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Dated: 10.02.2022

To,
Shri Sanjeev Kumar Sharma, Advisor (Broadband and Policy Analysis)
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
JawaharLal Nehru Marg,
New Delhi – 110 002.

Subject: Response to Consultation Paper on Regulatory Framework for Promoting Data Economy Through Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India

Dear Sir,

This is in reference to TRAI's Consultation Paper (No. 10/2021) on Regulatory Framework for Promoting Data Economy Through Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India dated 16.12.2021.

In this regard, please find enclosed our response for your kind consideration.

Thanking You,

Yours' Sincerely,
For Bharti Airtel Limited

A handwritten signature in black ink, appearing to read 'Rahul Vatts', written in a cursive style.

Rahul Vatts
Chief Regulatory Officer

Encl: a.a

**Consultation Paper on “Regulatory Framework for
Promoting Data Economy Through Establishment of Data Centres, Content Delivery
Networks, and Interconnect Exchanges in India”**

Executive Summary

Internet and Digital services have become drivers of economic growth, digital transformation, and sustainability. These have been at the focus of policymakers for long; however, the Pandemic has provided an unprecedented acceleration to Digital transformation. Hence, countries worldwide are now increasingly treating Digital Infrastructure as a means of sustenance and growth, just as other crucial sectors, e.g. health care, agriculture, transportation, water, power etc.

Digital Infrastructure consists of two principal components- Telecom infrastructure (Networks) and Non-telecom infrastructure (Data Centres (“DCs”), Content Delivery Networks (“CDNs”) and Internet Exchange Points (“IXPs”)). Like other infrastructure, both telecom networks and DCs are capital intensive and require long term investment commitments which rely on two core tenets – first, favorable policies (to promote ease of doing and starting business) and second, regulatory certainty (for assurance about long term investment prospects).

As far as the Telecom Sector is concerned, there is an established regulatory and licensing framework wherein the Government grants a Unified License (“UL”) authorization under for provision of telecom services. The UL provides enough flexibility to accommodate service providers of any scale. For example, Internet Service Providers (“ISPs”) can provide services at the city level (under Class C license) and at a national level (under Class A license). The framework is based on the underlying principles of level playing field.

Hence, as far as telecom services are concerned, the licensed Telecom Service Providers (“TSPs”) / ISPs must continue to provide services under the respective licensing regime.

Our submission is that under no circumstances, the services provided under the scope of respective licenses should be permitted to be provided by unlicensed entities as this poses serious security risks apart from being a threat to investments made by TSPs and ISPs.

As Telecom and non-telecom infrastructure like DCs, CDNs and IXPs can play important role in growing digital economy of India, enabling and forward-looking regime would help drive this sector’s growth. In view of the above and in context of TRAI CP and questions raised, we recommend the following:

DCs:

- **For orderly growth of DCs in India, it is desirable to have a framework which would encourage the creation of state of art DC infrastructure in India by bringing in global best standards into operating guidelines within its ambit**

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- An all-encompassing single window system (for land, power, water clearances) integrating approvals from multiple authorities needs to be instituted.
- Feasibility for Dual Grid Supply/Sub-stations and more power on existing Line capacities
- Categorization of DCs under building norms as special purpose facilities for prioritizing approvals and allocation of resources to DCs.
- RoW from the point of presence (“PoP”) of the TSPs till the DC locations is the fundamental bottleneck in laying cost effective OFC: the TSPs should be given automatic RoW approvals where a DC has been approved or is operating
- Government & PSU verticals should be open to evaluating colocation, hosting at DCs to provide impetus to the business by creating incremental demand.
- We support a standards-based certification framework for DCs framed in consultation with stakeholders and recommend amalgamation of Uptime Institute & TIA 942 standards, which are the world’s most prevalent and mature practices.
- Government should address challenges around use of renewable energy sources for Telecom and DCs: Frame encouraging Open Access policies for use of renewable resources and remove various surcharges

CDNs:

- There is a need to prescribe some QoS parameters for CDNs under a light touch registration regime to avoid any failure, as any such malfunction could adversely impact significant traffic in turn effecting the digital economy.
- Commercial arrangements between CDNs and ISPs should continue to be governed by market forces and no regulatory intervention is required.
- CDNs are just a subcomponent of the internet ecosystem, the policy objective should be to incentivize ISPs for proliferation of internet services in the country
- Create a central portal where empowered bodies can directly submit their requests for blocking of internet content. Integrate portal with ISPs and CDNs through APIs to receive requests for blocking of content in an automated manner.
- Content either hosted in India by local entities or cached locally within India on the CDNs should be blocked by issuing orders directly to respective CDNs or any platform hosting the content in India or to the content providers.
- CDNs operated by unlicensed entities can be mandated to set-up their infrastructure in tier-2 and tier-3 cities based on a defined criterion (viz. Traffic quantum) so that internet customers in these cities can also enjoy better service experience.

