

[Tata Communications Limited's response to TRAI Consultation Paper 'Regulatory Framework for Promoting Data Economy Through Establishment of Data Centers, Content Delivery Networks, and Interconnect Exchanges in India'](#)

Preamble

At the outset, we are thankful to TRAI for giving us an opportunity to submit our views and suggestions on various issues raised in the paper on Data Center, Content Delivery networks and Interconnect Exchanges in India.

Need for Conducive policy for the establishment and proliferation of Data Centre in India

India has developed itself into a global hub of IT/ITES Services and second largest country in terms of telecommunication service subscription. With the launch of 4G and efforts put by the Govt. and private operators, the proliferation of internet and broadband in the country is one of the fastest and largest in the world. India's data consumption is expected to be doubled to nearly 25 GB per person a month by 2025¹, driven by affordable mobile broadband services and changing video viewing habits. All the major Internet Giants are considering India as a focal point for the digital growth and heavily investing through strategic partnership with the telecom operators and establishing their own CDN/peering servers to fulfil the consumption habits of the Indian population.

The geographical location of India is apt to become the global hosting Centre due to the access and availability of International Connectivity through undersea cables. Further, India, not only consumes the humongous amount of content but also generates a lot of contents locally. These contents need local hosting to improve their accessibility and a favourable policy for the Data Centre providers will not only offer the hosting facility to various content providers but will also help the data localization in India. Thus, India can position and develop itself as a Data centre powerhouse with the right policy ingredients to address the fundamental requirements and challenges of the data centre industry.

The Government must provide a conducive policy for the establishment and proliferation of Data Centres in India. The Policy should promote setting up new data centres by providing incentives and resources to the Data Centre Providers. For example, the Data Centre Providers are offering the hosting services and does not own the data hosted in their centres. Thus, to ensure Ease of Business, they should not come under the purview of the Personal Data Protection Bill or any stringent regulatory framework.

Light touch Regulatory framework is required to safeguard the business interest of Home grown CDN players

The role of Content Delivery Networks (CDNs) is becoming very important with the increase in the data consumption and explosive growth of OTT platforms in India. CDNs help their customers from Media, Enterprise, and Software industry to deliver Video, Web content and software

¹ https://economictimes.indiatimes.com/news/india/indias-growing-data-usage-smartphone-adoption-to-boost-digital-india-initiatives-top-bureaucrat/articleshow/87275402.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

patches to their end users globally with high availability and performance. However, the CDN Market in India is dominated by Global CDN player. Moreover, dominant Global CDN Players, due to their significant market power, have been able to adversely impact the growth of home grown CDN players. The Global players use their cheaper international routes to deliver a portion of the India traffic to reduce their costs.

In view of above business practices adopted by Global CDN players, we strongly recommend that a light touch regulatory framework having registration mechanism in place for CDN services should be introduced which would help in creating level playing field for local CDN players. There is also a need for policy intervention for ensuring that for the content generated and delivered in India, Customer should be mandated to leverage 50% of CDN services from an India originating CDN Service Providers to promote the orderly growth of Indian CDN Market.

Further, it is also required to ensure that domestic content should not be routed outside India via CDN networks and then re-routed back to India.

No need for separate regulatory framework for operating IXPs in India and only valid Licensed Service Providers having UL-ISP / Standalone ISP /UL-AS licenses to establish and operate Internet Exchanges

As Internet Exchange Point (IXP) is a framework for Internet Service Providers (ISPs) to peer and exchange IP traffic with each other. In such internet exchange activity, messages are switched from one licensed service provider to another service provider for which license is necessary under section 4 of the Indian Telegraph Act, 1885. Moreover, there are provision made under the Unified License – Internet Service Authorisation which covers the activities of Internet Exchange by ISPs for handling traffic of other ISPs. Therefore, we are of the view that the there is no need for separate regulatory framework for operating IXPs in India and only valid Licensed Service Providers having UL-ISP / Standalone ISP/UL-AS Licenses can establish and operate Internet Exchanges in India.

Further, there is a need to ensure that there is a level playing field between the ISPs/UL ISPs who are establishing and operating Internet Exchanges in India and other ISPs/UL-ISPs providing only internet service in India. Hence, ISPs/UL-ISPs providing Internet Exchange Services shall be subjected to same license obligations to provide the Internet Exchange Services in India as other ISPs/UL-ISPs are obligated under the ISP/UL-ISP terms and conditions and all associated compliance requirements under these licenses. This is must for a level playing field between IX operators and other ISPs/UL-ISPs. Some of the key aspects related to level playing field, national security issues and compliance by the Internet Exchange (IX) operators that shall be complied by the IX operators in similar way as by other ISPs/UL-ISPs

In view of above background, please find below Tata Communications response on the issues raised in the consultation paper.

Issue wise response:

Q.1: What are the growth prospects for Data Centres in India? What are the economic/financial/infrastructure/other challenges being faced for setting up a Data Centre business in the country?

Tata Communications Response:

India is a pioneer in the ITES, and the market is continuing to be in its growth trajectory. With the substantial youth population coupled with a sizable number of IT skilled human resource, India has an immense appetite to offer the ITES services to the world. To support the ITES market and to serve the global businesses from India where more and more data are getting generated, Data Centres are an integral part of the solution to fulfil the ITES market demand. Moreover, the policy framework should ensure that the organisations, who are providing various cloud-based services in India should host their data in India.

As per IDC estimates², by 2025, worldwide data will grow 61% to 175 zettabytes (175 Trillion GB), with as much of the data residing in the cloud as in data centers. The storage industry will ship 42ZB of capacity over the next seven years, 90ZB of data will be created on IoT devices by 2025. By 2025, 49 percent of data will be stored in public cloud environments and nearly 30 percent of the data generated will be consumed in real-time by 2025. The explosion in cloud-based data will be matched by an increase in data stored in the core, or data centers. IDC says businesses are looking to centralize data management and delivery, as well as to leverage data to control their businesses and the user experience. Most of this, comprising both consumer and enterprise data sets will flow through or be stored in Data centres underscoring their criticality in the digital ecosystem. With world leading parameters in digital adoption and consumption and growing at rapid clip, Data centres' importance in supporting India's \$1 Tn digital economy goal cannot be overemphasized.

Government of India has already recognized the importance of Data Centres in the growth of digital economy in India and Ministry of Electronics & Information Technology (MeitY) had issued the draft National Data Centre Policy in November 2020 and is expected to formulate the policy in near term.

In our view of above background, following can be considered as the fundamental challenges in the growth of data centres in India:

Availability and ease of access to critical requirements:

The key input parameters for establishing a data centre are suitably located and sizable land, primary and backup power with uninterrupted supply and telecom connectivity. The location of data centre depends on the requirements come from the data centre users (end customers) and hence availability of suitable land considering the potential customer's choice of location becomes

² <https://www.networkworld.com/article/3325397/idc-expect-175-zettabytes-of-data-worldwide-by-2025.html>

quite challenging and expensive. This has a downstream impact on the overall commercial attractiveness of India as data centre.

We would like to suggest that to facilitate the Data Centre operators in taking informed decision about the land/area for new Data Centre projects, some mechanism should be created which proactively identify areas of high-risk seismic zones or prone to flood during the monsoons. Such areas may be marked so that Data Centre providers are aware of the same while deciding on establishment of their Data Centres.

While India has significantly improved its power generation capacity over the last decade, however, availability of continuous power in the right quantum at the required locations is a challenge with poor transmission & distribution infrastructure and significant variance in state laws including for that of open access for green power. Backup power which is critical for the redundant architecture of data centres is increasingly a challenge.

