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Principal Advisor (Network, Spectrum & Licensing),
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Mahanagar Doorsanchar Bhawan
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New Delhi: 110 002

Dear Sir,

Subject: Cisco response to Consultation Paper on Review of Terms and Conditions for registration of Other Service Providers (OSPs)

At the outset, we would like to thank TRAI for undertaking consultation to clarify on the registration of Other Service Providers (OSPs). With landmark innovations in communications, including infrastructure and service delivery, it is essential to revisit the regulations governing OSPs in India.

We at Cisco welcome this opportunity and are providing inputs based on our experience as a technology leader in networking and telecom partner for core networking, communication and security products and solutions. In addition to the responses to the stated questions, we have provided our perspectives on how to foster innovation in collaborative networking and realizing the true potential of IoT offerings.

Please find enclosed our detailed submission on TRAI consultation paper. Look forward to your kind consideration of our inputs and opportunity to discuss further.

Thank You.

Best Regards,

Harish Krishnan

CISCO Response to TRAI Consultation Paper on Review of Terms and Conditions for registration of Other Service Providers (OSPs)

(Issued on March 29, 2019)

Cisco Systems is the world's largest manufacturer of networking equipment and a market leader in the provision of network management solutions and applications. We at Cisco, are grateful for the opportunity to share our feedback to TRAI as it revisits the registration of 'Other Service Providers (OSPs)' in a comprehensive manner. Our responses to the questions posed in the Consultation Paper issued on March 29, 2019 are below for your kind perusal.

Cisco believes we are at an inflection point in the use of technology, which will disrupt the way we connect. While technologies are fast emerging, a technology neutral framework is imperative to enhance service delivery and customer experience. TRAI has made periodic advances in regulatory frameworks to acknowledge innovations. Therefore, in addition to the responses to your stated questions, we have provided our perspectives on innovative collaboration and IoT offerings, including mixing of IP-PSTN on select platforms. We completely acknowledge TRAI's intent to strike a balance between allowing new technology to thrive, yet combat toll bypass. However, we believe it is an opportune time for TRAI to enable exponential growth of innovations and unlock the potential of mixing IP-PSTN in the way we do business, manage educational and medical institutions, trade and mobility.

Q1. Please provide your views on the definition of the Application Service in context of OSP. Whether, the Application Services which are purely based on data/ internet should be covered under Application Service for the purpose of defining OSP.

A1. The words "Other IT enabled services" as used in the definition of Application Services must be clearly defined and not left to anyone's interpretation. Alternatively "other IT enabled services" be eliminated from the definition of Application Service.

Q2. Whether registration of OSP should be continued or any other regulatory framework should be adopted for OSPs so that the purpose of registration specified by government is met. Please furnish your views with justification.

A2. Present system of registration may be continued

Q3. What should be the period of validity of OSP registration? Further, what should be validity period for the renewal of OSP registration?

A3. Present validity period looks fine.

Q4. Do you agree that the documents listed above are adequate to meet the information requirements for OSP registration? If not, please state the documents which should be added or removed along with justification for the same.

A4. Documents are fine, but if DOT can maintain a Digi locker of these documents and avoid asking the same document again and again for each registration that would be better. Only documents having changes must be sought for submission.

Q5: Do you agree with the fee of Rs. 1000/- for registration of each OSP center. If not, please suggest suitable fee with justification.

A5. The present fee is fine and needs no revision.

Q6: Do you agree with the existing procedure of OSP registration for single/ multiple OSP centres? If not, please suggest suitable changes with justification.

A6. Currently the registration is location wise which make it onerous, important that this is made Company based. Companies can be made responsible to follow rules, provide annual returns and also certified network diagram for each centre.

Q7: Do you agree with the existing provisions of determination of dormant OSPs and cancellation of their registration? If not, please suggest suitable changes with justification.

A7. Existing provisions are adequate.

Q8. Do you agree with the terms and conditions related to network diagram and network resources in the OSP guidelines? If not, please suggest suitable changes with justification.

A8. The current requirements are adequate.

Q9. Do you agree with the provisions of internet connectivity to OSP mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.

