Category A and Category B circles of operation could be addressed by setting a standard license fee based on revenue share of 6 percent adjusted gross revenue for all Internet Telephony services, including those provided by UASPs and CMSPs. Similarly, all Internet Telephony providers, including UASPs and CMSPs, should provide Internet Telephony services under competitively neutral regulations relating to interconnection, numbering, emergency service access, service quality and law enforcement interception.

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)*

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)*

Comments on Issue No. 4.3 and 4.4

We do not have any comment to these questions.

- 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)*
- 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)*
- 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)*

Comments on Issues Nos. 4.5, 4.6 & 4.7

Access to E.164 numbering – both geographic and non-geographic – is another critical issue to the growth of Internet Telephony in India. Both types of E.164 numbers should be available for allocation to all Internet Telephony providers, including ISPs, UASPs and CMSPs. By preserving a reasonable ability to obtain geographic numbers, and by also establishing a non-geographic number range reserved to encourage deployment of a numbering resource specifically for this service, the TRAI will best allow Internet Telephony providers a long-term ability to innovate and increase customer demand.

The availability of geographic numbers is likely to encourage wider usage of Internet Telephony, which in turn will promote efficient, innovative and affordable services. For end users who are more comfortable with a recognisable number range, a geographic number may be desirable, and excessive restrictions on which operators can obtain such numbers would raise an unnecessary barrier to competitive entry. A number of initiatives should be considered to minimize any adverse impacts on geographic numbering resources. For example, the TRAI could set aside initial number blocks for Internet Telephony services in each geographic area with allocation at possibly 1,000.² This approach is competitively and geographically neutral, and is a proportionate response to concerns with number exhaustion. Additional blocks for Internet Telephony would need to be made available to meet demand, even if that triggers code changes in some areas. If demand for new geographic numbers overheats, then at that point the TRAI could consider “conservation” measures, such as allocating numbers for all services in smaller blocks. This would alleviate exhaustion concerns, but might introduce a technical

² In the United States, allocation of numbers in blocks of 1,000 has been generally implemented. See, e.g., *FCC Releases Telephone Numbering Resource Utilization Report, Over 61 Million Numbers Saved Through Thousand-Block Pooling*, FCC News, (rel. Dec. 11, 2003) (http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/utilizationjun2003.pdf).

complication for traditional services and should not be introduced until demand for Internet Telephony and impact on the numbering plan is more clear.

New non-geographic number ranges for Internet Telephony services should also be made available, provided that Internet Telephony services are not constrained only to a non-geographic number range. Non-geographic numbers may create efficiencies that improve the ability of new Internet Telephony providers to obtain and use number resources. For Internet Telephony applications that rely significantly on the service for mobility or long distance and international use, a non-geographic number may be desirable given the independence of the number from concepts of distance or fixed location. The TRAI should establish the non-geographic number range for Internet Telephony with low entry barriers for obtaining number blocks, as this will foster Internet Telephony deployment. The TRAI should, however, bear in mind that, as more and more voice services migrate to IP, artificial segregation of Internet Telephony services behind a non-geographic number range is unlikely to be sustainable in the long term.

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)*

Comments on Issue No. 4.8

As described above, AT&T considers that emergency number dialing facilities should not be mandated for Internet Telephony services to business customers, since those customers are unlikely to require traditional levels of emergency service access for these services. Business customers are likely to make informed decisions concerning their purchase and use of Internet Telephony, provided there is adequate disclosure of the capabilities and limitations of these services. In particular, where emergency service access is not available – because, for example, a nomadic use capability precludes the transmission of location information – service providers should be required to make users aware of this. In the UK, for example, VoIP services used nomadically are exempt from emergency service access requirements, but providers are required to ensure that consumers are adequately informed that they may not use the service to make emergency calls when away from their normal installation address. In the event that the TRAI does wish to go further, it should adopt only minimum standards for Internet Telephony services to business customers that are technologically feasible and necessary to ensure access to emergency services, without foreclosing future developments.

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)*

Comments on Issue No. 4.9

AT&T India considers that requirements for compliance with interception and monitoring requirements should be as non-burdensome as possible to encourage market entry and competition, while consistent with the important national security and law enforcement requirements of the Indian authorities.

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)

Comments on Issue No. 4.10

AT&T India considers that it is not necessary for the TRAI to promulgate regulatory requirements for interoperability between IP networks and traditional TDM networks. The TRAI should instead rely on voluntary compliance with ITU-T recommendations and other relevant standards and protocols. As described above, Internet telephony and other IP services are communications applications capable of converging voice, data and video with additional data or video applications and devices. Mandatory interoperability standards may impede continued technological development and innovation in these complex and dynamic services and limit their potential benefits. The TRAI accordingly should monitor industry efforts to ensure interoperability but should consider mandatory standards only in the event that existing market incentives for voluntary compliance prove inadequate in the future.

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)

Comments on Issue No. 4.11

The TRAI also should avoid any mandated service quality levels for Internet Telephony services. These services are different services from traditional PSTN/PLMN voice services using a fundamentally different technology as well as different service attributes, with different capabilities and limitations and raising different policy considerations. As the Consultation Paper notes, the quality of voice calls over IP networks or the Internet is frequently different from the quality of traditional voice services for a range of reasons.³ And even low quality Internet Telephony may offer sufficient cost advantages over traditional voice services for many users to be willing to make this price-quality trade-off. Mandated service quality levels could also limit the development and usage in India of innovative services converging voice with other data applications and devices. A light-handed regulatory approach to Quality of Service will help promote innovation in a competitive market.

AT&T India therefore believes that service quality is an area in which the TRAI should apply the light-handed regulation followed by many regulators with respect to IP telephony services and should avoid imposing strict requirements.

³ Consultation Paper at page 18, 50.

Instead, the TRAI should require Internet Telephony providers to notify users that these services may not provide the same voice quality as traditional services and thus allow users to make an informed decision concerning usage. In particular, the TRAI should not apply service quality requirements to Internet Telephony services to business customers, and should at most require operators to provide these customers with adequate notification on this subject.

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AT&T India would be pleased to provide any additional information that would be helpful to the Authority.

Respectfully submitted,

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Principal Regulatory Officer

June 16, 2008