

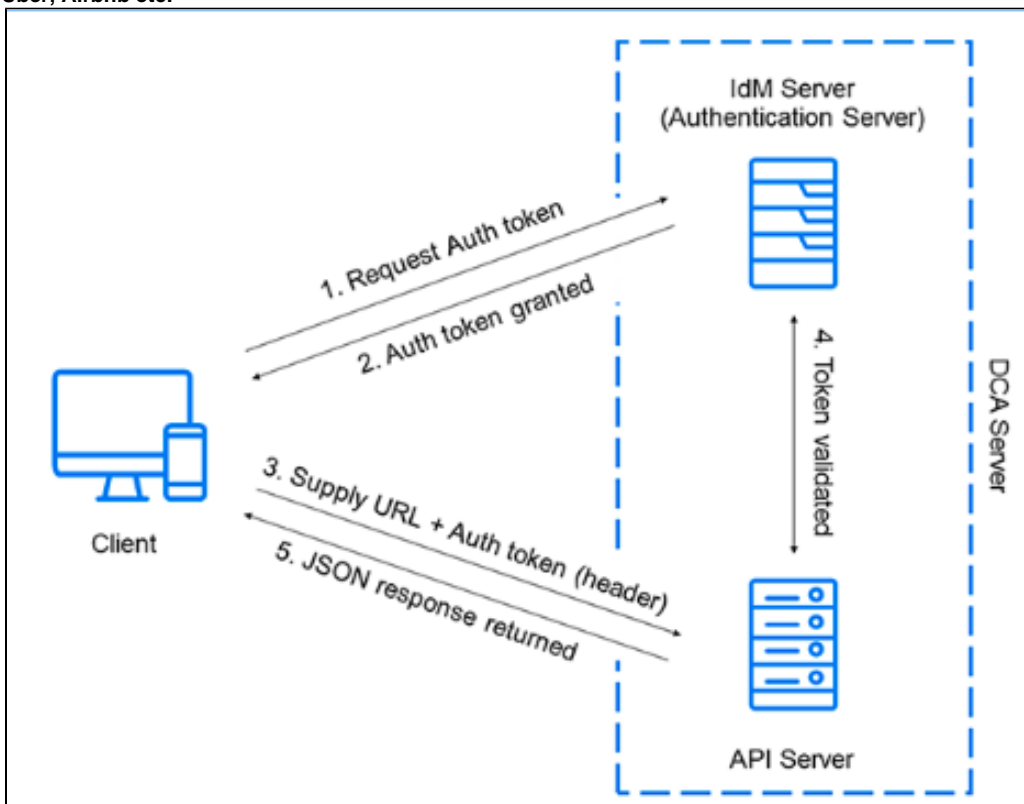
TRAI Consultation Paper Response for Review of Terms and Conditions for registration of other Service Providers (OSPs)

