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**Subject: ACTO's response to TRAI Consultation Paper dated 22<sup>nd</sup> June 2016 on Internet Telephony (VoIP)**

Dear Sir,

Association of Competitive Telecom Operators (ACTO) is pleased to submit its response to TRAI Consultation Paper on Internet Telephony (VoIP).

TRAI has already recommended removing the current restrictions on internet telephony for ISPs way back in August 2008.

Link:<http://www.trai.gov.in/WriteReadData/Recommendation/Documents/recom18aug08.pdf>

Specifically Annexure V and VI of the recommendations have proposed amendments under NLD and Internet license in this regard. The said recommendations of TRAI were not accepted by DoT on the key premise of non level playing field between the Access operators and the ISP operators. However with the imposition of 8% of LF on all ISP services the arbitrage is no more in existence. The issue w.r.t. the difference of entry fee between Access and ISP operators had also been rejected by the Authority in its reply to DoT dated 31 March 2009 wherein the TRAI had stated that **“Any direct comparison of access service providers and ISPs, due to vast difference in privileges, services, and resources given to them under their respective licenses does not seem to be desirable”**. (Emphasis Supplied)

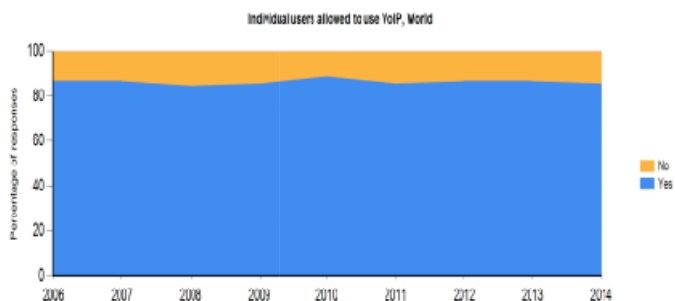
We therefore strongly suggest that TRAI should continue to maintain its earlier stand as stated under its recommendations of August '2008 recommendations and should favourably recommend opening of unrestricted internet telephony without any additional entry fee. In last over 8 years, Indian telecom sector has seen proliferation of players (app providers) which have literally made voice and messaging free (apart from the cost of underlying broadband). TRAI should take cognizance of the march of technology and the current trends and liberalise the current policy framework by convergence of networks and traffic.

Given the proliferation of free apps which enable voice calling and messaging anywhere, the question of additional cost (entry fee) may not be relevant anymore for an operator. As the competition is with the entity which do not operate under any license / regulation, therefore in the larger interest of increasing internet / broadband in our country not only the current cost structures (license fee and taxes) of existing operators be reviewed and incentivized. Also the current restrictions on licensed operators including the one on VoIP and IP to PSTN interconnection be removed. The removal of IP- PSTN interconnection for ISPs will not only boost the current penetration level of broadband in the country but will also bolster the Digital India initiative of the government.

A comparison of the VoIP regulations by ITU in its report i.e. **ITU World Telecommunication/ICT Regulatory Database- 2015** attached as Annexure- II shows most of the countries across the globe promote use and deployment of VoIP through an enabling regulatory framework. As per ITU estimates in the 25 countries in the Asia Pacific region allow VoIP to individual users. The regional trends indicate that the regulatory environment in the APAC region is enabling the VoIP use and deployment.

Further any restrictions in the regulatory environment should be suitably reviewed from time to time to align with the market realities.

Similarly, the current regulatory restrictions on IP-PSTN interconnection needs to be review in order to realize the dream of becoming a digital empowered nation that creates opportunities for investments and innovation. The removal of the barriers on the convergence of IP-PSTN would give India a competitive advantage over other countries such as Philippines vying for foreign investment and this is a welcome signal to global investors who may be looking at India as an attractive investment destination.



Source: ITU Telecommunication/ICT Regulatory Database ITU ICT-Eye:  
<http://www.itu.int/icteye>



Thus the present regulatory framework does not recognize the digital evolution and denies the fruits of technological advancements to reach to common masses. The regulatory environment should be dynamic, enabling, and efficient and encourage competition. Hence regulatory framework for Internet telephony has to be considered in view of digital evolution, convergence and other similar developments taking place across the globe.

