Bharti's Response to the TRAI Consultation Paper No. 11/2008 on Issues related to 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)*

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)*

Bharti's Response:-

1. It is first submitted that existing UASLs / CMSPs are fully entitled /authorized under their respective licenses to offer full-fledged Internet telephony services. However, as the Authority has rightly noted in Paras 3.2, 3.3 and 3.4 of its Consultation Paper, the UASL/CMTS operators have not been able to offer the service on account of lack of clarity on the definition and scope of the service, issues related to the numbering plan, interconnection with other access providers, etc.

   We believe that once these issues are clarified, then the existing access providers are best placed and also entitled under their licenses to offer internet technology services to their consumers.

2. The existing **UASL/CMTS operators have obtained their licenses after paying requisite entry fees and have invested thousand of crores to** create a state of the art nationwide infrastructure. Further, they are also subject to high level of duties and levies, viz. license fee, spectrum charges, service tax, etc and also have to comply with stringent terms and conditions regarding QoS, security monitoring conditions, rollout obligations, etc.

   We welcome any step to enhance the competition in the market once the level playing field is maintained in all respect. Thus, we believes that if **Internet service providers are to be permitted Internet Telephony services to PSTN/PLMN within India, then, in order to maintain the level playing field,** it is **imperative that they should be required to migrate to UASL license, as per existing regime** and should be subject to the same entry fee, license fee revenue share and other terms and conditions as are applicable to existing UASL/CMTS licensees.

3. It is further submitted that Category "C" ISPs who have city based licenses and are desirous of offering internet telephony services should be mandated to migrate to circle level operations and acquire a UASL/CMTS license.

4. Similarly, apart from UASL / CMTS Licence, Category "A" ISPs should be mandated to also acquire an NLD/ILD license so as to be allowed to carry inter circle and International Long Distance Traffic respectively.

5. **Further, to prevent arbitrage and to curb grey market** activities, the **license fee, etc. should be harmonized across all telecom segments**.

6. **Furthermore, the vigilance and monitoring efforts need to be escalated** by the Licensing authority **to block grey market services** such as Skype, Vonage, Google, etc, **which not only bypass the laws and regulations** of the country, but **also pose a threat to national security.**

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)*

Bharti's Response:-

1. It is reiterated that ISPs desirous of interconnecting with PSTN/PLMN network to offer internet telephony services should first be required to migrate to a UAS license, as per existing regime and be subject to the same terms and conditions as UAS/CMTS licensees.

2. The existing interconnection regime has defined the principle of interconnect seeker and interconnect provider and thus, the same principle should also apply to those ISP as well, who seek the connectivity from existing UASL / CMTS operators after acquiring the UAS Licence.

3. Also, such a service provider should be governed by the prevailing IUC regime and should be required to adhere to all parameters laid down thereunder, including Point of interconnection, IUC charges, etc.

4. As regards the suggestion of the Authority that ISPs may be allowed to carry inter-circle traffic and hand over the calls to the appropriate entity in the respective service areas (Para 6.2.4), it is reiterated that this can be permitted only if the concerned ISP also takes an NLD license. This is essential to ensure level playing field.

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)*

Bharti's Response:-

1. Numbering scheme is very important to identify and make a call to Internet telephony subscriber.

2. Numbering is a scarce and limited resource and numbering schemes should be finalized keeping in mind the future growth and evolution of the sector so as to ensure that numbering plan is not subject to frequent revisions and also that non-availability of numbering space does not create an obstacle to the fast growth of telecom services in the country.

3. The Authority has noted that the E.164 numbering scheme is simple and it is desirable that a solution be found within this scheme to accommodate number blocks to be allocated for Internet Telephony.

4. The Authority has rightly recognized that the rapid growth of wireless subscribers is putting increasing pressure on availability of numbering resources in E.164 format. For the future growth of wireless to continue unabated, it is our view that besides the entire Level 9, Levels 7 and 8 should be allocated to PLMN.