The third key requirement to enable the Data Centre services is the connectivity. With the impetus on proliferation of broadband, the fixed connectivity (over fiber) is getting improved. However, the ROW rules which are state/local authorities driven, creates significant challenges in terms of laying the fiber infrastructure which is necessary for the connectivity of data centres.

Policy coverage, certainty, uniformity, equal applicability and enforcement

For most part, data centres have been registered under IT/ITES policies across states and in the last 2 years, we have seen lots of traction from both Central Govt. and some of the State Govt. to promote investment in Data Centre and to create an enabling policy. While it is a welcome step to see that data centres are being recognized as critical digital infrastructure however, there are certain evident areas of concern which need to be addressed for attracting the investment and growth in data centre market:

- Single Pan India Policy instead of Different State based policies: MeitY at Central level and some states e.g. Haryana at State level have come out with draft policies for data centre. Other States are also considering and have or may have their own policies. While the intent of these steps/policies are positive, this may lead to further heterogeneity in terms of incentives, norms, applicability and eligibility with significant variations between states and between States & Centre.
- Data centre operators are unable to avail policy benefits due to significant execution gaps in terms of implementation.
- With overlaps across multiple ministries and departments, norms applicable to data centres are applied by multiple bodies leading to unwarranted delays in execution/clearances

Ease of doing business across the data centre build and operate lifecycle

One critical challenge faced by data centre operators is in terms of ease of doing business. Multiplicity of clearances required across the design, build and operational phase hamper construction timelines and operations. The clearances and compliances with an overlap across multiple government departments/bodies lead to conflicting and cumbersome situation which delays the deployment and operationalization of data centres. Clearances typically exceed any stipulated timelines with lack of any mechanism for timebound deemed approvals for data centre projects. Hence, a ground level implementation of Single Window Clearance with a specified time line has to be implemented in order to facilitate the clearances for Data Centre services is necessary to create ease of doing business.

Capital intensive nature of the data centre business

Data centres are capital intensive investments with much of the investment being front loaded in terms of land, building, infrastructure. Rising cost of input parameters can increasingly strain the fiscal viability of the sector which would have a cascading impact on the sectoral investment outlook.

Q.2: What measures are required for accelerating growth of Data Centres in India?

Q.3: How Data Centre operators and global players can be incentivized for attracting potential investments in India?

And

Q.4: What initiatives, as compared to that of other Asia Pacific countries, are required to be undertaken in India for facilitating ease of doing business (EoDB) and promoting Data Centres?

Tata Communications Response to Q2, Q3 & Q4:

We would like to suggest the following measures and policies for the growth of Data Centre in India.

One Uniform National Policy

MeitY is in the process of drafting the National Data Centre policy which had come up for public consultation in Nov-2020 and has undertaken extensive industry consultation. We are of the view that Data centres should be governed under the National Data Centre policy being drafted by MeitY. This national policy, like ROW 2016 rules, should serve as the baseline policy applicable throughout the country whereas State policies, if any, should harmoniously co-exist with the national policy in terms of adding fiscal and non-fiscal competitiveness amongst the states. There should be a nodal agency at central level who would coordinate with States and act as single window system for Data Centre Service providers.

Uniform Applicability of Policy

We would like to suggest the following to create uniformity in the Data Centre policy and its applicability across the States/UTs:

- Data Centre to be considered as a physical facility/infrastructure which provides services to end customers and are operated by specialized Data Centre operators
- Data Centre Park/cluster should be considered more of a large tract of land earmarked specifically for the development of standalone Data Centres or Data Centre facility campuses as well as other supporting infrastructure like captive power plants, fibre network etc.
- The policy should be applicable to the overall Data Centre sector as a whole and not just designated Data Centre clusters/parks for the long-term health and growth of the sector.
- Incentives, if envisaged, under the policy should apply to all Data Centre facilities from where the services are provided by the operators to the end customers and along with Data Centre clusters/parks which are essentially campuses where Data Centres may be setup.
- Policy benefits should apply to Data Centre Service providers who intend to setup their own Data Centre campuses/parks in conformance with all policy related mandates outside of designated Data Centre zones.
- Adequate safeguards need to be incorporated for the optimal use of Government land allocated for Data Centre parks.
- Policy applicability should be uniform for all players and not mandate any cross-dependence of operator upon the developer for any procedural, infrastructural, fiscal or non-fiscal benefits.
- The policy coverage should not be restricted to upcoming investments and should be equally applicable on the existing data centre operators. This will ensure that investments made by existing operators are not adversely impacted in terms of commercial competitiveness and a level playing field exist between new investment and existing data centres.

Continuity of Benefits:

- Most existing Data Centres today are registered under the existing IT/ITES policies across states where a Data Centre policy does not exist. There have been challenges in availing benefits under the same which need to be addressed from an ease of doing business perspective. Importantly, it is critical to ensure smooth transition between policies and ensure benefit continuity, i.e., benefits proffered under previous policy regimes should be baselined and benefits envisaged under the new Data Centre policy should be over and above for the same category unless subsumed.

Ease of Doing Business

- Single Window Clearance: Timebound single window clearances for both pre-commencement and post commencement approvals, a specialized empowered desk for Data Centre projects for smooth clearance of approvals may be considered. Further, within the timeline, if clearance is not given (on no observation/objection provided) the same to be considered as deemed approved.

All pre-commencement statutory approvals like building plan approvals, Fire NOC, Pollution control board, Environmental Clearance, Occupancy Certificate etc. Presently, BPA and Fire related approvals are part of local municipal corporation or Industrial corporation, CTE/CTO clearances rest with Pollution control board and EC with Environmental impact assessment group. These approvals should be brought under single window clearance policy. All clearances sought should be considered deemed approved, if necessary, approvals are not received in 30 days.

Fire safety related approvals are dual layered owing to the mandatory requirement of special gas-based suppression systems alongside hydrants and sprinkler systems. This is required to be simplified into a one-time approval

List of clearances/approvals may be reviewed, and any duplication should be removed. Some clearances may also be considered as deemed approved or under self-certification from the data centre providers.

- Inclusion under Essential Services: Data centres support 24*7 mission critical services and are a critical enabler of the digital economy. In this regard, we welcome the Government decision to grant Infrastructure Status to the Data Centres in the Budget 2022-23. We are of the view that the infrastructure status given to the data centre industry will help companies in availing easier credit and managing resources as the industry seeks to expand outside top cloud regions. Further, we also request that the sector be clearly included and categorized under the Essential Services Management Act. Furthermore, with respect to operation of backup power, data centres should be unambiguously kept out of the ambit of divergent SPCB norms with respect to installation and operations of DG sets with a single applicable directive by the CPCB.

Land & Building Norms

- Land Availability: The policy on Data Centre should have necessary provisions to make the land/facilities available in the geographies where the demand/requirement exist from the customers. Further, these lands should be made available at commercially viable prices.
- Stamp Duty Waiver: 100% waiver incentive on Stamp duties on 1st and 2nd transactions should be allowed under the policy.