We hope that our comments (enclosed as Annexure – I) will merit consideration of the Hon'ble Authority.

The response represents the consensus view of almost entire membership of ACTO except Vodafone.

Thanking you,  
Respectfully submitted

Yours sincerely,  
for Association of Competitive Telecom Operators

**Tapan K. Patra**  
**Director**

Encl: As above

## Annexure-I

### ACTO's response on TRAI CP on Internet Telephony (VoIP)

Association of Competitive Telecom Operators (ACTO) would like to thank the Hon'ble Authority for bringing this important subject for consultation again. TRAI had already provided favourable recommendations permitting unrestricted internet telephony way back in August 2008.

The said recommendations of TRAI were not accepted by DoT on the key premise of non level playing field between the Access operators and the ISP operators. However with the imposition of 8% of LF on all ISP services the arbitrage is no more in existence. The issue wrt the difference of entry fee between Access and ISP operators had also been rejected by the Authority in its reply to DoT dated 31 March 2009 wherein the TRAI had stated that **“Any direct comparison of access service providers and ISPs, due to vast difference in privileges, services, and resources given to them under their respective licenses does not seem to be desirable”** .Given the proliferation of free apps which enable voice calling and messaging anywhere, the question of additional cost (entry fee) may not be relevant anymore for an operator, as the competition is with the entity which do not operate under any license / regulation.

The next wave of telecom growth and digital revolution will ride essentially on data. Policies which have helped steered the growth of voice telephony till date may not necessarily be apt and suitable for the growth of data services where technological advancements and innovation have a key role to play. Therefore there is a legitimate need for policies to recognize and steer the advent and potential of emerging technologies which will significantly help foster proliferation of data services, permit convergence of voice, data and video, remove the current restrictions placed between networks (IP and PSTN). Such policy measures will not only open up the data sector, but will also help place India at the helm of technology advancement globally. Growth in broadband and data services cannot proliferate unless the current restrictions around VoIP/IP-PSTN interconnection are not removed.. Removing these restrictions will certainly help increase the broadband / data connectivity in unserved areas.

TRAI has already recommended removing the current restrictions on internet telephony for ISPs way back in August 2008

Link:<http://www.trai.gov.in/WriteReadData/Recommendation/Documents/recom18aug08.pdf>

Specifically Annexure V and VI of the recommendations have proposed amendments under NLD and Internet license in this regard. However, somehow the recommendations were not accepted by the competent authority. **The release of this paper underscores the significance and criticality of further liberalizing VoIP / Internet Telephony in India.**

The National Telecom Policy, 2012 (NTP-2012) has also recognized the need to move towards convergence of voice, data and video to the digital form as below:

*“6. Telecommunications is no longer limited to voice. The evolution from analog to digital technology has facilitated the conversion of voice, data and video to the digital form. Increasingly, these are now being rendered through single networks bringing about a convergence in networks, services and also devices. Hence, **it is now imperative to move towards convergence between telecom, broadcast and IT services, networks, platforms, technologies and overcome the existing segregation of licensing, registration and regulatory mechanisms in these areas to enhance affordability, increase access, delivery of multiple services and reduce cost. It will be a key enabler of equitable and inclusive growth.**” (Emphasis Supplied)*

The NTP-2012 has further identified specific strategies in the area of Licensing, Convergence and Value Added Services as below: Therefore this is the right time to frame policies and regulations in such a manner which helps achieve the stated objectives of NTP 2012.