Introduction

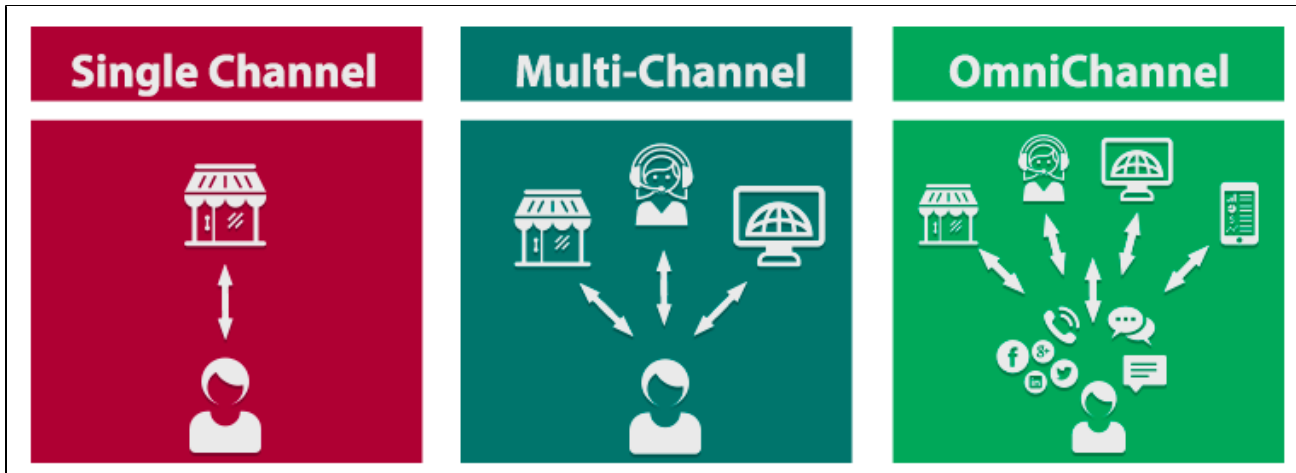
- Firstly, Kaleyra would like to extend thanks to TRAI for the initiative of consultation framework to review OSP Terms and conditions from stakeholders.
- We appreciate the intent and purpose of the consultation "In view of the vast changes in technology and evolution of different networking architectures and solutions for setting up of OSP network and evolution of new user applications and service delivery scenarios, a need has been felt by DoT to review the technical, financial and regulatory requirements, scope of operations and the terms and conditions of registrations of OSPs in a comprehensive and holistic manner"
- We would like to give our comprehensive views as a stakeholder in the industry . We would also like to share our research and learning on what's happening globally to inform TRAI to progress and help OSPs to progress on the latest developments in technological innovation, customer expectations and remaining competitive in the global market .

Technological and Product Innovation in this space

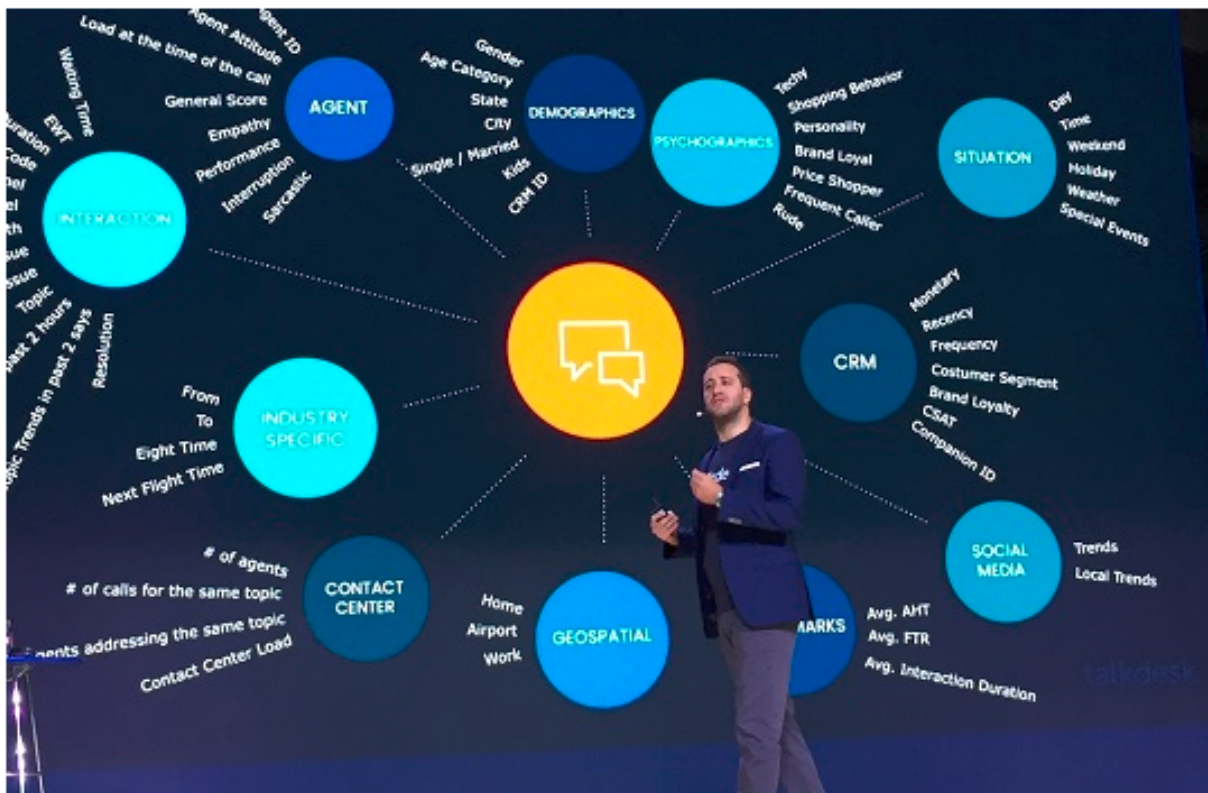
1. **Rise of Application Programming Interface APIs-** Business Communication has switched from a Capital Expenses (Capex) model to Operational Expenses (Opex) model. APIs help bridge this space. APIs are cost savvy, scalable, easy to configure, secure and reliable for all types of businesses to use. Some of the top companies in the world are utilizing APIs for communication- **Skpe, Google, Arlo, Uber, Airbnb etc.**