- Capital Subsidy: Data Centres are extremely capital intensive with a significant chunk of investments being executed upfront. Hence, it is necessary to extend capital subsidies to further improve commercial viability of the sector. A soft loan or low interest loan for data centre can also be envisaged.
- Building Code and Infrastructure Status: Data Centres should be categorized under the Building Codes/by laws. Further, the data centres should be accorded the infrastructure status (at par with Railway, Highways, power etc.) which would significantly impact the capital efficiency of data centre projects.
- Parking Norms: Presently, Data Centres are classified as office buildings under NBC 2016 and therefore a car park is mandated for every 100 to 200 sqft of Gross built up area leading to significant wastage of space and capital owing to the vastly different manpower requirements of Data Centres with respect to office buildings. We suggest that the mandated parking requirements to be linked to the size of the office space within the DC building and not the Gross built up area and not exceeding 5% of overall Gross built up area in case of Data Centre.
- Floor Space Index/ Floor Area Ratio (FSI/FAR) Norms: Upto 60% ground coverage for Data Centre facilities/parks and FAR/FSI be allowed upto 5. Further, space for storage of DG sets is not to be considered for computation of FSI/FAR. Multi-level DG stacking to be allowed with due Fire safety NoC without any impact on FSI/FAR. Moreover, basement parking, storage areas and rooftop chillers should not be computed under FAR/FSI.
- Setbacks & open space: DC Buildings are low on human occupancy & therefore people movement is quite limited & hence it does not require increased setbacks corresponding to increase in height of the building / overall covered area of the building. Presently, setback is higher of approx. 9m or 1/3rd of the height of building. This adds to the inefficiency of the building & needs to be re-looked / rationalized.
- Land Subsidy: We request that subsidy for land purchases to the tune of at least 50% of transaction value be extended for purchase/lease of land from state agencies.

Power

Issues related to power has been provided in response to Q. 17.

Connectivity

- Right of Way & Dial Before You Dig: Provisioning of right of way free of costs under single roof/window clearance system and making network and cabling information available prior to digging are requested.
- Improvement in overall fibreization and broadband connectivity: Despite the massive improvement achieved in terms of connectivity, overall broadband speeds and degree of fibrilization still requires substantial for improvement. The National Broadband Mission and

programmes like the BhartNet should be accelerated in public private partnership mode to translate into the ability for data centre providers to establish themselves at almost any location within the country. RoW charges applicable on TSPs/IP-1s for laying the dark fiber should be reduced considering the impact of fiber in overall economy of the country.

Other Incentives

- **GST Holiday:** A GST holiday window be considered for Data Centres under for a certain period to boost the investment and accelerate the growth of Data Centres. Also, GST reimbursement for existing operational Data Centres for the same period linked to fixed capital investment may be considered. Further, GST on building works is not eligible presently for Input Tax credit, hence we suggest that the GST component for the entire upfront and recurring capex be reimbursed at 100% for the 1st 5-10 years.
- **Property Tax:** We suggest that Property taxes for Data Centres should be equalised with residential rates to improve fiscal attractiveness for the operative period of the respective Data Centres. In addition, 100% waiver of property taxes for a specified period may be considered.

Laws on Data Localization/Protection:

- Data Localisation and Data protection laws spur the growth of data centres. The finalization of the PDPB with more clarity on restrictions on the transfer of data offshore or strong data privacy laws is recommended to provide further tailwind to the data centre sector with increased demand for local storage and processing.

We request TRAI to consider our above submission in its recommendations for the growth of Data Centre which enables the Data Economy. These suggestions, if implemented, even for a limited period, would certainly create the necessary impetus in attracting investment and proliferation of Data Centres in the Country.

Q.5: What specific incentive measures should be implemented by the Central and/or the State Governments to expand the Data Centre market to meet the growth demand of Tier-2 and Tier-3 cities and least focused regions? Is there a need of special incentives for establishment of Data Centres and disaster recovery sites in Tier-2 and Tier-3 cities in India? Do justify your answer with detailed comments.

Tata Communications Response:

The shift in Government policy with a focus on creating a digital infrastructure across the country is clearly visible in the NDCP-2018. One such strategy is to establish India as a global hub for cloud computing, content hosting and delivery, and data communication systems and services. There is an increased focus on establishment of digital infrastructure in Tier-2 and Tier-3 cities. With the advent of 5G and India's commitment to adopt and roll out 5G network, various use cases which require lower latency, ultra-high speed and massive M2M/IoT would require distributed computing and local hosting of contents and platforms to support Smart Cities, IoT,

industrial automation etc. COVID-19 has triggered the role and importance of remote working and sudden acceleration in transforming the traditional way of business into digital. This has consequently increased the requirement for digital infrastructure including regional and edge data centres.

Thus, in order to accelerate the digitization process and enablement of the same in tier-2/tier-3 cities we would like to state the following areas which require Government intervention and enabling policies:

- While Data Centre at major hub are required in large scale (capacity) to fulfil the existing and future requirements, the scale of capacity build in Tier-2/3 cities would be much lower which would affect the business viability. Hence, specific government incentivisation for such tier-2/tier-3 locations over and above those suggested in our responses to Q1 to Q4 should also be considered.
- Unavailability of uninterrupted power supplies, fibre network, clean water, quality land zones in proximity to customer locations is an essential requirement which are always a challenge for DC establishment and operations in Tier 2 and 3 cities.
- The power and telecom infrastructure remains a challenge for wider pervasiveness of data centres beyond major hubs. These need to be addressed for the sector on a focused basis for establishment and operations of data centres in Tier 2 and 3 cities.

Thus, the above critical issues should be addressed and necessary incentives to be given and measures to be taken so that the Data Centres can be established in tier-2/tier-3 cities and the growth of Data Economy can flourish across the country.

Q.6: Will creation of Data Centre Parks/Data Centre Special Economic Zones provide the necessary ecosystem for promoting setting up of more Data Centres in India? What challenges are anticipated/observed in setting up of new Data Parks/zones? What facilities/additional incentives should be provided at these parks/zones? Do give justification.

Tata Communications Response:

A Data Centre Park/cluster is more of a large tract of land earmarked specifically for development of either standalone Data Centres or Data Centre facility campuses as well as other supporting infrastructure like captive power plants, fibre and power cableways etc.

We would like to suggest that for creation of a Data Centre Parks should consider the following:

- Any National and State policy on creation of Data Centre Park should also take into account the stand alone (existing) Data Centres and applicability of any policy measures should encompass both type of establishment for the long-term growth of data centre sector.

- The establishment of such parks/SEZ/Zones for DC centres while provisioned for scale may have challenges in terms of disaster recovery and service continuity in case of a utility failure/any other disruption.
- Further, the scale of the power and water requirement concentrated in a specified area may hamper local communities in terms of availability of resources, hence, these should be considered amicably before finalising any area/zone of Data Centre Park to avoid any future problem regarding the resource availabilities.
- The primary driver for data centre locations is customer demand and there should be no mandate for policy applicability for specified data centre zones/parks. Data centre operators should be free to establish data centres completely driven by customers.

Q.7: What should be the draft broad guidelines to be issued for Data Centre buildings, so as to facilitate specialized construction and safety approvals?

Q.8: Is there a need to develop India-specific building standards for construction of Data Centres operating in India? If yes, which body should be entrusted with the task? Do provide detailed justification in this regard.

Q.9: Till India-specific standards are announced, what standards should be followed as an interim measure?

Q.10: Should there be a standard-based certification framework for the Data Centres? If yes, what body should be entrusted with the task?

Q.11: Should incentives to Data Centres be linked to the certification framework?

Tata Communications Response to Q7, Q8, Q9, Q10 & Q11:

At the outset, we completely agree with the observation made by TRAI in the consultation paper in para 2.62 and 2.64 regarding the NBC 2016 that it does not recognize data centre as separate category which has forced the data centre operators to implement the norms/codes prescribed for common office/commercial buildings which has been proven detrimental as it increases cost of operation and substantial building area gets unutilized.

