



15th October 2019

Shri S.K. Singhal
Advisor [Broadband and Policy Analysis (BB&PA)]
Telecom Regulatory Authority of India
Government of India

Respected Sir,

Amazon Web Services (“AWS”) thanks the Telecom Regulatory Authority of India (“TRAI”) for the opportunity to comment on the Consultation Paper on ‘Review of the Scope of Infrastructure Providers Category-I (IP-I) Registration’. At AWS, we are strong proponents of industry consultation during the policy-making process and we look forward to a productive engagement with the Government.

AWS is committed to the vision of a Digital India. We launched the AWS Asia Pacific (Mumbai) region in 2016 to better serve end users in India. In 2017, we became the first global cloud computing service provider to be empanelled by the Ministry of Electronics and Information Technology, for the delivery of cloud services to government agencies. We remain committed to expanding our footprint in India and working with the Government to realise the vision of India’s digital infrastructure future through programmes such as Digital India and Smart Cities.

As a company that acts as an enabler in the various digital services being implemented by the Government, we are committed to support TRAI in its endeavour to create robust digital communications infrastructure in India, which will act as the foundation for realising India’s vision of a trillion-dollar digital economy. Attached is our view on how the scope and the manner in which the role of the IP-I providers need to be expanded to be able to create this digital infrastructure.

We request for time to meet with you next week to discuss our submission.

Sincerely,

A handwritten signature in blue ink, appearing to read 'ylynd'.

Yolynd Lobo
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Context: India has tremendous potential to become a global cloud computing leader. India's public cloud market is estimated to grow to over USD 4 billion by 2020¹. Investments in cloud infrastructure and the increased use of cloud services will be a key driver for transformation and economic development in the digital age. Cloud usage enables information sharing and innovation; improves resource allocation; and boosts workforce participation, all of which allow governments and businesses to direct reclaimed time and resources towards serving citizens². This creates a productive workforce, which further boosts development.

The steadily increasing investment in cloud services and infrastructure stands testament to the utility of cloud services – it is expected that global spending on public cloud services will reach USD 210 billion in 2019, which is an increase of nearly 24% from 2018³. India has the opportunity to benefit from an increasingly large proportion of this global market in the future.

The National Digital Communication Policy, 2018 furthermore rightly notes that high quality, accessible, efficient and affordable communications infrastructure will form the bedrock of next generation technologies in India⁴, which in turn will support economic development⁵. Therefore, it is essential to implement policies which will encourage greater access to communications infrastructure, and increasing investment in such infrastructure.

We will be responding to Q4 of Chapter 5 [Summary of the issues for consultation] of the Consultation Paper on Review of Scope of Infrastructure Providers Category - I (IP - I) Registration

(4) Any other issue relevant to this subject.

(A) **IP-I companies should be permitted to share passive infrastructure with all entities, subject to applicable limitations on how those entities may utilise the infrastructure:** IP-I companies should be allowed to share passive infrastructure not only with licensed/registered telecommunications service providers (“TSPs”), but also with other entities like Cloud Service Providers (“CSPs”). These other entities would not be permitted to use the infrastructure to deliver telecommunications services to customers; and such services should continue to be provided only by properly licensed TSPs. TRAI has itself noted that sharing of both active and passive infrastructure is necessary for ‘better spectral efficiency, reduced capital expenditures and better quality of service delivery’. AWS supports the TRAI’s recognition of increased access to passive infrastructure, which can play a major role in achieving all these goals. This will:

- Allow CSPs to access dark fibre and improve cloud services in India: Current Indian law does not allow unlicensed entities, including CSPs, to access passive infrastructure such as dark fibre from IP-I companies for any purpose. This means that CSPs are unable to buy or lease dark fibre in order

¹ Pages 49 and 51, India’s ‘Trillion Dollar Digital Opportunity’, report released by the Ministry of Electronics and Information Technology, Government of India, available at https://meity.gov.in/writereaddata/files/india_trillion-dollar_digital_opportunity.pdf.

² Amazon Web Services, 5 ways the cloud can drive economic development, available at https://pages.awscloud.com/rs/112-TZM766/images/5_Ways_the_Cloud_Can_Drive_Economic_Development-Whitepaper.pdf.

³ IDC media centre, Worldwide public cloud services spending forecast to reach \$210 billion this year, according to IDC, available at <https://www.idc.com/getdoc.jsp?containerId=prUS44891519>

⁴ Page 5, National Digital Communications Policy 2018, Department of Telecommunications, Ministry of Communications, Government of India, available at <http://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf>.