2. **Omni Channel Communication-**Customers increasingly want an Omni channel communication experience with SMS, Voice, Instant Messaging, Chatbot, Video etc. all available in a single software. The trend globally is to communicate with the customer in the right channel at right place. Top CPaaS global players Twilio, Nexmo, Plivo, Message Bird, Infobip are giving their customers an omni channel experience.



- 3. Chatbots-** 15 years back when a customer called an IVR/Helpline he had to wait in a long queue pressing 1, 2 ... Today, despite the shift of technology unfortunately most of the customers have to go through the same experience. This space is slowly undergoing a transformation and in a couple of years we anticipate an exponential rise in channelizing chatbots to answer basic queries of customer. With built in intelligence the chatbot engages with the customer and based on the nature of query connects to the right agent knowledgeable on resolving customer problem.
- 4. Machine Learning and Artificial Intelligence-** Machine learning is growing as they are being channelized to analyze, improve and optimize customer communication. Twilio Autopilot, Talkdesk IQ and Genesys are making strides in this space. In some time we anticipate the machine predicting contact center load, suggest customer which is the right channel to use- Voice, Chatbot, Video etc.

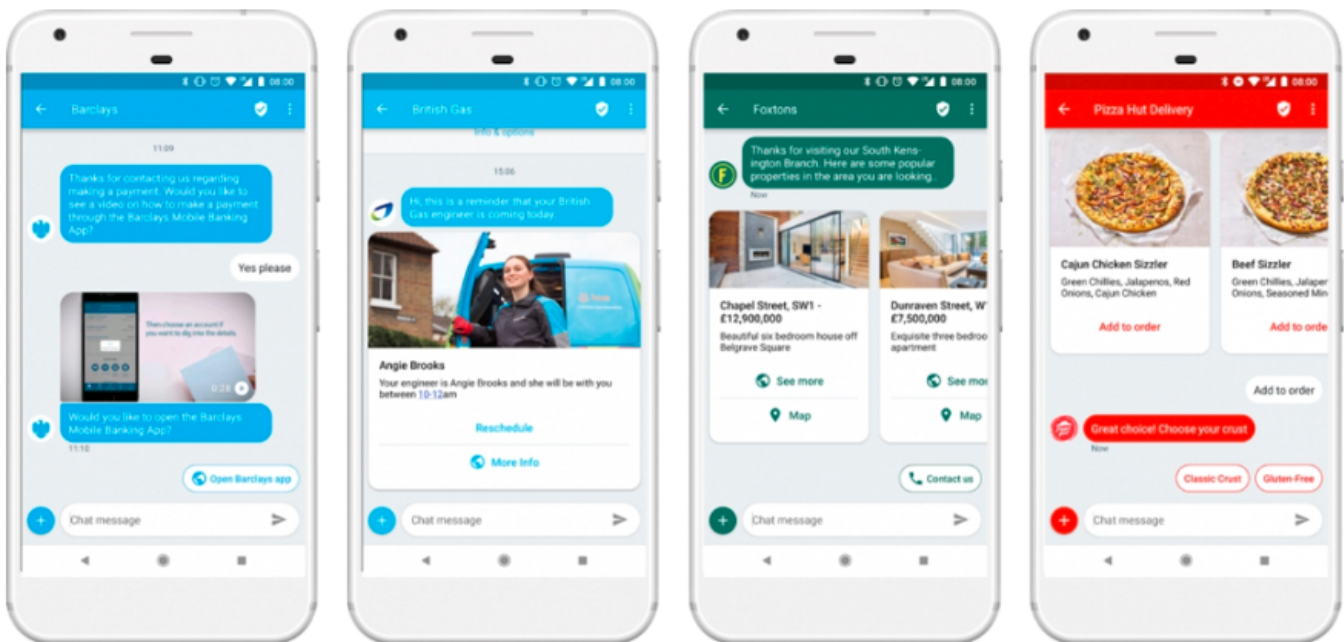


- 5. Security-** Most CPaaS vendors have to comply with GDPR data privacy laws to sell in European markets. Other than that meet PCI DSS standards for financial transactions, HIPAA for healthcare transactions and so on based on the geography and business they're catering to. The certifications and Security is a crucial element to work with businesses.



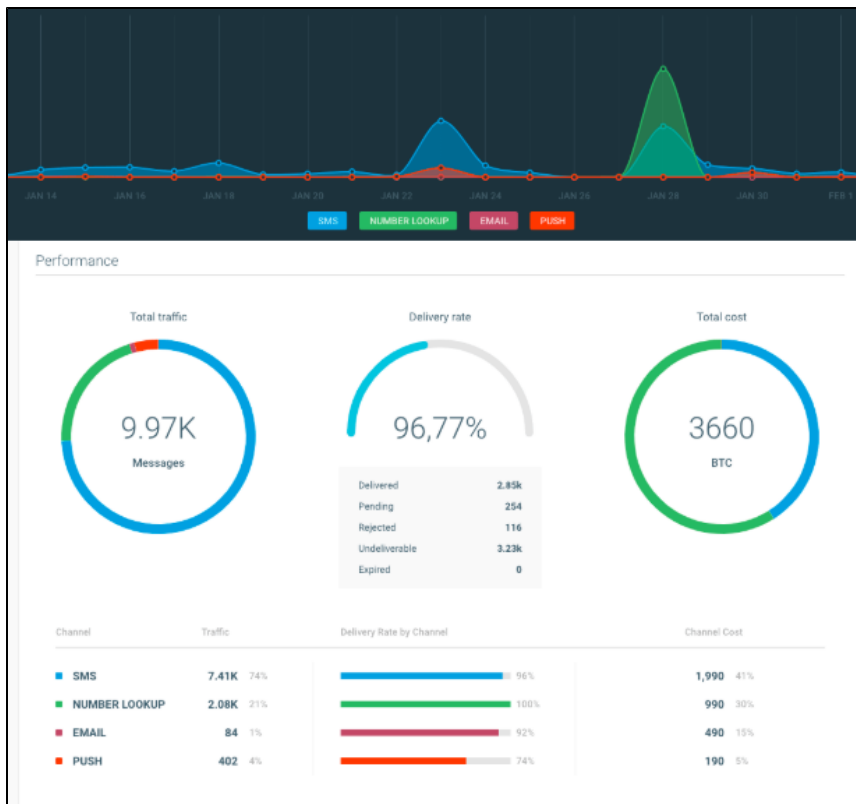
6. RCS Messaging- Businesses are looking forward to give a rich experience, option to choose, images and carousels and a better overall experience to customer with RCS messaging. messaging. Mobile World Congress 2018

had a good range of focus on RCS messaging.



7. Soft phones- Businesses in Contact Center are increasingly integrating soft phones to connect with customers with VOIP technology. The latest technology makes the communication -device, application and channel agnostic

8. Analytics -Customers are increasingly expressing need for advanced analytics and metrics -measuring wait time, duration of call, exceeded queue wait time, delivery %, agent productivity metrics etc.