The Indian economy is getting increasingly globalized and aligning itself with the world economy which is desirable to achieve the goal of becoming a trillion-dollar economy. The Global customers and their focus in India's market due to the growing demands and consumption of global players' services by Indian population is the key driver for the demand of data centres services and hence it is eminent for the data centre operators to follow well considered global standards to meet customer expectations.

The local building standards should recognize the unique requirements pertaining to data centres and should be amended appropriately. There are global standards like TIA942 / Tier Standards

from UPTIME institute which are followed world over by data centre customers & data centre operators. The adherence to the same should continue in order to meet the end users' requirement. In addition, we already have ISO 90001 standards on quality management, ISO 14001 standards on environmental performance enhancement and OHSAS 18001 standards on occupational health and safety management. This will enable the DC industry to fast-track growth and reduce time to market.

Therefore, we are of the view that India specific building / data centre certifications should not be mandated neither it should be linked to any policy measures/ incentives based on any India specific certifications. Instead of focusing on creating India specific standards, the immediate requirement is to improve the ease of doing business for Data Centre operators and creation of a National Data Centre Policy with alignment of Local/State policies with the national policy. Our recommendations/suggestions in this regard are covered in response to Q. 2- Q. 4 and Q. 5 above and may kind be considered.

We also suggest that instead of India specific standards/norms, Government should consider the adoption of globally harmonized standards and products instead of prescribing local standards and products as this will facilitate the Indian Data Centres to serve the global customers and support the above strategy of the Policy. We are a supporter and proponent of Atma Nirbhaar Bharat and firmly believe that real achievement of Atma Nirbhar Bharat would be when we reap the benefits of "Make in India for local & global markets".

Hence, India should adopt globally harmonized standards, enable interoperability, better performance & lower cost of equipment and devices leveraging open ecosystem & global economies of scale. It will help the Data Centre Providers in attracting international businesses which would make India a vibrant Data Centre Hub at global level.

Q.12: Are there any specific aspects of the disaster recovery standard in respect of Data Centres that needs to be addressed? If so, then provide complete details with justification.

Tata Communications Response:

We wish to submit that while there are no specific standards which specifically caters the disaster recovery data centres and various aspects, however, there is a common standard ISO 22301 which focuses on business continuity management framework, whereas service continuity process in data centres is adhered to the ISO 20000 standards.

Moreover, Data centre colocation service contracts have extensive and stringent SLAs with due penalties and recourse for customers and such SLAs vary significantly depending on the customer segment. Hence, we are of the view that there is no requirement of prescribing any Standard for DR sites which may be counter-productive for the sector.

Q.13: Whether trusted source procurement should be mandated for Data Centre equipment? Whether Data Centres should be mandated to have security certifications based on third-party Audits? Which body should be entrusted with the task? Should security certifications be linked to incentives? If so, please give details with justifications.

Tata Communications Response:

It is submitted that the applicability of the requirement of deploying equipment having trusted source in the network is for licensed service providers and Data Center services does not fall under the licensing framework. Thus, this requirement is not applicable for Data Centre Services. Therefore, it is recommended that only recommendary approach/guidelines may be issued for the procurement of major equipment categories along with verification of OEMs, however, same should not be mandated. Moreover, the Security certification which is followed in data centres is ISO 27001 and the same gets audited by various 3rd party auditors like BSI, Bureau Veritas etc.

We are of the view that instead of prescribing or mandating any requirement like 'trusted source', we suggest that the global/ISO security certification should be linked with availing of fiscal incentives as part of the overall data centre policy to encourage the adoption of global standards.

Q.14: What regulatory or other limitations are the Data Centre companies facing with regards to the availability of captive fiber optic cable connectivity, and how is it impacting the Data Centre deployment in the hinterland? How can the rolling out of captive high-quality fiber networks be incentivized, specifically for providing connectivity to the upcoming Data Centres/data parks? Do justify.

Q.15: What are the necessary measures required for providing alternative fiber access (like dark fiber) to the Data Centre operators? Whether captive use of dark fiber for DCs should be allowed? If so, please justify.

Q.16: What are the challenges faced while accessing international connectivity through cable landing stations? What measures, including incentive provisions, be taken for improving the reliable connectivity to CLS?

Tata Communications Response to Q14, Q15 & Q16:

Instead of considering this as limitation of Data Centre Companies, we would request TRAI to analyse the reasons/limitations which telecom licensees/IP-1s faces in building the necessary connectivity infrastructure to cater the requirements of the Data Centres.

TRAI in its previous recommendations (as mentioned in para 2.89) given on "Delivering Broadband Quickly: What do we need to do?" in 2015, has covered most of the problematic issues and had given recommendations like no License Fee on Data Centre revenue, national RoW portal etc., We are of the view that licensees should be incentivized in provisioning of fiber connectivity services to Data Centres, and we suggest that the license fee on the revenue from such fiber connectivity delivered to the Enterprises should be reduced or removed. This would facilitate the operators to create better connectivity, expand their reach to further lands and support the Data Centres in terms of their connectivity necessity.

The licensed telecom service providers (TSPs) should continue to create high-capacity network backhaul for Data Centres/ Data Centre parks as they are specialised in providing such

connectivity services. While Data centre developers and operators within the data centre parks should be allowed to use Infrastructure providers (IP) services to support customers hosted in the data centres, however, procurement of such services should be according to the telecom licensing provisions and from the licensed telecom operators to ensure national security and overall compliance requirement.

With respect to access to international connectivity, we would like to submit that the international connectivity and bandwidth cost is already below-cost due to intense competition in the market. The International Bandwidth cost is already very competitive. With the increase in the demand and new submarine cables landing in India in near future , the market factor will take care of the cost of bandwidth and hence there is no requirement to have any regulatory provision.

However, to further improve the international connectivity, the TSPs should be subjected to various incentivise (say rationalization in regulatory levies) and simplified approval process of CLS and further connectivity.

Q.17: Is the extant situation of power supply sufficient to meet the present and futuristic requirements for Data Centres in India? What are the major challenges faced by Data Centre Industry in establishment of Data Centres in naturally cooled regions of India? What are the impediments in and suggested non-conventional measures for ensuring continuous availability of power to companies interested in establishing Data Centres in the country? What incentivization policy measures can be offered to meet electricity requirements for Data Centres?

Tata Communications Response:

The availability of uninterrupted power supply is the most important factor in the operation of Data Centre and plays a vital role in the decision regarding establishment of Data Centre in a geography.

Key hubs for Data Center services like Mumbai, Delhi NCR, Chennai, Hyderabad, Bangalore continue to seek maximum requirement of Data centre due to presence of hyperscalers and enterprise customers and therefore the existing and new data centre operators are in the process of expansion and establishment of data centre facilities. This would substantially enhance the need of power supply in these hubs in near to mid-term.

The key lacunae in terms of power supply are the availability of adequate transmission and distribution Infrastructure. Considering the huge power demand which would further increase in the future, state transmission companies of all existing and upcoming data centre hubs have to significantly strengthen their 400 KV and 220 KV Transmission System (Transmission Lines and Sub-stations) to cater the requirement.

Data Centres in Cooled Regions:

The suggestion to create Data Centres in cooled regions of India has following major challenges

with respect to power availability, stability and overall security which are the practical limitations for the naturally cooled regions of India for Data Centre establishments. The naturally cooled regions of India are still under power deficit and these regions do not, on a relative scale, have robust transmission & distribution infrastructure apart from the means to quickly restore the transmission network in case of any failure due to its difficult terrain. Additionally, potential security factors (natural disasters etc.) could be a challenge in attracting DC investments in naturally cooled regions.