IXPs:

- DC Under the IXP framework only the ISPs should place their equipment to peer with each other on the mutual commercial conditions
- The scope of IXPs should not be made to cover the services provided by the ISPs. The role of the IXPs should be limited to providing only a common location or a colocation place and related infrastructure akin to a DC facility.
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- **No content-to-content connect/peering should be allowed i.e. the end user should not be allowed to connect at exchanges, permitting this would be inconsistent with the licensing and regulatory framework (content ‘access’ to a user can be provided only by a licensed ISP)**

With the above background and submissions, please find below our response to the questions raised in the consultation paper

Q1. 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?

Airtel Response

Growth Prospects:

India is a pioneer in ICT and IT enabled services (ITES), and the ITES market continues to grow in India owing to the growth of Digital Services in India. With the sizable number of IT skilled human resources, India has an immense scope to offer ITES services to the world. Moreover, India is itself a huge market for data-based services with increasing penetration and usage of internet services. India has the second largest internet user base globally and has one of the highest per capita consumption of mobile data.

DCs are an integral part of ITES and **are expected to double by 2023-2024 and will have high double-digit growth from there onwards**. As highlighted in the Consultation Paper, that the Indian DC market size is projected to **reach USD 1.5 billion by 2022, growing at a CAGR of 11.4%, and is expected to reach ~\$5 billion by 2025**, which signifies the promising potential of the DC Industry in India and the significant value it will bring to the Indian economy.

As per NASSCOM report¹, the global datacenter market is expected to reach ~\$200 billion per annum by 2025, primarily driven by increased investments in hyper-scale datacenters amidst rising demand for cloud. Currently, India accounts for about 2% share in global datacenter investments. **Therefore, India has a huge potential to take a larger share of global datacenter investments if it is able to act fast on implementing the right policies since hawse already have significant cost advantage both in construction and operations; growing online market and international connectivity**; ample skilled workforce; and majority investments in Tier IV datacentres. We believe that following are going to be major drivers of DC Industry in India:

- a. Growth in Broadband internet subscribers through Telco investments in 4G/5G, leading to growing consumption of Digital Services

¹ <https://nasscom.in/knowledge-center/publications/india-%E2%80%93-next-datacenter-hub>

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- b. Technological developments like M2M/IoT, 5G, Applications, growth in OTT Services and increasing adoption of cloud services
- c. Technological/Market developments in DC industry, such as Edge DCs use cases, which will bring the digital services closer to the users
- d. Growing thrust on data localization due to security and cost benefits (from savings on bandwidth, skilled manpower cost savings)
- e. Data consumption per subscriber

India is at the cusp of next level of digital revolution, and it is imperative to have robust DC infrastructure to enable that. Therefore, to capitalize on the opportunity on the horizon, we need enabling Government policies to facilitate investment, establishment and proliferation of DCs.

Challenges in setting-up DCs:

- a. **Regulatory clarity- Civil building norms are not aligned with DC activities:** DCs due to their inherent technological aspects can be termed as a special category of buildings. However, the same is yet to be recognized as such, devoting them the due attention and benefits in terms of approvals and availability of resources.
- b. **Electricity and water supply, telecom connectivity:** Electricity, water supply and telecom connectivity are three most critical factors for reliable DCs’ operations. DCs require reliable electricity supply. However, there are continuing issues such as unreliable power availability and inconsistent architecture across states that continue to affect the Industry. Moreover, many states do not offer dual electricity connection at present. Dual supply of electricity would ensure reliable and continuous power availability.
- c. **Issues around sourcing sustainable green power:** DCs require reliable energy and are ready to source and deploy renewable energy sources. Given the targets of Government around green energy, it is important to encourage the sourcing and use of the same. However, few states apply additional charges for the use of green/renewable power. While the government has also issued Open Access (OA) to source renewable energy, there are certain state level restrictions that need to be looked into, and a uniform OA policy needs to be implemented across India.
- d. **Multiple states different approaches:** Different states are driving their policies for promotion of DCs in a different manner. However, for India to attract desired level of investments, an enabling **national framework** is required for development of DCs throughout the country. We believe that the TRAI should come out with a model DC policy for states to follow, and states should align their respective policies with it. Any deviations should be limited and duly justified.
- e. **Ineffectiveness of Single window clearances announced by many state governments:** Even though many states have announced single window clearances for setting up DCs, however

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on the ground, it still takes considerable time in securing approvals, which defeats the purpose of the integrated system.