**3.1. To orient, review and harmonise the legal, regulatory and licensing framework in a time bound manner to enable seamless delivery of converged services in a technology and service neutral environment. Convergence would cover:**

**3.1.1. Convergence of services i.e. convergence of voice, data, video, Internet telephony (VoIP), value added services and broadcasting services.**

**3.1.2. Convergence of networks i.e. convergence of access network, carriage network (NLD/ILD) and broadcast network.**

**3.1.3. Convergence of devices i.e. telephone, Personal Computer, Television, Radio, set top boxes and other connected devices.**

**3.15. To enable and enforce the VOIP facility to enhance consumer affordability.**  
(Emphasis Supplied)

The vision of the prestigious Digital India programme of our Government is centered on 3 key areas:

- Digital infrastructure as a utility to every citizen
- Governance & Services on Demand
- Digital empowerment of Citizens

The policy / regulations have an important role in realizing the above vision. One of the ways this can be realized is by migrating to a converged digital infrastructure which does not distinguish between networks and traffic. It allows seamless flow of traffic and becomes a powerful tool in the hands of every citizen for their digital empowerment.

The policy / regulatory framework should proactively ensure and remove any possible bottleneck which may come in the way of a seamless digital infrastructure which is there to empower citizens and act as a utility tool. No matter what network / device / service the citizen use, the digital infrastructure should embrace the same.

If citizens have to get into the quagmire of issues relating to which hand set to use, which network to use, what is allowed, what is not allowed, then it will be difficult for them to make optimum use of the infrastructure. Therefore in order to truly realize the above stated vision, it is important that policies and regulations should be technology oriented, future proof, and more importantly permit convergence of all types of traffic for the larger benefit of the consumer.

TRAI should continue to recommend removal of the current restrictions on internet service provider to terminate calls on public network in India. TRAI should permit interconnection by internet service providers with access service providers as well as carriers. The terms of interconnection should be based on mutual agreement between parties. While recommending such steps, TRAI should also consider framing a sustainable numbering regime which conforms to E.164 numbering plans as well as future requirements. The NNP 2003 may be suitable amended as appropriate. Lastly there should not be any regulation around quality of service.

In the context of present consultation, we would like to present our views on few important issues followed by question wise responses.

#### **1. Regulatory Imbalance:**

Regulatory imbalance exists not only between TSPs and OTTs but also between TSPs. The Access Service Providers have been permitted to offer unrestricted internet telephony since January 2006 as part of enhancement of the scope of their license, while similar amendments were not made on the ISP license. However we understand such services have not been offered till date except for few apps for messaging purposes. . As a result the opportunity has been largely captured by application providers (OTTs) that is why we have witnessed a phenomenal growth in the number of customers using such applications for their voice, messaging requirements. This has raised questions around security and loss of revenue to the exchequer. However, the other licensed telecom service providers (not

access providers) have either been permitted restricted internet telephony or have not been permitted any interconnection between IP and PSTN.

## **2. Seamless interconnection is need of the hour:**

With the technological development, seamless interconnection be it Circuit-IP, unrestricted internet telephony, IP-IP or CUG –PSTN etc are essential to provide innovative and affordable services to the customers. Regulatory restriction should not be the reason for impeding the growth of the sector and deprive the technological benefit to the end users/customers.

We believe that the current imbalance between TSPs and OTTs can largely get corrected if the policy / regulatory framework rightfully recognizes and embrace convergence of networks, services and devices in totality. In most of the economies, the VoIP regime is liberal, which includes no prohibition on interconnection between IP and PSTN irrespective of the source. The consultation on VoIP cannot be completed unless all the aspects including the above are not deliberated in detail. Time has come that we deliberate the above in the larger interest of the consumers who should get benefits of technology at an affordable price. If there are any perceived concerns around security or revenue by removing such restrictions, those need to be deliberated and addressed and not continue to be prohibited. In fact by Telecom operators offering these services instead of OTTs, the risk is only going to reduce and not increase.

TRAI had earlier recommended vide it's recommendation August, 2008 (Clause no. 4.1.1) to permit internet telephony calls to PSTN/PLMN and vice versa within country. The need of the hour is to have a discussion around all facets around VoIP including, IP-PSTN interconnection and fully liberalizing VoIP. This if permitted, will surely help remove the current imbalance and concern on the growth of OTT's who are offering applications by riding on TSPs infrastructure.