Incentivization to meet Electricity Requirement:

- Adequate grid power availability should be made for approved/registered data centre projects in India across various hubs/markets irrespective of the location. Separate pool/allocation should be assigned for Data Centre as per the contract and same should always be made available to meet the demands.
- There is a need to strengthen the power grid/distribution infrastructure. A minimum of 40-50 MW should be made uniformly available to all upcoming DC projects with the ability to scale up to 200-300 MW.
- Sanction of power should be as per the timeline and to be followed strictly as operationalisation of data centre have critical dependency on timely sanction of power supply. Data Centre policies should mandate the power sanction timelines. Also, upgrade/downgrade of power requirement and its process should be made simple and time bound.
- As rightly mentioned in the TRAI consultation paper in para 2.96, electricity charges alone contribute to over 50% of opex for a typical data centre operator hence a 20 year exemption on electricity duty be provided for approved/registered data centres. Similar exemption on transmission charges on consumed grid power be extended for a specified period.
- A partial reimbursement mechanism for power for a specified period be extended which will significantly aid improve commercial competitiveness and project viability.
- The process for conversion of the tariff regime envisaged under the policy should be seamless without bottlenecks and be handled by an empowered Data centre specific desk.
- Continuation of Industrial tariffs or Commercial Tariff (whichever is lower) under the present IT/ITES and Industrial schemes and automatic eligibility of existing Data centre units for the same.
- Given the critical importance of uninterrupted operations of Data centres which support mission critical services for the economy and the Government, redundant grid power feed is essential. We suggest that dual grid power supply be made available for all approved Data centres under the aegis of the policy.
- Stable power is a pre-requisite for effective Data centre operations and it is requested that due measures be taken to eliminate fluctuations and interruptions and ensure stability. Multiple

states like UP, Punjab, Haryana, Maharashtra, MP etc, DISCOMS does not provide quality power to consumers in perspective of voltage range, unexpected surge etc. This led to power fluctuation, impact of equipment life, sudden breakdown and running of diesel generator etc for longer duration. The high DG running led to pollute the environment by emitting more CO2 levels. It is recommended that quality of power supply should be within safe operating limit of +/- 5% of nominal voltage for 0.44 / 11 /22 /33 KV Voltage operating level.

- A distribution license shall enable Data centre operators to directly procure power from generation companies (including renewable power) without any qualifying restrictions and shall also improve the cost competitiveness from an end customer perspective. Hence Data centres should be accorded with distribution license within the Data centre campus be considered under the aegis of the policy and facilitate the Data Centre operators in contracting directly with the power generation companies.
- Currently, telecom sector is not getting rebate on electricity duty which DISCOM charging on month basis based on power consumption recorded for that month period. Telecom sector being an essential service, it should be 100 percent exempted from purview of electricity duty in monthly electricity bills.

The above suggestive measures should be considered and any policy on Data Centre should ensure that the suggested requirements can be facilitated for growth of Data Centres in India.

Q.18: Should certification for green Data Centres be introduced in India? What should be the requirement, and which body may look after the work of deciding norms and issuing certificates?

Tata Communications Response:

We are of the view that apart from the existing green building certifications/standards (LEED, IGBC), a well-defined framework towards reducing carbon footprint and Certification methodology for green Data Centres should be made part of the Data Centre policies which will encourage developers and operators to create more efficient infrastructure.

Q.19: Are there any challenges/restrictions imposed by the States/DISCOMs to buy renewable energy? Please elaborate. Please suggest measures to incentivize green Data Centres in India?

Tata Communications Response:

We would like to highlight following challenges and suggest mitigation measures for promoting the adoption of green/Renewable energy for Data Centre Operations:

Energy Banking

Energy Banking refers to the surplus renewable energy injected in the grid and credited with the Distribution Licensee post consumption set off in the same Time of Day (ToD) slot as specified in

Distribution Open Access Regulation. As per present regulations in many states, banking is restricted to daily or monthly. Additionally, energy banked during peak ToD slots can be drawn during off peak ToD slots but the vice-versa is not allowed. To facilitate the Data Centres, we suggest the following measures:

- To mandate banking on an yearly basis
- To permit the energy banked during off-peak ToD slots for usage in peak ToD slots

Renewable Energy Certificates (REC)

Renewable Energy Certificates (REC) are market-based instrument. As a buyer, it requires to go through the cumbersome process of registration with energy exchanges and requires sophisticated software applications. We suggest the following measures for simplification of purchasing the ERC:

- Mechanism for buying Renewable Energy Certificates (REC) is another option to pay off for Green energy which can be utilized by Data centre operators hence the process to avail REC should be user friendly and simplified.
- Enabling provisions for entering into bilateral arrangements with RE generators for RECs should be included

Blended Power purchases Agreement

At present, Commercial & Industrial(C&I) consumers procure Renewable Energy (RE) separately from Solar power plants and/or Wind power plants. In most cases, respective project developers set up these plants on separate land parcels and use separate power evacuation/transmission system for transmitting the produced RE to their C&I consumers. We suggest the following:

- Given that Solar and Wind energy generation are almost complimentary to each other, the “hybridization” of the two technologies would help enhance project viability, grid stability and promote optimum utilisation of land and power evacuation/transmission systems. This would also enable the enhancement of RE procurement quantum from individual power plants by Data centre operators

Charges with respect to Green power

Many states in India impose a slew of charges incl. Wheeling, Cross subsidies, Additional surcharges, state transmission utility charges etc which make green power uncompetitive. We suggest reduction on these charges to promote use of Green Energy by the data centre operators. Subsidy for setting up the RE power plants should also be part of the Data Centre Policy. Data Centre operators strive to develop renewable energy solutions to help achieve a net zero carbon footprint and enable the sustainable transition to a carbon free economy. Presently capital subsidies are available for Off grid solutions such as rooftop solar installations or solar agricultural pumps, etc.

It is suggested that a special incentive package aimed to provide capital subsidy and incentivizing data centre operators to develop utility scale grid connected RE projects. This will not only help in reducing the Green House Gases and contribute to The National Action Plan on Climate Change (NAPCC) but also reduces cost of energy purchase.

The Government should include the setting up of renewable energy plants in the land parcel for the Data Centre Parks. Also, the Government extend various financial and non-financial incentives to promote renewable energy apart from simplified procedures to set up such plants.

Open Access to purchase the Renewable energy from Market

Currently in multiple states like Delhi (DISCOM – NDMC), Mumbai Maharashtra (DISCOM – BEST), Hyderabad Telangana etc, Open Access (OA) is not allowed / permissible to purchase the Renewable energy from Market due to regulatory related restrictions in renewable energy sector. Open access should be allowed in these states with listed DISCOM to meet the power at affordable rate and reduction of CO2 emission offset to support planet under sustainability mission of company.

Q.20: What supportive mechanisms can be provided to Data Centre backup power generators?

Tata Communications Response:

Most leading Data Centre operators consumes a very high proportion of renewable energy source, however, given the technical and commercial unviability of existing solutions within shorter timeframes, a flexible path towards sustainable power backup including natural gas-based generators with complete alignment with sectoral requirements is required as part of the Data Centre policy.

However, till such technologies mature and achieve techno-commercial viability, to ensure the continuity of Data centre operations, DG sets should be allowed to operate as backup power infrastructure without any hinderance from state pollution control boards (SPCB) or Central pollution control board (CPCB). A clear policy led directive should be issued recognizing the unique importance of data centres within essential services so that the Data Centre operations remain out of the purview of various SPCB directives and an unambiguous mandate from the CPCB would be desirable to protect the data centres back up power source.