- f. **Indefinite Approval Timelines:** It takes considerable time to secure approvals due to non-implementation of approval timelines or no provision of deemed approval, which causes huge construction lead times. Ultimately that also impacts cost.
- g. **Availability of Land at right locations within city zones:** DCs compete with other sectors for acquisition of resources like land, power etc. Location of DC is critical owing to its dependence on availability of telecom connectivity, power, water and above all demand of services. Availability of land with requisite resources remains a challenge.
- h. **Connecting network to DCs:** Connectivity is fundamental / prerequisite to deliver content experience. Telecom operators continue to face challenges in fiber deployment which are essential for connecting DCs. Challenges around Right of Way permission and fees, deployment of aerial fiber continue. Absence of time bound or deemed approvals lead to delay in projects. This challenge is applicable for both new and old DCs.

Q2. What measures are required for accelerating growth of Data Centres in India?

Airtel Response

We believe that for orderly growth of DCs in India, there should be a robust framework which should encourage the creation of state-of-the-art DC infrastructure in India, while bringing in global best standards into operating guidelines within its ambit.

Once above high-class standardization and framework is ensured, various fiscal and non-fiscal measures can be taken-up by various states to promote the growth of DCs.

The Consultation Paper already mentions some of these:

- a. Single Window Clearances for setting-up DCs.
- b. 100% exemption from stamp duty, transfer duty and registration fee
- c. Exemption on import duty for critical equipment of DCs
- d. Uninterrupted power supply
- e. Electricity duty exemptions for 10 years and electricity supply at industrial rates or at cost of generation
- f. Property tax to be levied at par with residential rates
- g. Exemption from local taxes/ other cess
- h. Allowing setting-up of DCs in any zone
- i. Allotment of Govt. land
- j. Allotment of Land at a subsidized cost

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- k. Exemption from provisions of factories act; Shops and Commercial Establishment Act; labor act, etc.

We believe that these can be considered for adoption of common policy at National Level for new as well as existing DCs (as applicable).

We further suggest the following measures to be adopted:

Measures for accelerating approvals and availability of resources:

- Effective Single window clearance system that should be all encompassing e.g. approvals for resources such as land, power, water etc. - so that service providers don't have to approach multiple authorities for permissions.
- Feasibility for Dual Grid Supply/Sub-stations and more power on existing line capacities (E.g. can existing 11KV line be upgraded to deliver more than 10 MVA power at site and be standardized across states)
- Preference to DC providers for providing real estate & other public infrastructure within specified timelines.
- Promoting manufacturing of critical mechanical and electrical equipment used in DCs under “Made in India” Policy. As part of DC policy, a PLI scheme for manufacturing this equipment in India would bring significant cost efficiencies and enable India to attract global DC players.

Increasing Demand for DCs:

- Government & PSU verticals should be open to evaluate colocation, hosting at DCs to provide impetus to the business by creating incremental demand.
- Thrust on data localization to catalyze DC Industry growth

Q3. How Data Centre operators and global players can be incentivized for attracting potential investments in India?

Airtel Response

We believe that once the concerns highlighted in Question 1 are addressed and measures suggested in Question-2 are taken, it will automatically incentivize the investments in the sector.

Like in other sectors, in DC sector also, resolution of many of the infrastructural issues will require support and active involvement of the States and even local administrations. **We recommend that for the effective execution of the proposed policy measures, a collaborative framework or a central agency should steer it. We already have an example of such collaborative mechanism in form of GST Council which has led to successful implementation of GST regime throughout the country in harmonious way.** A similar approach should be implemented to resolve infrastructure issues around DCs to accelerate their deployment. In

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fact, in order to address the issues related to RoW, TRAI has already recommended for the creation of ‘National RoW Council’ on the lines of ‘GST Council’

Q4. 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?