At present, the most widely deployed business model is that of a VoIP service provider that offers free telephony services to its own subscribers and charges the customers for interconnection to the PSTN (to recover costs of termination; . A connection between subscribers of two different VoIP operators generally goes through PSTN. By denying PSTN connectivity and higher termination charges to ISPs/VoIP operators will lead to the situation of peering arrangement between VoIP operators that will effectively bypassed the PSTN operator in order to reduce the costs.

### 3. Entry Fees:

Internet Telephony per se as a service is permitted under the existing internet license. However its delivery to customer is restricted to the stated scenarios only. Recommending removal of such restriction will not be a new service. Instead this is just a flexibility to an already existing service. Any attempt to impose entry fees to an existing service under an existing license is not justified. It also impacts the business viability of operators. DoT in January 2006, had permitted provision of internet services as well as unrestricted internet telephony under the access license. **This was done without imposing any additional entry fee on access service providers.**

Contrary to what was done in 2006, the current consultation is only about removing the current restriction to an existing service and not adding new service. In view of the above and from simple comparison perspective, there should not be any entry fee charged. If there are any issues with the cost structures of access service providers then those need to be reviewed separately. However the same should not have any implications for other operators. Any dispensation provided to an operator for a service should be accorded same treatment to all operators.

Further, it is worthy to reiterate that the issue w.r.t. the difference of entry fee between Access and ISP operators was out rightly rejected by the Authority in its reply to DoT dated 31 March 2009 wherein the TRAI had stated that “Any direct comparison of access service providers and ISPs, due to vast difference in privileges, services, and resources given to them under their respective licenses does not seem to be desirable” an ISP license does not include allocation of any spectrum to ISPs as part of the license and therefore their entry fee is low. Therefore, on account of different basic aspect of two licenses, the entry fee cannot be compared. NO additional entry fees should be charged to ISPs to allow unrestricted internet telephony services.

### 4. Interconnection/Termination Charges:

The reduction in current termination rates is based on TRAI's own approach of cost based and work done principle. We may note that the work done and cost involved in IP termination is lower than TDM. Based on the same reduction in current IUC is must to flourish the convergence in technology. Gradual phase wise move to bill and keep scenario as applicable in wireline is the need of the hour.



As regards the interconnection cost is concerned it should be left to the mutual agreement with the operators concerned with the intervention of TRAI if incumbent does not give interconnection in stipulated period, In any event, the cost of Interconnect should not be higher than the ones paid by operators today.

#### **5. Numbering resources:**

VoIP services will co-exist with traditional public telephony for many years before the transition to all VoIP is completed. Keeping in mind the difficulty in dealing with IP addresses for making internet telephony calls and higher cost of devices to IP address calling, a separate numbering resource should be allocated for internet telephony services. Separate numbering have been allocated in many countries to VOIP services.

#### **6. Emergency call and positioning:**

The possibility to make emergency calls and to route the call to the nearest authority (fire department, police, hospitals, etc.) has been defined as a core element of Public Available Telephony Services in many countries. But with VoIP it is not possible to maintain the same positioning and routing information for emergency calls. However this requires use of VoIP services from fixed locations. But, in nomadic use fixed VoIP services cannot be connected to the emergency call. Technology to this facility with VoIP is still under development or trial stage and also requires improved local and centralized in country infrastructure.

As an alternative, given the wide spread growth of smartphones and other handheld devices, applications for emergency assistance which provide location information and type of assistance required are being trialed and should be available more universally in the future. Such applications could replace/complement voice based emergency calls systems.

Although it might be possible to provide this but at present it should not be mandated and keep for future possible consideration as some other alternatives are already available.

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 able 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 and business customers should be free to purchase the service. TRAI should consider adopting 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.

## **7. QoS:**

In managed VoIP services it is possible to provide measurable QoS. This is the case with incumbent operators who often carry PSTN calls as data over segments of their network, with VoIP on corporate virtual private networks (VPNs) and with peering of VoIP services. For unmanaged, 'best-effort' VoIP, QoS depends upon the bandwidth and server capacities available in the end-to-end network. The important thing is the transparency with regard to the quality of services provided. A best effort service provider has no means to guaranty QoS at the network level. It can offer easy nomadic use or favorable pricing to differentiate its services and attract consumers. However, it is important for the consumers to have knowledge about the different QoS provided.