Q.21: Availability of Water is essential for cooling of Data Centres, how the requirement can be met for continuous availability of water to the Data Centres? Are there any alternate solutions? Please elaborate.

Tata Communications Response:

For the smooth operation of Data Centres, uninterrupted water supply is an essential requirement for cooling purpose. While technology shifts have occurred and usage of air chillers is the norm for new Data centres, water continues to remain a critical utility. Hence, we would like to suggest

that water supply to Data centres should be declared as special purpose supply and not be subject to any de-prioritization/interruption. The Data Centre Policy should have an incentive in form of subsidies to the Data Centre for establishing Water treatment plants, Rainwater Harvesting systems etc.

The Data Centres should be allowed to store water within their premise which can last for 6 to 7 days, and corresponding local governing water authority can ensure continuous supply. To ensure stringent conservation and optimization practices, Data Centre providers should be mandated to meet ISO14001 standard for environment sustainability and any incentive towards managing water resources should be linked to this standard.

Q.22: Whether the existing capacity building framework for vocational or other forms of training sufficient to upskill the young and skilled workforce in India for sustenance of Data Centre operations? What dovetailing measures for academia and industry are suggested to improve the existing capacity building framework, and align it with the emerging technologies to upskill the workforce in India?

Tata Communications Response:

Data Centre operations require a diverse range of technical skill sets encompassing multiple engineering disciplines like civil, mechanical, electrical, network, IT/computers etc. Given the growth of the sector, skilled manpower availability is projected to be a major challenge as highlighted by TRAI vide para 2.107 of the consultation paper. Towards this end, many Data Centre operators have created Centres of Excellence inside its Data centres and are pioneering industry-academia collaboration. We are of the view that special incentives be accorded to Data centre operators for promotion of specialized skill development and public-private partnerships in this regard be encouraged.

Q.23: Is non-uniformity in state policies affecting the pan-India growth and promotion of Data Centre industry? Is there a need for promulgation of a unified Data Centre policy in India, which acts as an overarching framework for setting Data Centres across India? What institutional mechanisms can be put in place to ensure smooth coordination between Centre and States for facilitating DC business? Do support your answers with detailed justification.

Q.24: What practical issues merit consideration under Centre-State coordination to implement measures for pan-India single-window clearance for Data Centres?

Tata Communications Response to Q23 & Q24:

Please refer our response to Q. 2 to Q.5 for above issues.

Q.25: Is there a need for Data Centre Infrastructure Management System (DCIM) for Data Centres in India? What policy measures can be put in place to incentivize Data Centre players to adopt the futuristic technologies? Elaborate with justification.

Tata Communications Response:

Presently, overall data centre management systems, tools and processes are implemented by all Data Centre operators in their data centre assets and are customised as per customer requirements which vary significantly. Hence, a National level DCIM is not necessary as it may hamper the customization of Data Centre resources and systems as per customer's requirement. Instead of a focus on DCIM, due focus should be given for the adoption of technologies like AI/ML and incentivization for the same may be prescribed in the Data Centre policies.

Q.26: What institutional mechanism needs to be put in place to ensure digitization of hard document within a defined timeframe?

Tata Communications Response:

No Comments

Q.27: Would there be any security/privacy issues associated with data monetization? What further measures can be taken to boost data monetization in the country?

Tata Communications Response:

No Comments

Q.28: What long term policy measures are required to facilitate growth of CDN industry in India?

Q.29: Whether the absence of regulatory framework for CDNs is affecting the growth of CDN in India and creating a non-level-playing field between CDN players and telecom service providers?

Q.30: If answer to either of the above question is yes, is there a need to regulate the CDN industry? What type of Governance structure should be prescribed? Do elucidate your views with justification.

Tata Communications Response to Q no. 28, 29 and 30:

The role of Content Delivery Networks (CDNs) is becoming significant with the increase in the data consumption and explosive growth of OTT platforms in India. However, the CDN Market in India is dominated by Global CDN player. Moreover, dominant Global CDN Players, due to their significant market power, have been able to adversely impact the growth of home grown CDN players. The Global players use their cheaper international routes to deliver a portion of the India traffic to reduce their costs.

Further, we wish to highlight that the large Global Cloud Service Providers control a significant part of the CDN market chosen by Indian customers, who are opting for Cloud services along with

CDN Services. This is due to the fact that most of the large global Cloud Service Providers, are having their own CDN services too and they prefer to sell the same as integrated service along with Cloud Services. These large Cloud Service providers, either bundle their own CDNs with their cloud services or provide the international CDNs as their choice of CDN partner. This market practice restricts the customer to avail the services, without leaving any choice for them to opt for the customer's preferred CDN Service provider. Indian CDN providers are not typically empanelled with the large Cloud service providers and/or the barrier to entry is too high to get empanelled with large Cloud Service providers who prefer to promote their own CDN services.

In view of above business practices adopted by Global CDN players, we strongly recommend that a light touch regulatory framework having registration mechanism in place for CDN services should be introduced which would help in creating level playing field for local CDN players.

We suggest the following policy and regulatory measures are required for orderly growth of Indian CDN players:

Geo specific regulations: CDN service providers should be subjected to a very light touch regulatory regime in India so that some kind of level playing field is established between Global CDN players operating in India vis-à-vis India based CDN players. In the era of atma-nirbhar Bharat and vocal for local, there is need to promote local CDN players for vast Indian content which is being created. Therefore, there is a need for light touch regulatory framework wherein Registration of CDN players should be mandated with DoT as is being done in case of M2M Service Providers.

Cloud Service Providers: Regulation should provide large Cloud Service Providers to also promote Indian CDNs along with their empanelled CDNs and provide level playing field to India based CDN Providers. Soft -touch regulatory support is required for guiding Global Cloud Service Providers, to ensure empanelment of Indian CDN Service Providers and flexibility should be there for the end customer to either opt for an empanelled CDN provider or bring its own preferred CDN provider as they give a bundled offering to their Indian customers.

Network: There is also need for intervention required for necessary guidance for India MNOs to support Indian CDNs Service Providers for caching nodes and capacities on equal terms & conditions as offered to the International CDN Service Providers.

Content Generation and Traffic Delivery: There is a need for policy intervention for ensuring that for the content generated and delivered in India, Customer should be mandated to leverage 50% of CDN services from an India originating CDN Service Providers to promote the orderly growth of Indian CDN Market. Further, it is also required to ensure that domestic content should not be routed outside India via CDN networks and then re-routed back to India.

Q.31: In case a registration/licensing framework is to be prescribed, what should be the terms and conditions for such framework?

Tata Communications Response:

As suggested in our response to Q.28-30, a light touch regulatory approach should be prescribed for the CDN services in form of registration/authorization which would outline the necessary terms and conditions for operating a CDN services in India.

Q.32: What are the challenges in terms of cost for growth of CDN? What are the suggestions for offsetting such costs to CDN providers?

Tata Communications Response:

A CDN will typically require investment in building a Software stack and Rack, Power, Space and Hardware. These are available in India at fair prices, and CDNs have choices amongst various data centre providers for rack, space and power. So, in our opinion there is no major challenges in terms of cost for deployment of CDN services.

We would also like to submit that the connectivity charges i.e., NLD charges and DLC (P2P) link charges are not a barrier or a constraint for any ISP to connect with the CDNs or IXs at the data centre. In India, the NLD services are highly competitive due to the presence of integrated service providers (having access services, ISP, NLD, ILD licenses/authorizations) and stand alone NLD service providers. Also, in the last exercise conducted by TRAI to review the DLC tariff, the existing ceiling has already been reduced substantially. Moreover, in major centres, TRAI had itself observed that the tariffs were offered at highly discounted rates. Hence, we do not see the NLD/DLC tariffs as a constraint in the growth of CDN services in India.