Airtel Response

In the Consultation Paper examples of various Asia Pacific countries like Singapore, Malaysia, Hong Kong and China have been cited for their successful DC Industry. Few key takeaways for the reasons behind their success are:

- a. Robust infrastructure, fiber/connectivity, skilled workforce
- b. Expedited approvals
- c. Lower Taxes
- d. Availability of suitable land
- e. Local demand (in case of China due to encouragement to digitization and adoption of technologies like Cloud Computing, AI and Big data)

In our responses to preceding questions, we have already listed various policy measures that can be adopted for incentivizing and facilitating setting-up of DCs. Over and above this, we believe following further steps can be taken:

- **Categorization of DCs under special building norms:** This is necessary for recognition of DCs as special purpose facilities and accordingly various public departments can be sensitized for prioritizing approvals and allocation of resources to DCs.
- **Ensuring dual and redundant supply of power and water connection:** Dual power and water connections to be allocated to DCs across all States (which is not the case currently) as these are two basic factors for reliable DC operations.
- **Special preference to DCs:** In any allocation/sale of resources (e.g. real estate, power etc.), DCs should be prioritized.
- **Awareness about DCs:** Awareness about the strategic importance of DCs is a pre-requisite for introduction of favourable policies and their implementation. Only when key stakeholders are aware about the role of DCs, they will be able to support the implementation of policy measures. It is generally seen that various public departments and general public, who can play key role in the success of DCs, are not aware about the role DCs are playing in the field of education, healthcare, e-commerce etc.

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Hence, the Government should run more public awareness/campaigns about the strategic importance of DCs in the nation building and its role in promoting and facilitating digital economy.

- **DCs Readiness Index:** Various states can be benchmarked on various parameters about their favourable policies w.r.t. DC sector. Notably, National Digital Communications Policy (NDCP-2018), **also proposed the formation of similar readiness index for Broadband in various states.**
- **Policy Review:** Since, DC sector is subject to competition from other countries like BPO sector, there should be periodic review of the DC policy to bring it at par with the policies of other countries to ensure that India continues to remain a preferred destination for Global DC operators.

We believe that the above steps will promote ease of doing business, reduce the risk for DC business and will attract global DC companies by ensuring higher reliability for facilities in India.

Q5. 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.

Airtel Response

The existence of a **facilitating ecosystem, comprising of Infrastructure (Land, Electricity, Telecom Connectivity and other civil infrastructure) and skilled human resource**, will be a crucial factor in attracting DCs to the Tier-2 and Tier-3 cities and least focused regions. We believe that once infrastructure issues are addressed, it would create an enabling environment for establishment of DCs in these areas. In his regard, we suggest as below:

- Improvement in Power Supply:** In India, creation of facilitating infrastructure like, highways and road connectivity, air travels, freight corridors are already on a fast track. However, the **availability and reliability of power supply should be improved using the smart grid systems.**
- Telecom Connectivity:** It is crucial to create incentives for telecom operators, who build facilities and provide connectivity to DCs, beginning with at least top 20-30 tier 2/3 Indian cities. The telecom operators should be given automatic RoW approvals where a DC has been approved or is operating. Since without telecom connectivity DCs have no value, RoW permissions should be immediate and affordable cost.

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- c. **Incentives by Creating Demand:** Incentives need to be introduced by creating more demand for DC services in these cities. In this regard, we suggest that **State level projects** like Smart cities, Smart traffic system, Smart metering system, and other government **projects should be allowed to operate using 3rd party Colocation space instead of building their own captive DCs**. This not only saves cost of local administration, but also generate enough demand to cater to private investments.

The above will create a viable business case for entities planning to build/expand Edge DCs. Though there is no doubt on the proliferation of edge related use cases and deployment at edge, but State/Centre Government projects should also seek colocation 3rd party space at least in State capitals or state economical hubs to create demand for DCs at these places.

Q6. 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.

Airtel Response

We believe that DC Parks in Special Economic Zones (SEZs) provide an opportunity of aggregating all components needed for DCs and benefit from economies of scale and will also provide benefit of superior and reliable infrastructure. We recommend that the following needs to be ensured for successful implementation:

a. Availability of Basic Infrastructure:

The basic infrastructure like access connectivity to location, reliable and scalable power connections, telecom connectivity and secure environment are the prime factors while setting-up DC facilities. Hence, the Government must ensure all these basic requirements are well planned and deployed before deciding and operationalizing these DC park locations at SEZs.

b. Location of SEZ for DC:

The selection of SEZ location for DC Park should be decided in active consultation with and inputs from the industry as this is a crucial factor for successful utilization of DC facility.

c. Incentives to TSPs:

The licensed telecom service providers (TSPs) should continue to create high capacity network backhaul creation in such DC parks. The RoW charges should be either free or nominal for TSPs to accelerate the telecom connectivity for such DC facilities.

d. Renewable Energy farms:

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We suggest that the DC Parks by default should have associated renewable energy farms dedicated to the DCs. It will give a push to the renewable energy sector in the country and reduce the dependency of the DCs on the conventional sources of electricity.