A9. Unlike virtually every other market in the world, India has created a barrier that prevents all but a few licensed entities from mixing IP and PSTN streams. This barrier prevents the effective deployment of a variety of innovative services in India and discourages innovators from looking to India as a welcoming location to develop cutting edge communications services. Hence, we recommend that PSTN/IP mixing must be allowed. More details in answer to Question No 34.

Q10. Do you agree with the provisions related to Hot Sites for disaster management mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.

A10. Present provisions are adequate.

Q11. Do you agree with the provisions of logical separation of PSTN and PLMN network resources with that of leased line/ VPN resources for domestic OSP mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.

A11. We do not agree with the logical separation pf PSTN and PLMN network and in fact to keep pace with time and for reasons mentioned in A9 above PSTN /IP mixing must be allowed.

Q12. Do you agree with the provisions of PSTN connectivity/ interconnection of International OSP mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.

A12. We do not agree and in fact to keep pace with time and for reasons mentioned in A9 above PSTN /IP mixing must be allowed.

Q13. Please provide your views as to how the compliance of terms and conditions may be ensured including security compliance in case the OSP centre and other resources (data centre, PABX, telecom resources) of OSP are at different locations.

A13. Compliance of terms and conditions may be ensured including security compliance in case the OSP centre and other resources (data centre, PABX, telecom resources) of OSP through regular DOT audits.

Q14. Please provide your views whether extended OSP of existing registered OSP may be allowed without any additional telecom resource. If yes, then what should be the geographical limitation for the extended OSP centre; same building/ same campus/ same city?

A14. Please refer to our answer to Question no 6. We would recommend a companywide OSP registration.

Q15. Please provide your views as to how the compliance of terms and conditions may be ensured including security compliance in case of the extended OSP centre.

A15. This can be achieved through regular DOT audits as answered in Q13 above.

Q16. Do you agree with the provisions of general conditions for sharing of infrastructure between International OSP and Domestic OSP mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.

A16. Procedure for obtaining Infrasharing permission is too lengthy and needs to be simplified. Infrasharing in our view should be processed as part of main OSP application wherever feasible and post submission of BG, certificate for Infrasharing should be issued.

Q17. Do you agree with the provisions of Technical Conditions under option -1 & 2 for sharing of infrastructure between International OSP and Domestic OSP mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.

A17. It should be standardised as a single option.

Q18. In case of distributed network of OSP, please comment about the geographical limit i.e. city, LSA, country, if any, should be imposed. In case, no geographical limit is imposed, the provisions required to be ensured compliance of security conditions and avoid infringement to
scope of authorized TSPs.

A18. In case no geographical limit is imposed, audits are the best way to ensure compliance. If geographical limit is mandatory it should be country level or at least state level. Today even if STD code is changing in same state, we cannot use distributed network.

Q19. Do you agree with the provisions including of logical partitioning mentioned in the OSP guidelines for distributed architecture of EPABX? If not, please suggest suitable changes with justification.

A19. Answered in Q11 above.

Q20. Do you agree with the monitoring provisions of mentioned in the OSP guidelines for distributed architecture of EPABX? If not, please suggest suitable changes with justification.
A20. Agree.

Q21. Please comment on the scope of services under CCSP/HCCSP, checks required / conditions imposed on the CCSP/ HCCSP including regulating under any license/ registration so that the full potential of the technology available could be exploited for both domestic and international OSP, and there is no infringement of the scope of services of authorized TSPs.
A21. All services under current OSP laws should be allowed under CCSP/HCCSP. We should be able to share the infra similar to centralized architecture, EPABX sharing. OSP's can submit bank guarantee for same if required.

Q22. Please provide your comments on monitoring of compliance in case interconnection of data and voice path is allowed for domestic operations.
A22. This can be done through regular audits by DOT.

Q23. Do you agree with the provisions for use of CUG for internal communications of OSP as mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.
A23. We agree with it. For use of CUG no bank guarantee should be required as it is internal calling within the team and partitioning between OSP setup and CUG can be implemented.

Q24. Do you agree with the monitoring provisions for use of CUG for internal communications of OSP mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.
A 24. Agree.