Issues for Consultation

#	Issues for Consultation	Kaleyra Response
1	<p>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.</p>	<p>The current definition of Application Services is limited and doesn't cover the entire picture. Also with the pace of change we feel a need for a broader definition. We would suggest renaming to Business Communication or alternatively extend the current definition</p> <p><i>"Any person or entity engaged in any form of communication through voice, sms, instant messaging, video, chatbot or any form of communication channel between 2 or more stakeholders with a legally permissible technology infrastructure.</i></p> <p>Why this definition</p> <ul style="list-style-type: none"> a. This will broaden the current definition to channel specific -SMS, Voice, Video instead of service specific-tele banking, tele medicine etc. The services will keep on changing based channels offered to customer will remain the core b. Tomorrow if the channel expands so does the definition with any form of communication channel c. Legally permissible within the country of operation will keep it within the accepted parameters d. Should be made wide for coverage of all service providers instead of channel specific- just SMS or Voice e. Tech infrastructure available – this should help widen to include latest technology innovation to serve customers- AI, AR/VR, IOT etc. The due diligence/network diagram can be shared by Service provider and in principle approved by TRAI

2	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.	<p>Here the purpose of the Government shall be articulated first and objectives of Government must be clearly spelt to comment on whether OSP framework has been meeting them or found inadequate anywhere. This can be done by Government only.</p> <p>Based on last available inputs, it is assumed by us that OSP was originally intended for statistical purposes and also to provide incentives to the sector to promote the ITES/BPO sector</p> <ol style="list-style-type: none"> 1. If only statistical purposes are to be met, then a simple periodic return in specified data input format could serve the purpose. Every entity is filing many statutory returns and filing one more online return may not be a big load anyways. 2. If incentivization is the other objective, then all interested and eligible entities may be advised to apply for the same and Government can scrutinize and allow incentives to all eligible entities at annual intervals.
3	What should be the period of validity of OSP registration? Further, what should be validity period for the renewal of OSP registration?	The current validity norms are good to continue.
4	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.	<p>Here also the purpose of the Government shall be articulated first and objectives of Government must be clearly stated to comment on whether the supporting documents for OSP framework have been meeting them or found inadequate anywhere. This can be done by Government only.</p> <p>With available information, like any other registration, the supporting documents shall be as under:</p> <ol style="list-style-type: none"> 1. Certificate of Incorporation. 2. MOU/MOA document. 3. PAN card. 4. Address Proof of the registered office. 5. Brief description of the line of business and nature of services that the entity would be delivering under this OSP registration. 6. Undertaking to ensure that all the services operated shall be lawful and in full compliance of the DOT regulations applicable from time to time for such services. 7. Details of payment made for the registration as per applicable fees.
5	Do you agree with the fee of Rs. 1000/- for registration of each OSP center. If not, please suggest suitable fee with justification.	<p>We suggest an amount of Rs.5000 should be reasonable for a single all India registration for one legal applicant entity.</p> <p>The fees levied shall reasonably cover all administrative costs associated with the said registration. Government may examine and levy such reasonable fees that would cover all their expenses to manage this transaction.</p>
6	Do you agree with the existing procedure of OSP registration for single/ multiple OSP centers? If not, please suggest suitable changes with justification.	<p>We suggest only one OSP registration that shall cover all the locations of the Applicant Service Provider within India. It may have an annexure with all details of all locations, which can be added /deleted anytime later as and when there is any change. The idea is to keep this process simple.</p> <p>There shall not be a need and hassle for multiple registrations for the same legal entity once registered.</p> <p>The Service Provider should be free to operate under this registration anywhere across the country at multiple locations, as per business needs, without any restriction.</p>
7	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.	Any OSP that does not submit the mandated annual returns for 3 consecutive years may be de-registered. There is no need for maintaining any dormant status. Once de-registered, such information shall get communicated to all access service providers to enable them to take necessary action to suspend the Telecom resources provided against this OSP registration number.
8	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.	The due diligence of the current system holds good.