Given the layered nature of IP networks, and the services and applications that operate over them, QoS for VoIP needs to reflect both the underlying network and the VoIP application. The ITU is setting international standards for performance objectives in IP networks with a reference architecture (Y.1542) that assigns critical service performance parameters to the various network elements to provide an end-to-end QoS regime for internationally-delivered services. It is up to national regulatory (and industry self-regulatory) bodies to convert the Y.1542 reference architecture and performance quotas into a national architecture with national network elements, in the form of industry guidelines. The network elements would need to include customers/end-users equipment, access networks and transit/backhaul networks. A testing and measurement regime could then be defined to permit monitoring and enforcement of the guidelines.

We believe that service quality is an area in which the TRAI should apply the light-handed regulation and should avoid imposing strict requirements. A light-handed regulatory approach to Quality of Service will help promote innovation in a competitive market. Mandated service quality levels could also limit the development and usage in India of innovative services converging voice with other data applications and devices. In particular, TRAI should not apply service quality requirements to Internet Telephony services to enterprise / business customers, and should at most require operators to provide these customers with adequate notification on this subject. The services to such customers are backed by strict SLAs. Before a service is provisioned, the bandwidth requirements / uptime

and other related aspects are ascertained and agreed in advance. any failure to meet SLAs lead to payment of penalties to customers. Therefore there is a need to segregate individual and enterprise customers. Mandatory QoS requirements should not be made applicable to enterprise/corporate customers.

#### **8. Security and consumer protection:**

In regular telephony services the security and consumer protection standards have been defined and are generally found adequate. With regard to VoIP services there is no one-to-one relation between the service and the physical infrastructure. VoIP is just another IP service conveyed in the IP networks and anyone with access to the network can tap the signal and actively damage the integrity of the message and the signal. To assure privacy the VoIP provider can implement end-to-end encryption, which is not 100% secure but can establish security levels comparable to those of regular telephony. The encryption will on the other hand prevent the authorities from lawfully tapping the VoIP signal. Different models for a solution to this can be found. But the most future proof solution will connect this type of security issue to IP connections generally, and VoIP will then be a treated as a sub-set of the general solution.

#### **Question wise response to the specific issues for the consultation:**

The following issues have been identified for the public consultation by TRAI and we would like to submit our responses in order:

**Question 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?**

#### **ACTO Response:**

ACTO's firmly believes that there should be not any additional entry fee, Performance Bank Guarantee (PBG) and Financial Bank Guarantee (FBG) as applicable for permitting unrestricted internet telephony.

Internet Telephony per se as a service is permitted under the existing internet license. However its delivery to customer is restricted to the stated scenarios only. Recommending removal of such restriction will not be a new service. Instead this is just a flexibility to an already existing service. Any attempt to impose entry fees to an existing service under an existing license is not justified. It also impacts the business viability of operators. DoT in January 2006, had permitted provision of internet services as well as unrestricted internet

telephony under the access license. This was done without imposing any additional entry fee on access service providers.

Contrary to what was done in 2006, the current consultation is only about removing the current restriction to an existing service and not adding new service. In view of the above and from simple comparison perspective, there should not be any entry fee charged. If there are any issues with the cost structures of access service providers then those need to be reviewed separately. However the same should not have any implications for other operators. Any dispensation provided to an operator for a service should be accorded same treatment to all operators.

The current internet license contain necessary provision on submission of bank guarantees both performance and financial. The performance bank guarantees are meant to secure roll out obligation as prescribed under the license. The roll out obligation is not linked to individual service as defined under the scope. Therefore there is no rationale for imposing additional performance bank guarantees once the stated roll out obligation is complete.

Additionally there is also no case for submission of additional financial bank guarantees as the license already contains necessary provision in this regard. The amount of which can be duly computed based on the license fee payments made.