Q25. Do you agree with the provisions of 'Work from Home' mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.
A25. No. Use of PPVPN for Work from Home solution is very costly solution and major hurdle for most of the OSP's to use this provision. User PPVPN should be replaced with use of company provided VPN. More details in answers to Q34.

Q26. Whether domestic operations by International OSPs for serving their customers in India may be allowed? If yes, please suggest suitable terms and conditions to ensure that the scope of authorized TSP is not infringed, and security requirements are met.
A26. Permitting VOIP and PSTN mixing will help facilitate this – Maintaining CDR's and appropriate audits can be prescribed.

Q27. Whether use of EPABX at foreign location in case of International OSPs may be allowed? If yes, please suggest suitable terms and conditions to ensure that the scope of authorized TSP is not infringed, and security requirements are met.
A27. As a Disaster Recovery (DR) or Server Failover measure use of EPABX at foreign location must be allowed not only for IOSP but for DOSP also. Primary/Secondary servers would

continue to be located in India, which as such is tuned to ensure that the scope of authorised TSP is not infringed, and security requirements are met. The DR Server at foreign location would also be controlled by the Primary /Secondary Server and would primarily be used only for signalling. It would not be out of place to mention here that world-wide trend is to move to cloud services.

Q28. Do you agree with the Security Conditions mentioned in the Chapter V of the OSP guidelines? If not, please suggest suitable changes with justification.
A28. Agree

Q29. Do you agree with the provisions of penalty mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.
A29. Agree with Penalty provisions, but would recommend that warning should first be issued to OSP and if no actions taken within stipulated time penalty can thereafter be imposed

Q30. Whether OSP to OSP interconnectivity (not belonging to same company/ LLP/ group of companies) providing similar services should be allowed? If yes, should it be allowed between domestic OSPs only or between international and domestic OSPs also.
A30. If allowed would help Ease of Doing Business ("EODB"). It should be allowed for both DOSPs & IOSPs across different locations, states in India

Q31. In case OSP interconnectivity is allowed, what safeguards should be provisioned to prevent infringement upon the scope of licensed TSPs.
A31. This can be done through regular audits by DOT.

Q32. Do you agree with the miscellaneous provisions mentioned in the Chapter VI of the OSP guidelines? If not, please suggest suitable changes with justification.
A32. Agree

Q33. What provisions in the terms and conditions of OSP registration may be made to ensure OSPs to adhere to the provisions of the TCCCPR, 2018?
A 33. No Comments

Q34. Stakeholders may also provide their comments on any other issue relevant to the present consultation.

A 34.

Issues:

1. <u>Current policy of not allowing IP-PSTN mixing undermines growth and innovation and prohibits India from reaping the full benefits of convergence.</u>

Government of India prohibits any mixing between PSTN endpoints and IP endpoints, except in relatively narrow cases subject to licensing requirements. The policy, created originally to combat toll bypass and advance innovation, now produces the opposite result of undermining TRAI's core goal of propelling "India to become the front-runner in the Fourth Industrial Revolution."

Reasons for allowing IP-PSTN mixing:

a. Innovative, converged services mix IP and PSTN streams

A wide array of innovative offerings often depends on enabling IP and PSTN endpoints simultaneously, particularly in order to extract maximum benefits. A good example of this is collaborative videoconferencing, where multiple end users join a single meeting in which they meet via video, chat via electronic message, and work on documents and virtual whiteboards in real time. For a variety of reasons, including bandwidth limits for some users and physical equipment limitations for others, many participants connect their audio to the meeting via PSTN endpoints, while many others connect directly via IP from laptops and smartphones. Prohibiting IP-PSTN mixing vastly limits the reach and effectiveness of this kind of collaboration service.

The prohibition also impacts many Internet-of-Things services. While the core of most IOT services rests on machine-to-machine communications, many applications include a communication layer that enables factory managers or other observers to interact with each other in real time based on the data the IOT service delivers. As with collaboration services, this capability is most valuable when it is open to all end users, including those that do not have ready access to an IP endpoint.