9	Do you agree with the provisions of internet connectivity to OSP mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.	The new definition will take away ambiguity and may obviate the need for each of these operational details about the infrastructure deployed by the OSP
10	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.	Not a issue. In case of a natural disaster and emergency either TRAI or other available OSPs should chip in to continue business communication /IVRs helplines to help users and customer.
11	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.	This would be a requirement till such time PSTN and IP integration is legally prohibited. In line with NDCP 2018, eventually this shall be permitted by DOT and as and when this is legally permitted, even this would be history and may no longer be needed to be examined.
12	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.	This would be a requirement till such time PSTN and IP integration is legally prohibited. In line with NDCP 2018, eventually this shall be permitted by DOT and as and when this is legally permitted, even this would be history and may no longer be needed to be examined.
13	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.	<p>The OSPs already have to maintain GDPR, HIPAA, PCIDS compliance etc. The security compliance is already being owned by OSPs to be in business.</p> <p>With the new definition OSP is free to adopt the best fit technology / infrastructure to be deployey which includes security checks.</p> <p>Good with TRAI point 3.1.2 Data servers of cloud PABX can be anywhere in world and domestic data centers located in India. This is expensive in having a additional Data center in India in a global business context but in the long run ensures security and localization for data of Indian consumers.</p>
14	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?	<p>As suggested by the new definition, in the age of cloud, there is no need to limit by geography of OSP operations.</p> <p>The OSPs should be allowed to be a global business as the existing OSPs worldwide.</p> <p>With new definition-Legally permissible within the country of operation will keep it within the accepted parameters.</p>
15	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.	As mentioned already, the regulatory oversight does not need to include the security and operational hygiene of the OSP operations. Let the compliance requirements be minimized and all avoidable terms that do not fit the Cloud/digital age, be done away with.
16	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.	As mentioned already, please enable and empower the OSPs with ability to deploy the best available technology options without any avoidable regulatory deterrents. In the Cloud Age, sharing of infrastructure is the new normal. Unless there's a specific regulatory purpose regulator shouldn't limit the sharing of infrastructure.

17	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.	Please enable and empower the OSPs with ability to deploy the best available technology options without any avoidable regulatory deterrents. In the Cloud Age, sharing of infrastructure is the new normal. Unless there's a specific regulatory purpose regulator shouldn't limit the sharing of infrastructure.
18	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 ensure compliance of security conditions and avoid infringement to scope of authorized TSPs.	<p>It is an imaginary fear that OSPs would infringe the TSP scope. Whatever is done by the OSPs is based on the Telecom resources provided by Licensed Access Service Providers.</p> <p>Any OSP will only resort to Call Conferencing which is a simple Telephony application service and does not infringe the core TSP scope at all.</p> <p>In the converged communications age where the network is available as a function as well as a service, it makes no ground to limit the OSP operations to any geography.</p>
19	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.	<p>Logical partitioning is only intended to accomplish the objective of preventing PSTN and IP integration.</p> <p>Once the NDCP 2018 recommendation gets implemented by removing this bar, then PSTN and IP get integrated seamlessly. Then there is no need for these requirements either.</p>
20	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.	Regulatory monitoring of the operations of OSP may be required and this can be accomplished by having a node with regulator having real-time access to all Call Data Record details to ensure that the call data can be accessed any time.
21	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.	<p>CCSP/HCCSP is the Telephony application Service Provider. Their scope includes call conferencing/bridging of two call legs, one call leg to the calling associate and another to the far end customer. The CLIP that is visible in the call recipient's phone is always the PRI/SIP DID through which the calls are conferenced. Hence it is clear that is not any call switching that is done by the licensed BSOs/access service providers. In call switching, irrespective of the number of devices through which the call may flow, the CLIP of call originating number is always seamlessly carried and displayed in call recipients phone. It is just one call leg. But in case of the CCSP/HCCSP it is always two call leg based solution with the Telecom resources hosted in a Data Centre of the CCSP/HCCSP. The Telecom resources of CCSP/HCCSP are always procured from Licensed BSOs/TSPs and CCSP/HCCSP are only Telephony Applications Services Providers operating in the domain of adding value to the services offered by BSO/TSP.</p> <p>As mentioned earlier, actually it is but apt to redefine OSP as BCSP (Business Communications Service Provider) and CCSP/HCCSP as BCSTP (Business communications Services Technology Provider)</p> <p>Thus, there is no infringement whatsoever with the scope of licensed BSOs/Access Service Providers.</p>
22	Please provide your comments on monitoring of compliance in case interconnection of data and voice path is allowed for domestic operations	<p>If and when any call is received from any OSP that does not bear any 10 digit DN provided by any Licensed BSO/TSP, then such OSP can be immediately investigated and basis any unscrupulous activity, be suspended and further action be taken. General Public shall be adequately educated on reporting such anomalies. It can be a reactive supervision than a proactive prevention in the interest of the reduced enforcement costs. Else, if it would have been proactively monitored for prevention of any abuse, it could cost heavily for regulators.</p> <p>There must be clear KYC compliance for the DNs through which calls are put through for all auditability post facto.</p>
23	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	<p>As mentioned already, let there be flexibility with the OSP to deploy all available technologies as long as lawful communications are being put through either for internal communications or external communications.</p> <p>There is no need to add complexity into the operations. These are converged communication times.</p>