In fact, the Indian CDN players, who are also Category A ISPs, are facing challenges in terms of getting the collocation services in the POP's of other MNOs due to the entry barrier created for competition reason. While Global/foreign based dominant CDNs /Cloud Service Providers are given collocation and access by local MNO at a preferential price or at no cost, the same treatment is not been extended to Indian CDN players thereby creating a non-level playing field. This puts Indian CDN players at a disadvantageous position in the Indian CDN market against International CDN providers who are encouraged to co-locate their CDN PoPs within MNOs Data Centers or networks. Hence, we suggest that the regulatory framework for CDN should ensure the level playing field and non-discriminatory treatment by the MNOs towards Indian CDN players.

Q.33: Do you think CDN growth is impacted due to location constraints? What are the relevant measures required to be taken to mitigate these constraints and facilitate expansion of ecosystem of Digital communication infrastructure and services comprising various stakeholders, including CDN service providers, Data Centre operators, and Interconnect Exchange providers expansion in various Tier-2 cities?

Tata Communications Response:

TRAI has rightly pointed out on the issues such as need for large and uninterrupted power supplies; availability of fiber network and necessary ecosystem are challenges in the growth of CDN business in tier-2 locations. Thus, incentive schemes should be given to set up the requisite infrastructure to facilitate the expansion of ecosystem of Digital Communication Infrastructure and services like CDN in tier 2 cities. These incentives can be in terms of nominal RoW cost for laying of fiber network, incentivizing the TSPs/ISPs in terms of License fee on the revenue earned

through their fixed network, subsidized electricity price and exemption of 100 percent electricity duty from state electricity board and making available the land, water etc. at subsidy to the investors who would create necessary infrastructure to facilitate the CDN services in India's tier-2 cities.

Q.34: What measures can be taken for improving infrastructure for connectivity between CDNs and ISPs, especially those operating on a regional basis?

Tata Communications Response:

As submitted in our previous response to Q 33, the incentives in terms of ROW cost and license fee payable on the revenue from the fixed network should be implemented to improve the infrastructure connectivity and proliferation of broadband so that the connectivity between CDNs and ISPs can be improved at regional level (tier-2, tier-3 cities).

Q.35: Is there a need to incentivize the CDN industry to redirect private investments into the sector? What incentives are suggested to promote the development of the CDN industry in India?

Tata Communications Response:

While we agree that incentives to be provided for the growth of CDN industry so that it attracts more private investment, however, creating a level playing field, non-discriminatory access to co-location facilities of the MNOs etc. should also be required to ensure so that Indian CDN players can also become competitive, both in terms of attracting investment and providing CDN services to various entities in India.

Q.36: How can TSPs/ISPs be incentivized to provide CDN services? Please elucidate your views.

Q.37: Are there any other issues that are hampering the development of CDN Industry in India? If there are suggestions for the growth of CDNs in India, the same may be brought out with complete details.

Tata Communications Response to Q.36 & Q37:

Indian origin CDNs are very few and have strong competition from Global CDN Service Providers. The large International (Global) CDN Service providers dominate the Indian CDN market due to the significant market power, have been able to adversely impact the growth of home grown CDN players. They have economies of scale due to which they are able to take much more business from International OTT players and India OTT players.

In view of the above, we are of the view that Indian origin CDN players need to be incentivized and should be protected from the non-level playing being created. If an ISP providing CDN services, then the said ISPs should be allowed equal access of co-location facilities by the MNOs as they provide such access to large CDN players. Thus, A light touch regulatory framework

having registration mechanism should be in place for CDN services would help in creating level playing field for local CDN players.

Further, there is also a need for policy intervention for ensuring that for the content generated and delivered in India, Customer should be mandated to leverage 50% of CDN services from an India originating CDN Service Providers to promote the orderly growth of Indian CDN Market. Further, it is also required to ensure that domestic content should not be routed outside India via CDN networks and then re-routed back to India.

Also, please refer our response to Q.32 and Q. 33 for more details.

Q.38: Do you think that presently there is lack of clear regulatory framework/guidelines for establishing/operating Interconnect Exchanges in India?

Tata Communications Response:

As Internet Exchange Point (IXP) is a framework for Internet Service Providers (ISPs) to peer and exchange IP traffic with each other. In such internet exchange activity, messages are switched from one licensed service provider to another service provider for which license is necessary under section 4 of the Indian Telegraph Act, 1885. Moreover, there are provision made under the Unified License – Internet Service Authorisation under para 4 “Network Interconnection” which covers the activities of Internet Exchange by ISPs for handling traffic of other ISPs. The relevant clause of the Unified License is reproduced as below:

4.1 The Licensee may establish direct interconnectivity with the network of other Internet Service Providers/Unified Licensee having authorization of Internet Service. The Licensee may obtain leased bandwidth from any other Licensee authorized to provide such bandwidth on lease.”

Thus if any ISP interconnects with multiple number of ISPs and facilitates exchange of traffic amongst these ISPs, it acts as an IXP. Therefore, we are of the view that there is no need for separate regulatory framework for operating IXPs in India and only valid Licensed Service Providers having UL-ISP / Standalone ISP/UL-AS Licenses can establish and operate Internet Exchanges in India.

Q.39: What policy measures are required to promote setting up of more Internet Exchange Points (IXPs) in India? What measures are suggested to encourage competition in the IXP market?

Q.40: Whether there is a need for separate light-touch licensing framework for operating IXPs in India? If yes, what should be the terms and conditions of suggested framework? Do justify your answer.

Tata Communications Response to Q no 39 & 40:

There is a need to ensure that there is a level playing field between the ISPs/UL ISPs who are establishing and operating Internet Exchanges in India and other ISPs/UL-ISPs providing only internet service in India. Hence, ISPs/UL-ISPs providing Internet Exchange Services shall be subjected to same license obligations to provide the Internet Exchange Services in India as other ISPs/UL-ISPs are obligated under the ISP/UL-ISP terms and conditions and all associated compliance requirements under these licenses. This is must for a level playing field between IX operators and other ISPs/UL-ISPs. Some of the key aspects related to level playing field, national security issues and compliance by the Internet Exchange (IX) operators that shall be complied by the IX operators in similar way as by other ISPs/UL-ISPs are as follows:

- License Fee and Revenue Share as applicable for other ISPs/UL-ISPs.
- All Tax related compliances since settlement free peering is not allowed in India.
- National security related compliances:
 - Lawful Intercept and monitoring requirements.
 - Compliance to URL blocking instructions from DoT and various law enforcement agencies from time to time.
 - Compliance to Cyberthreat and other requirements from CERT-IN.
 - NATTING, Syslog, CDR, CAF & KYC related requirements.
 - surprise on premise visits for Bonafide use of service, privacy and security etc
 - Other reporting, DoT & Term cell inspection and audit requirements.
- Any national security related compliances arising due to ISPs without CDOT LIM and/or International Internet gateway doing peering at the IX platform with a non-ISP entity without having required mechanism to monitor the internet traffic as required under the ISP license guidelines connected at the IX platform and exchanging the traffic at the IX platform.
- Not allowing Foreign ISPs/Telcos/ Global Content Providers to connect to the IX platform with ISPs who don't have CDOT LIM/International Gateway. Currently only those India ISPs who have CDOT LIM and /or International Gateway can connect to an Internet Port outside India.
- Any other regulatory & tax compliances as peering between ISPs and non-ISP entities (ISP peering with OTTs/CDNs/ Enterprises is not allowed in India)
- Current interconnection/internet peering of entities (unlicensed or licensed with no LIM or International Gateway) with non-gateway license ISPs, internet exchanges and foreign telecom operators connecting at the IX platform has very high chances of internet traffic going unmonitored to the end users in India thus posing a very serious national security threat as well as pilferage of revenue to govt. exchequer.