⁵ Page 1, National Digital Communications Policy 2018, Department of Telecommunications, Ministry of Communications, Government of India, available at <http://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf>



to construct, operate, and efficiently manage their own networks (configured to their own specialist requirements and optimised for customers). Instead, CSPs are forced to procure generic network connectivity services from local TSPs. *This is problematic because traditional networks operated by TSPs are principally designed for voice or public data services, such as IP services. They are not suitable for cloud services*, which require very high availability, bandwidth and low latency for extremely high amounts of data; and achieving these outcomes using TSP services is especially difficult given India's vast geography and relatively limited existing technology infrastructure and broadband deployment. The services provided by TSPs are also substantially more expensive than buying or leasing dark fibre from IP-I companies, and also significantly more expensive than similar services available in other countries. As a result, cloud services in India are generally slower, less reliable and more expensive than corresponding services in other countries. This discourages investment in technology and cloud businesses in India, and hinders growth of the technology industry.

- Increase investments in India's telecom infrastructure: It is also important to recognise that permitting CSPs and other entities to lease passive infrastructure from IP-I companies will stimulate increased investment in India's telecommunications infrastructure, and improve the quality of networks across India. Since CSPs have specific networking requirements, IP-I companies would need to build out additional networking infrastructure across different regions of India in order to meet specific demand from CSPs. In contrast, at present, CSPs are forced to utilise only the existing networks which have been established by TSPs.
- Help India become a global hub for cloud: Enabling such broader sharing of passive infrastructure will contribute towards the Government's goal of establishing India as a global hub for cloud computing, content hosting and data communication services, as has been recognised by the National Digital Communications Policy, 2018⁶.

(B) **CSPs should be permitted to use passive infrastructure for their own private networks**: AWS recommends that current law be amended to allow CSPs to use passive infrastructure obtained from IP-I companies (or from TSPs) in order to establish, maintain and operate an extended "private telegraph"⁷ – a type of private network – connecting two or more data centres in different locations. This would align with the legal position in nearly all developed countries (e.g. the U.S., Japan, Korea, Singapore, Australia, and countries in Europe).

- Private networks will not provide telecom services to customers: It should be clarified that any such "private telegraph" would **not** be used for the provision of telecom services to customers. For example, all CSP customers would continue connect to CSPs' data centres and cloud services using telecommunications services provided to them by TSPs. This connectivity would not form

⁶ Para 2.2(f), National Digital Communications Policy, Department of Telecommunications, Ministry of Communications, Government of India, September 2018, available at <http://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf>.

⁷ Rule 472, Indian Telegraph Rules, 1951: "Private Telegraphs: Any person may without a licence establish, maintain and work a telegraph (not being a wireless telegraph) within the limits of a single building, compound or estate: Provided that no telegraph line pertaining to the telegraph shall pass over or under a public road."



part of the “private telegraph”. Accordingly, the current law⁸ should be amended to allow private telegraphs to be established beyond the limits of “a single building, compound or estate”,⁹ and to pass over or under public roads, provided that they are only used for the purposes of an internal/private network (e.g., connecting two or more data centres).

- The legal provision for ‘private telegraph’ under current law reads as follows:
“[...] Any person may without a licence establish, maintain and work a telegraph (not being a wireless telegraph) within the limits of a single building, compound or estate: Provided that no telegraph line pertaining to the telegraph shall pass over or under a public road.”

AWS suggests that this provision should be amended to read as follows:

Any person or entity may without a licence establish, maintain and work a telegraph or data transmission system (not being a wireless telegraph or wireless data transmission system) for the purposes of operating a private, internal network that is only used by that person or entity (or its affiliate entities):

Provided that such telegraph or data transmission system shall not be used to provide any telecommunication services for which a separate license is needed under the Unified License Agreement (“ULA”).

- (C) **No new licensing/registration requirements should be imposed on CSPs:** The TRAI has proposed that IP-I companies be allowed to provide infrastructure access to ‘other TSPs’, subject to them being licensed by or registered with the Department of Telecommunications (“DoT”) or Ministry of Information and Broadcasting (“MIB”). The proposal includes CSPs among such ‘other TSPs’¹⁰.