**Question 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?**

**ACTO Response:**

POI for internet telephony need not to be treated same as in case of circuit switch network. ISPs should not be mandated to interconnect with all operators. As technology permits, ISP should be allowed to have direct or indirect interconnections with the operators. ISPs (seekers) have to bear the cost of the interconnection to the providers although it is for mutual benefit. Mobile Number Portability also needs to be considered as the cost will be high to interconnect with all the operators. The practice to have optional direct/indirect interconnection with operators is prevalent in various countries like Australia, Malaysia, Hongkong & Singapore.

This interconnection is implemented by using gateways and contractual agreements between VoIP providers and PSTN operators. Fair and non-discriminatory conditions for interconnection are a precondition for successful development of VoIP. If fair and non-discriminatory conditions for interconnection are not established in a timely fashion in the marketplace, regulators should intervene following traditional interconnection principles.

**Question 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 fixedline or mobile services of the TSP? Please provide full justification in support of your answer.**

**ACTO Response:**

It should not be treated as a full-fledged service as it lacks several features emergency number/services, customer location traceability, number portability and quality of service not at par with full fledged services. Internet telephony is popular due to its cost advantage vis-a-vis quality. Therefore, it is still too early to treat internet telephony as full fledged communication service.

TRAI should reexamine the removal of present restrictions on the provision of Internet Telephony Services to (and from) the public network within India. The continuation of existing limitations on the provision of Internet Telephony in India will impede both economic growth and consumer benefits.

**Question 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.**

**ACTO Response:**

The transit charge should be left to forbearance driven by market. The differential pricing model should be continued service providers may offer discount on the ceiling tariff as stated and laid down in TTO.

**Question 5. What should be the termination charge when call is terminating Internet telephony network?**

**ACTO's Response**

The fixed line termination charge is zero. The termination charge should be zero when call is termination on internet telephony network considering low cost service to be provided through internet telephony.

The reduction in current termination rates is based on TRAI's own approach of cost based and work done principle. We may note that the work done and cost involved in IP termination is lower than TDM. Based on the same reduction in current IUC is must to flourish the convergence in technology. Gradual phase wise move to bill and keep scenario as applicable in wireline is the need of the hour.

**Question 6.: What should be the termination charge for the calls originated from Internet Telephony Network and terminated into the wireline and wireless Network?**

**ACTO Response:**

The cost of termination should be nil or reduced from the current charge prescribed for voice calls since the quality of service/call is low and also to reduce the cost of voice of internet telephony calls.

**Question 7.How to ensure that users of International Internet Telephony calls pay applicable International termination charges?**

**ACTO Response:**

Currently there is no restriction on incoming international calls coming through VoIP source from abroad. These are terminated in country at the destination through the in country licensed operators . The current process of settlement which exists may continue.

**Question 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?**

**ACTO Response:**

The internet telephony is not a fixed line, it can be done anywhere and anytime by using public Wi-Fi, dongle etc so there should not be any restrictions on internet telephony.

**Question 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 leg abides by all the interconnection rules and regulations concerning NLDO and ILDO?**

**ACTO Response:**

No Response

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

**ACTO Response:**

VoIP services will co-exist with traditional public telephony for many years before the transition to all VoIP is completed. More than half the countries responding to an ITU survey said the use of fixed service (E.164) numbering is permitted.

Keeping in mind the difficulty in dealing with ip addresses for making internet telephony calls and higher cost of devices to ip address calling, a separate numbering resource should be allocated for internet telephony services, this is essential for the exchange to figure out

interconnection charges as well as to facilitate identification of locations, number portability in the near future.. Since Internet telephony supports CLI, it is desirable that Internet telephony service providers for the benefit of subscribers also provide calling line identification. This practice is being followed in Singapore and Honkong.

The relevant license clause of ISPs license of is also required to be amended suitably in order to allow E.164 based national numbering scheme for ISPs.

ISPs license Clause 2.2 (iv):

*"Addressing scheme for Internet Telephony shall only conform to IP addressing Scheme of Internet Assigned Numbers Authority (IANA) exclusive of National Numbering Scheme / plan applicable to subscribers of Basic / Cellular Telephone service. Translation of E.164 number / private number to IP address allotted to any device and vice versa, by the licensee to show compliance with IANA numbering scheme is not permitted."*

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

**ACTO Response:**

The number portability for internet telephony is not required at this stage. Since fixed line number portability has not be implemented so number portability for internet telephony can be done at a later stage.