5. We believe that if Internet Telephony is to be allocated a separate number block, it may be carved out within the Levels 5 and 6. At present, Levels '**5**' **&** '**6**' are being shared by 3 operators for basic services. Since, the number of subscribers in these two levels is only about 1 million; it is evident that there is ample excess capacity in these levels, which can easily be utilized for internet telephony services. The best way to utilize these levels efficiently would be to transfer the subscribers of any one of the levels (level with fewer subscribers) to the other level and allocate the vacated level for Internet telephony services. This will also make the Internet Telephony services distinctly identifiable.

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)*

Bharti's Response:-

We strongly believe that free access to essential emergency services (like Fire, Ambulance, Police, Hospital, Public Disaster Management etc.) is essential in consumer interest. Hence service providers should be mandatorily required to provide free access to emergency numbers on Internet Telephony services.

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)*

Bharti's Response:-

1. All service providers offering internet telephony services should be required to install the appropriate interception equipment to facilitate lawful interception and monitoring. They should also follow the security guidelines as prescribed in the UASL.

2. The documentation and verification for the identity of the internet telephony customer should also be similar as being done for the present customer of the UASL/ CMTS.

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)***

Bharti's Response:-

1. It would need to be ensured that internationally accepted standards are followed to ensure interoperability between IP networks and traditional TDM networks while permitting Internet telephony.

2. We support the standardization for IP-based services in line with ITU-T Recommendation H.323, which offers high degree of inter-operability; and protocol standards, as stipulated by international standardization agencies, like ITU, ETSI, IETF, etc.

3. Standardization is considered necessary for ensuring seamless inter-operability of networks and for ensuring end - to - end QoS, specially related to traditional TDM networks while permitting Internet Telephony to PSTN / PLMN within the country through ISP's / other licensees.

4. We believe that the end-to-end QoS standards for all networks, based on IP - packet switching in the country would need to be clearly laid down and consistent in respect of real time services (like voice). The definite prescribed QoS standards / norms across the networks would facilitate smooth and efficient inter-connections, seamless inter operability, end-to-end and growth of world class networks in the country, without impairing the international trends towards Convergence and NGN.

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)*

Bharti's Response:-

1. We believe that it is important to lay down QOS regulation / standards for Internet Telephony and the same should not be left to the choice of the service provider.

2. This view was also taken by the Authority in 2002 when it laid down QoS standards for VOIP based International Long Distance Service in its Regulation on Quality of Service on November 15, 2002. In its said Regulation, the Authority rightly noted that the objective of laying down Quality of Service benchmarks is to:
    - Ensure customer satisfaction by laying down standards of network performance, which the service provider is required to achieve by proper engineering of his network.
    - Measure the Quality of Service from time to time and to compare that with the specified norms so as to monitor the level of performance, provided by various service providers' networks.
    - Protect the interests of subscribers in regard to Quality of Service, particularly a minimum level of voice quality, which he expects, when he makes a call and pays for it.

3. The QOS standards were earlier prescribed by the Authority for VOIP based International Long Distance Service 2004, keeping in view the MOS (Mean Opinion Score) system as also of the E-Model / R-value, which is the objective measure of speech quality denoted as the resultant value of the 'Transmission Rating Factor' as defined in ITU-T Recommendations G.107, 'E-Model, Computation Model for Use in Transmission Planning, August 2001' and G.108, 'Application of the E-Model, A Planning Guide, September 1999'.

4. The Authority had also laid down benchmarks for parameters for latency, jitter, packet loss and R-factor, which are relevant and important for assessing QoS for real time services like voice on IP based networks. Normally, R-factor of 80 plus is being considered as commencement of subscriber satisfaction and is equivalent to MOS 4 & above for voice quality, i.e, a toll quality of 4 and higher.

5. We believe that in the case of internet telephony for real time services, like voice ≠ (including to PSTN/PLMN too) , the end-to-end QoS standards would need to be prescribed. We support Regulation and ITU based standards on Quality of Service (QoS) for IP-based voice services [ITU / G – 107]. In this regard, it is submitted that the Authority may likely to follow the same lines for QoS on Internet Telephony as have already been prescribed and are being applied to QoS for International Long Distance Services which had certain defined parameters, like end – to – end delay, jitter, packet loss and R-value.

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