AWS does not consider CSPs to be comparable to TSPs, and therefore recommends that CSPs be excluded from the scope of “other TSPs”. Furthermore, AWS recommends that the Government not subject CSPs to any additional regulation, including any licensing or registration requirement, as a condition for obtaining access to passive infrastructure. This is because:

- CSPs do not need to be regulated in the same manner as TSPs:
 As previously noted by the Ministry of Electronics and Information Technology (“MeiTY”), “cloud services”¹¹ are a “delivery model for information services”¹². CSPs provide information services to customers, and these information services are entirely distinct from telecom services provided by TSPs. CSPs use network infrastructure only for their own internal purposes – namely to connect their data centres to each other. Customers access the information services (i.e. the cloud

⁸ Rule 472, Indian Telegraph Rules, 1951.

⁹ Rule 472, Indian Telegraph Rules, 1951.

¹⁰ Para 4.8- “There is a requirement of telecom resources like end to end transmission bandwidth and dark fibers by different types of telecommunication service providers like VNOs, Cloud Service Providers, Multi-System Operator (MSOs)...”; Para 4.15- “Other telecommunication service providers such as Cloud Service Providers, M2M connectivity providers etc., who are presently...”, TRAI Consultation Paper.

¹¹ Pg. 29, GI Cloud (Meghraj) Strategic Direction Paper, MeiTY, April 2013, available at https://meity.gov.in/writereaddata/files/GI-Cloud%20Strategic%20Direction%20Report%281%29_0.pdf.

¹² Pg. 29, GI Cloud (Meghraj) Strategic Direction Paper, MeiTY, April 2013, available at https://meity.gov.in/writereaddata/files/GI-Cloud%20Strategic%20Direction%20Report%281%29_0.pdf.



services) provided by CSPs using network connectivity provided exclusively by TSPs. CSPs do not provide telecom services (e.g. internet connectivity) to customers. TSPs, and the telecom services they provide, are already heavily regulated, and these regulations adequately serve the purposes of protecting customers, maintaining public network security and integrity, and enabling the Government to monitor and obtain information on transmission of data (e.g., for national security purposes). Imposing additional regulations on CSPs would not create any additional benefit.

- CSPs are already extensively regulated under Indian law:
CSPs are already directly regulated by the MeitY, as indicated by the Allocation of Business Rules¹³. They do not need any further regulation by the DoT, MIB or any other ministry/department. CSPs are subject to regulatory requirements under different laws and policies, as follows:

(a) *Legislative framework*

- The IT Act regulates CSPs by prescribing obligations for data protection¹⁴, cooperating with government authorities¹⁵; and due diligence¹⁶.
- Since CSPs use e-contracts such as terms of use and click-wrap agreements, they must comply with the Indian Contract Act, 1872.
- CSPs will be subject to data protection obligations under India's forthcoming data protection law.

(b) *Government empanelment framework* - The MeitY regulates CSPs through their empanelment as government-approved service providers under its 'MeghRaj' cloud computing initiative¹⁷. CSPs must demonstrate compliance with standards on security¹⁸, interoperability¹⁹, data portability²⁰, service level agreements²¹, and contractual terms and conditions²² to achieve empanelment for the delivery of their services. Compliance by CSPs is verified through a rigorous audit conducted by the MeitY's Standardisation Testing and Quality Certification Directorate²³.

¹³ Pg. 51, Government of India (Allocation of Business Rules) 1961 (as amended up to 04 April 2019), available at https://cabsec.gov.in/writereaddata/allocationbusinessrule/completeaobrules/english/1_Upload_1829.pdf [MeitY- "Policy matters relating to information technology; Electronics; and Internet (all matters other than licensing of Internet Service Provider)"; "Promotion of internet, IT and IT enabled services"].

¹⁴ Section 43A, Information Technology Act, 2000 ("IT Act").

¹⁵ Section 69, IT Act.

¹⁶ Section 79, IT Act; Rule 3, Information Technology (Intermediaries Guidelines) Rules, 2011.

¹⁷ GI Cloud (Meghraj)- A cloud computing initiative of MeitY, available at <http://meity.gov.in/content/gi-cloud-meghraj>. ("MeitY cloud computing initiative")

¹⁸ Invitation for application/proposal for empanelment of cloud service offerings of CSPs, Ministry of Electronics and Information Technology, Government of India, available at <http://meity.gov.in/writereaddata/files/Application%20for%20Empanelment%20of%20CSPs.pdf>. ("MeitY CSP empanelment application")

¹⁹ MeitY CSP empanelment application.

²⁰ MeitY CSP empanelment application.

²¹ MeitY CSP empanelment application.

²² Guidelines for government departments on contractual terms related to cloud services, Ministry of Electronics and Information Technology, Government of India, available at, http://meity.gov.in/writereaddata/files/Guidelines-Contractual_Terms.pdf.

²³ MeitY cloud computing initiative.