24	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.	All these restrictions were relevant when voice revenues of BSOs were high and using the IP for voice communications was cheap and thus to ensure that there is no room for toll bypass. Now that voice revenues are not significantly higher than the data connectivity charges, time is ripe to allow voice to be put through either on PSTN or Data Networks seamlessly basis business needs. Then this very need to monitor is eliminated.
25	Do you agree with the provisions of 'Work from Home' mentioned in the OSP guidelines? If not, please suggest suitable changes with justification	<p>As mentioned earlier, being in the age of cloud enabled technologies where any one can operate securely from anywhere; there shall not be any restrictions on the location of the associate for handling the business communications. It should be allowed without any restrictions. Let the Service Provider who is answerable to his end client and the SLAs committed with respect to all aspects of the communication handling. Regulation may better abstain from this aspect completely.</p> <p>With reference to point 4.5 in the consultation paper</p> <p>A security deposit of Rs 1 crore for each registered location of OSP centre from which Work from home is extended is required. Why?</p> <p>This would be very limiting. These restrictions should be removed.</p>
26	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.	This should be proceeded with caution. Developer friendly companies worldwide like Twilio may benefit unduly for superior infrastructure and being early starters in the global market now extended to domestic market.
27	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	The Communications will essentially flow through the connectivity infra provided by the TSPs only. The location of the CTI infra should not matter. For law enforcement purposes, a monitoring node with real time CDR details may be insisted with DOT for any intervention as may be needed. Other than this, there should be freedom for operators to choose the location of their CTI infra and the network they choose to deploy to meet their business objectives.
28	Do you agree with the Security Conditions mentioned in the Chapter V of the OSP guidelines? If not, please suggest suitable changes with justification.	Let the objectives of such regulations be crisply articulated and then examine if these are still relevant with the changed context of operations. Should regulator ensure security or the BPO should own its secure operations as the security SLA delivery always vests with BPO.
29	Do you agree with the provisions of penalty mentioned in the OSP guidelines? If not, please suggest suitable changes with justification.	With the new broad definition of OSPs this aspect needs to be looked upon with fresh perspective. Much of the onus lies with the service providers.
30	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.	Yes. We request that inter connectivity of OSPs be allowed. Whether domestic or International to deliver better business redundancies and improved SLAs.
31	In case OSP interconnectivity is allowed, what safeguards should be provisioned to prevent infringement upon the scope of licensed TSPs.	As mentioned already, the OSPs can't infringe into licensed TSP scope. They only do call conferencing and they put all their calls only through the PRI/SIP/ data circuits of the licensed TSPs. The TSP shall always gain an insight into the traffic flowing through the circuits provided by them and TSP can always assist any Law Enforcement Authority.
32	Do you agree with the miscellaneous provisions mentioned in the Chapter VI of the OSP guidelines? If not, please suggest suitable changes with justification	Let the objectives of these provisions be articulated and their relevance to the current context be evaluated and all unproductive provisions be done away with in one go.

33	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.	Now that the DND enforcement of TCCCPR vests with Access Providers, there is no need to add any new terms and conditions to OSPs towards this objective.
34	Stakeholders may also provide their comments on any other issue relevant to the present consultation.	There a need for Voice call metrics and Voice Call cancellation metrics to be maintained by TRAI submitted by telecom providers. This should help triage connection issues and allow OSPs to take suitable measures – provide alternate stable connection from TSPs to end users for a better experience. Right now this is a reactive process for lack of dashboard/metrics and the customer experience is impacted with it.