There is little doubt that the IP-PSTN barrier will impact a wide array of innovative services that are still on the drawing board. These include applications ranging from connected homes, to connected classrooms, to healthcare, and to autonomous vehicles. The future scale of the potential impact is immense.

b. The IP-PSTN barrier drives away innovators

For the reasons discussed above, India's current IP-PSTN barrier poses a significant challenge to the innovators developing these services and to the consumers and enterprises that use them. This impacts Indian consumers and enterprises directly, as they are often forced to use significantly pared back versions of the services. It also impacts India more broadly and more indirectly, as service providers and innovators will increasingly consider developing and testing new advanced services in other countries.

c. The barrier is not aligned with global technological convergence

While different transmission technologies were once distinct in their capabilities and uses, they are now virtually interchangeable. Indeed, TRAI's Consultation Paper recognizes the positive changes in access and opportunity that convergence delivers. The IP-PSTN barrier reinforces a distinction that is no longer applicable to advanced technologies; the result is that Indian consumers are not getting the full benefits of technological possibilities as in other countries that allow IP-PSTN mixing.

d. Removing the barrier will allow advanced telecom services to flourish

For these reasons, we urge TRAI to reconsider the prohibition. While it may have served a valid purpose when first crafted, it is now a barrier to India's advancement as a world leader in advanced communications technologies.

Suggestions:

While eliminating the barrier altogether would be the most effective approach, we request that TRAI considers narrowing its scope of applicability in the first stage. At present, the barrier is almost total, prohibiting IP-PSTN mixing in virtually any context (except for rare applications which anyway require licensing or authorization). To the extent the original purpose was to address toll bypass, TRAI could consider applying the barrier only to point-to-point voice calls because they are the communications most directly responsible for toll bypass losses. Limiting the prohibition to point-to-point calling – but freeing IP-PSTN mixing in other contexts – would allow innovative collaboration and IOT offerings to thrive in India, securing its place as a world leader in tech innovation. It is also understood from the Service Providers that their license permits them to mix PSTN with IP and provide Managed IP to end users. Directions from DOT/TRAI permitting mixing of Managed IP with IP would also go a long way in allowing innovative collaboration and IOT offerings to thrive in India.

2. Need to change Location-based OSP licensing and Bank-Guarantee to Company-based licensing and Bank-Guarantee

Current Challenges:

- Submission of same documentation for each new location(site) and also online and offline
- Inconsistencies with the requirements between the Term Cells.
- Certain regulations are open to interpretation and the officers understanding of telephony.
- Duplication of documentation – submitting multiple signed documents and application on line and then again in hard copy. This is exceedingly cumbersome and time-taking.

Impact: Huge delay, unnecessary cost and uncertainty in getting OSP licenses

Proposed Solution:

We request change in the OSP Terms to allow Company-based Licensing and Bank-Guarantee. Locations (sites) and their related documents could be updated with DoT at the time of submission of annual reports.

3. Need to urgently simplify the Work-From-Home provisions in OSP License Terms

Current Challenges:

The OSP Terms require a) individual leased lines from company premises to employee home; and b) submit amendments to licenses; before support

engineers are allowed to work from home. New License are required in this case per function/ location. This means for 30 engineers in a particular contact-center, there need to be 30 leased lines. This is a huge cost and impractical, also consider that employees move houses frequently. Such requirement is unique to India.

Impact:

- Such prohibitive restrictions make BCP (Business Continuity Planning) and DR (Disaster Recovery) more difficult as there not always extra buildings (i.e. Licensed sites) to go to, if it is possible to travel.
- Many natural disasters make travel to work impossible (ex.– Mumbai rains/ Chennai flooding) and result in significant business disruption for our customers. A feasible work-from-home option would be of enormous help to the industry.
- Since the current work-from-home option of a direct leased line is impractical and very expensive; MNCs operating in India are also thinking about re-locating contact-center operations from India to other countries (ex. – Eastern Europe and South America) which could result in significant number of job losses.

Proposed Solution:

We request relaxation of the regulation for the need for individual leased lines for home working capabilities and allow option of technologies such as Virtual Office with an always-on, secure connection to the corporate network.

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