**Question 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?**

**ACTO Response:**

SIP/VOIP calling systems had the major disadvantage of not being able to call for emergency services as effectively as a traditional phone line. This is due to the fact that SIP/VOIP systems are not directly associated with an address. The solution was a regulatory system which requires SIP/VOIP lines to be associated with a physical address. This address must be updated if the SIP/VOIP calling devices are ever moved to a new location.

In the advanced countries, the exact location of caller can be identified by the centralized emergency service agencies. In India no such provision for identifying the exact location of caller is available even for mobile networks. Moreover, in many parts no centralized emergency service agency is available. In case of internet connection provided at fixed location, the location of the caller can be known. However, in case of nomadic use of

Internet telephony, where a user accesses the Internet from different locations, it is difficult to identify the location of the caller.

Although it might be possible to provide this but at present it should not be mandated and keep for future possible consideration as some other alternatives are already available.

**Question 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?**

**ACTO Response:**

Informing user about the current limitation of internet telephony for emergency services will be sufficient as there are options to availing the emergency services by other existing means. Given the wide spread growth of smartphones and other handheld devices, applications for emergency assistance which provide location information and type of assistance required are being trialed and should be available more universally in the future. Such applications could replace/complement voice based emergency calls systems.

In the advanced countries, the exact location of caller can be identified by the centralized emergency service agencies. In India no such provision for identifying the exact location of caller is available even for mobile networks. Moreover, in many parts no centralized emergency service agency is available. In case of internet connection provided at fixed location, the location of the caller can be known. However, in case of nomadic use of Internet telephony, where a user accesses the Internet from different locations, it is difficult to identify the location of the caller.

**Question 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.**

**ACTO Response:**

TRAI also should not mandate any service quality levels for Internet Telephony services. These services are different services from traditional PSTN/PLMN voice services using a different technology with different capabilities and limitations. 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, 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.



Therefore we believe that quality of service is an area in which TRAI should apply light-handed regulation followed by many regulators with respect to IP telephony services and should avoid imposing strict requirements. Instead, 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, 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.

The important thing is the transparency with regard to the quality of services provided. A best effort service provider has no means to guaranty QoS at the network level. It can offer easy nomadic use or favorable pricing to differentiate its services and attract consumers. Given the layered nature of IP networks, and the services and applications that operate over them, QoS for VoIP needs to reflect both the underlying network and the VoIP application. The ITU is setting international standards for performance objectives in IP networks with a reference architecture (Y.1542) that assigns critical service performance parameters to the various network elements to provide an end-to-end QoS regime for internationally-delivered services. It is up to national regulatory (and industry self-regulatory) bodies to convert the Y.1542 reference architecture and performance quotas into a national architecture with national network elements, in the form of industry guidelines. The network elements would need to include customers/end-users equipment, access networks and transit/backhaul networks. In future, a testing and measurement regime could then be defined to permit monitoring and enforcement of the guidelines.

**Question 15. Any other issue related to the matter of Consultation.**

**ACTO Response:**

It is important that the current policy / regulatory framework rightfully recognizes and embrace convergence of networks, services and devices as stated under NTP-2012. In most of the economies, the VoIP regime is liberal, which also includes no prohibition on interconnection between IP and PSTN networks / traffics. While TRAI is deliberating removal of current restriction on internet telephony, it is pertinent that the current restriction on IP and PSTN should also be liberalized in the larger interest of the consumers who would stand to get benefitted. If there are any concerns around security or revenue by removing such restrictions, those can be deliberated and addressed. Our existing licensing regime which has so far been primarily voice centric has also been amended many times keeping in view the security, proper conduct of telegraphs and in the consumer interest.