Hence, we suggest that any IXP should be operated under a valid license i.e. ISP / UL-ISP to ensure various concerns as highlighted above and to maintain a level playing field.

Q.41: What business models are suitable for IXPs in India? Please elaborate and provide detailed justifications for your answer.

Tata Communications Response:

The business model permissible shall be under the ambit and subject to ISP/UL-ISP licence guidelines and authority shall ensure a level playing field between operators providing Internet Exchange Service and other ISPs/UL-ISPs providing internet services in India. Thus, IXP providers can operate in any business model provided that they are within the regulatory and licensing framework.

Q.42: Whether TSPs/ISPs should be mandated to interconnect at IXPs that exist in an LSA? Do justify your response.

Tata Communications Response:

No. TSPs/ISPs must not be mandated to interconnect at the IXPs that exist in an LSA or anywhere in India. TSPs/ISPs are providing Internet Services in India under ISP/UL-ISP/UL-Access licenses and are subject to compliance of the terms of these licenses. TSPs/ISPs have invested and continues to invest millions of dollars in capex and opex to build the internet network and associated infrastructure across India and within the city/metro/LSA and beyond. TSPs/ISPs are providing Internet Service to various downstream ISPs, Enterprises, OTTs, CDNs etc and this is the sole source of revenue for them which they reinvest to grow the internet network and infrastructure network in India and beyond and thus being the most critical entity in the entire internet ecosystem to help proliferate the internet and digital economy in India.

Mandating TSPs/ISPs to interconnect at the IXPs that exist in an LSA or beyond is tantamount to providing free ride on the network of these TSPs/ISPs (at their cost) to the enterprises/CDNs/OTTs/ISPs who also connect at the IX platform and are also customer of TSPs/ISPs for the internet Service. Currently TSPs/ISPs are providing internet services to other ISPs/TSPs, enterprises, CDNs, OTTs etc and it is not mandatory for anyone to buy internet service from any one particular TSP/ISPs. Internet ecosystem best grows, proliferate and evolves without any regulatory interference under the ambit of market forces and free economies. Buying or selling internet services by TSPs/ISPs and/or peering between TSPs/ISPs/IXPs is subject to market forces and bilateral technical & commercial considerations among themselves and is purely based upon mutual benefit among the parties. Any such mandate will also create non level playing field at the cost of TSPs/ISPs and will be grossly unfair and uncompetitive. TSPs/ISPs will have no incentive to continue to invest in internet network and infrastructure in India and such move will be counterproductive and against the core spirit vis a vis objective of this consultation paper to grow data and internet economy in India.

Thus, interconnection of TSPs/IXPs at the IXP at LSA level or beyond must be solely based upon voluntary decision of TSPs/ISPs driven by the market forces and their network & business requirements.

Q.43: Is there a need for setting up IXP in every state in India? What support Govt. can provide to encourage setting up new IXPs in the states/Tier-2 locations where no IXPs exist presently?

Tata Communications Response:

There are several TSPs/ISPs providing internet services at national, state and city level. Setting up of IXPs in every state in India or otherwise shall be solely based upon the market requirement and techno commercial viability. Government must ensure level playing field between TSPs/ISPs providing internet services and ISPs/UL-ISPs setting up Internet Exchanges and let the market dynamics play its role in creating the necessary infrastructure and setting up of IXP at various locations in India.

Q.44: Whether leased line costs to connect an existing or new IXP is a barrier for ISPs? If yes, what is the suggested way out? What are other limitations for ISPs to connect to IXPs? What are the suggestions to overcome them?

Tata Communications Response:

No, leased line costs to connect an existing or new IXP is not a barrier for ISPs. ISPs can exchange traffic with internet by various means including buying internet service from its upstream ISP/TSP and/or doing peering with other ISPs/TSPs, apart from directly connecting at a valid IXP. ISP can also set up its own last mile infrastructure or set up its IP PoP at the IX point. Thus, an ISP has various means to connect to internet and exchange traffic and the decision depends upon the various technical and commercial considerations.

Hence, we are of the view that there is no such barrier exist in order to connect with the IXP for any ISP in India and this should be left to the ISPs to decide their option to interconnect with an IPX.

Q.45: Is the high cost of AS number allocation an impediment for small ISPs to connect to IX? If yes, what is the suggested way out?

Tata Communications Response:

For an ISP, to have a public AS Number and public IP addresses is a very basic and inherent requirement to provide internet services to its customers. IANA (The Internet Assigned Numbers Authority) assigns ASNs to regional Internet registries (RIRs), which are organizations that manage Internet number resources in a particular region of the world and assign to entities who want to have an AS number and IP addresses. We are of the view that it does not cost much to have a Public AS number from the RIR.

Q.46: What other policy measures are suggested to encourage investment for establishing more number of IXPs? Any other issue relevant with IXP growth may be mentioned.

Tata Communications Response:

Please refer our response on Internet Exchange issues provided in Q.39, Q40, Q 41 and Q 43.

Q.47: How can the TSPs empower their subscribers with enhanced control over their data and ensure secure portability of trusted data between TSPs and other institutions? Provide comments along with detailed justification.

Q.48: What is the degree of feasibility of implementing DEPA based consent framework structure amongst TSPs for sharing of KYC data between TSPs based on subscriber's consent?

Tata Communications Response to Q 47 & 48:

Tata Communications is a B2B Service provider serving to Enterprise Segment whereas the issues raised in above questions are more related to retail consumers/subscribers availing telecom services. However, we have following observations:

- The subscriber should be responsible for any updation / deletion of his/ her KYC information while his / her KYC information is being shared under DEPA based consent framework post recording his / her consent for data sharing. Subscriber should have option to update / delete the KYC information at time of intimation given to him / her before sharing of KYC data between TSPs.
- As suggested in the DEPA based consent framework would be acting as consent manager and responsible for obtaining the subscriber consent before sharing the KYC data from existing TSP to another TSPs. For any laps / non-compliance regarding sharing of KYC data without the consent of subscriber, existing TSP who has possess the KYC information of the Subscriber should not be held responsible in any manner.
- Existing TSP who has possess the KYC information and once subscriber optout from availing telecom services from that TSP and after receipt of confirmation from DEPA for providing KYC details of that subscriber who has given his / her consent for KYC information sharing, such TSP after transferring the KYC information of that subscriber to Consent Manager, should not be obligated to keep the KYC data and allow to purge such subscriber KYC data from its customer data base to avoid any further storage cost provided that the existing TSPs would continue keeping the KYC data if it is obligated under any Court Order/Direction of licensor/Regulatory or Designated LEAs.

Q.49: Are there any other issues related to data ethics that require policy/regulatory intervention apart from the issues that have already been dealt with, in TRAI's recommendations on the issue of 'Privacy, Security and ownership of the Data in the Telecom Sector' dated 16th July 2018 and the draft PDP Bill? Provide full details.

Q.50: Stakeholders may also provide comments with detailed justifications on other relevant issues, if any.

Tata Communications Response to Q 49 & 50:

No Comments.