The next wave of telecom growth and digital revolution will ride essentially on data. Policies which have helped steered the growth of voice sector may not necessarily be suitable for the growth of data services. Therefore there is a legitimate need for policies to recognize the advent and potential of emerging technologies which will significantly help in proliferation of data services. The policy measures will not only open up the data sector, but will also help place India at the helm of technology advancement globally. Our sector is witnessed proliferation of OTT players who are not licensed. These players permit all type of call flow which do not align with the stated routing plan. Ideally there should be a concept of “same service same rule” so that there is a level playing field for all players in the sector. It is not justified that while existing licensed operators continue to be regulated including operate under restrictions (which is current consultation), the other stake holders (OTTs) operate without any regulation. Therefore time has come to accord similar treatment to existing operators so that they call also compete with OTTs on a equal footing.

Growth in data service cannot proliferate unless the restrictions around VoIP/IP-PSTN interconnection are not removed. Unless this area is fully addressed, it will be difficult for the sector to fully embrace the technological developments. Removing these restrictions will surely help increase the broadband connectivity in unserved areas.

The IP to IP interconnection should be mandated as this will help in reducing the call rates.

AGR: The IUC charges to other carrier needs to be reduced

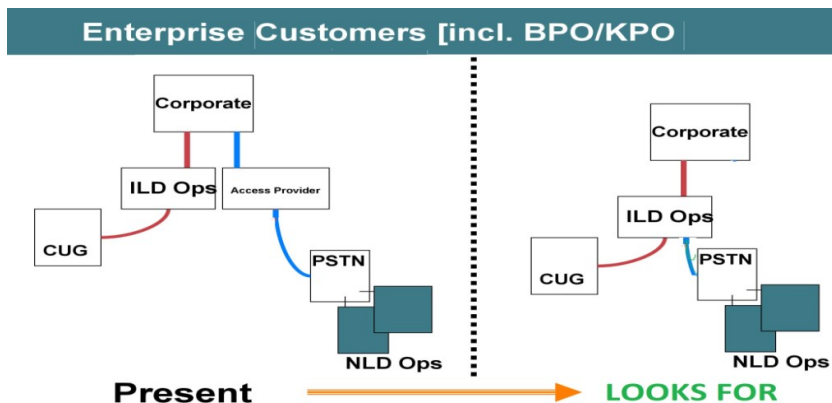
#### **Restriction on Interconnection impacts BPO sector:**

In our view, IP-PSTN interconnection is equally vital and important for continued growth trajectory for the BPOs/Enterprise Data Services sector. Enterprise/BPOs require this flexibility for their in-house captive requirements. In the absence of such flexibility, there would be unnecessarily investment on duplicating the infrastructure separately on voice and data networks. IP-PSTN interconnection would lead to interconnection of IP and TDM networks. This would necessitate an interconnection regulation, which may be framed by TRAI.

Current license condition restricts the PSTN interconnection for ILD operators vide license clause no. 2.2(b)

*“2.2 (b)ILD service provider can enter into an arrangement for leased lines with the Access Providers/NLD service provider. Further, ILD Service Providers can access the subscribers directly only for provision of international Leased Circuits/Close User Groups (CUGs). Leased circuit is defined as virtual private network (VPN) using circuit or packet switched (IP*

Protocol) technology apart from point to point non-switched physical connections/transmission bandwidth. **Public network is not to be connected with leased circuits/CUGs."**



The above diagram illustrates the current restriction and what we are looking for in the case of enterprise customers like BPO/KPOs.

It may also please be noted here that Access Service Provider license were enhanced to include internet, broadband, unrestricted internet telephony and thereby enabling to offer full bouquet of triple play voice, video and data services.

In India, BPO sector is under stiff completion from other countries like Philippines, Indonesia. Being this sector is cost sensitive, it looks option to move other countries due to cost benefit. Our Hon'ble Minister of Communication has stated many times to spread BPO sector in smaller cities. In order to achieve that goal, regulators /policy makers in telecom have an important role to review the bottlenecks for the growth of BPO sector. By removing the regulatory restriction of PSTN connectivity for ILDOs, it will firstly enhance competition among TSPs and secondly more affordable by using technology innovation to use the existing infrastructure to provide data and voice service to BPO sector will make it possible for the growth of BPO sector and to spread the BPO sector in smaller cities in India.

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