Q7. What should be the draft broad guidelines to be issued for Data Centre buildings, so as to facilitate specialized construction and safety approvals?

Airtel Response

Successful implementation of Digital India will rely on the successful implementation of DCs to provide secure, scalable & reliable services. Hence, **DCs should be categorized as the special purpose buildings for the recognition of their role in the growth and acceleration of Digital India.** As mentioned in the Consultation Paper, it will also save the unnecessary costs pertaining to the requirements based on personnel presence that are relevant to other commercial buildings but may not be relevant to DCs.

To realize the above, **we believe that following key aspects should be considered in the broad guidelines for DCs are:**

- Design as per Seismic standards
- Load bearing of floors
- Green design consideration
- Different Parking percentage depending on the use case,
- Height and Crash resistance parameter of the wall,
- Minimum benchmarking of physical & Electronic security standards to be deployed
- Integration with nearest fire, police station & hospitals to deal with any threat or untoward incident

Additionally, we recommend following specific standards to be implemented on a Pan-India level:

- Standardized FSI (Floor Space Index) Norms of >3 or 4
- Restricting Parking norms as per the need (suggested one Car park for every 600 Square meter build)
- Approval for multi-level DG Stacking within the campus (5- 6 levels for DG stacking)
- Online mapping of availability of space and related information at state and centre level

Q8. 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.

Airtel Response

Yes, there is a need to have a centralized agency to coordinate these activities via nodal ministry. We believe that DCs should get due attention and treatment as enablers of Digital

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India and for facilitating them, **India-specific building standards for construction of DCs should be developed by putting a dedicated section under National Building Code**; the objective of the same should be to meet the following:

- a. Single window and efficient clearances on a National Level
- b. Enablement of Economies of scale with ability to create replicable DC design
- c. Reassuring global investors in Indian DC Industry
- d. Building/Designing of all public services considering the requirements of DCs.
- e. Ensuring that the country’s security requirements, norms & other special conditions/requirements are abided to enable robust, consistent and uniform infrastructure across the country.

All the relevant stakeholders i.e. consultants and corresponding service partners, should adhere to the established norms while serving the DCs, to enable different layers of checks and ensure consistency in services.

MeitY / DoT with coordination of Ministry of Housing and Urban Affairs should **be entrusted for the enablement of the above framework & Standardization Testing and Quality Certification (STQC) can be entrusted for the audits** as they are already into evaluation & certification of public cloud & Government Cloud Computing (GCC).

Q9. Till India-specific standards are announced, what standards should be followed as an interim measure?

Airtel Response

We submit that **TIA 942 & Uptime Institute standards can be used** as both are mature standards and are prevalent in India and worldwide.

Q10. Should there be a standard-based certification framework for the Data Centres? If yes, what body should be entrusted with the task?

Airtel Response

We submit that **standard-based certification framework should be introduced in India**. The proposed standards can be **amalgamation of Uptime Institute & TIA 942 standards**, which are the world’s most prevalent and mature practices.

MeitY should be entrusted with the task of introducing this framework and SQTC can be entrusted to conduct the audits. This will facilitate Government and other agencies to trust and rely on the procedures of DCs so that they can avail co-location services from DC Providers.

Q11. Should incentives to Data Centres be linked to the certification framework?

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Airtel Response

We support the certification framework linked incentives for DCs as it will encourage the adoption of best practices and standards by DC Operators. For instance, green/sustainable design and operations should pave way for additional benefits for DCs.

Further, **any Organization using India Certified DC services should be able to avail financial benefits across direct or indirect taxes.**

Q12. 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.

Airtel Response

Three inputs are critical for DC uptime – **Power Supply (i.e. source), Water & Telecom connectivity.** Hence, for reliable operations of DCs, we recommend that:

- a. **Redundancy of Power and Water Supply:** There should be **availability of redundant/backup sources of power and water supply.** The central/state authorities should ensure that they have necessary infrastructure and policy to provide the same. In this regard, it is pertinent to mention that a few states provide tapping of power only from a single source and a single water connection.
- b. **Reliability of Power and Water Supply:** It is not only important to provide backup/redundant connections but the **connections should be reliable also and preferential treatment (in terms of downtimes) should be accorded to DCs** since these are critical for uninterrupted functioning of Digital Services.
- c. **Right of Way for Telecom Connectivity:** Lastly, all **Right of Way issues need to be resolved for connecting fiber to DC** and approvals to accorded on priority for laying fiber for telecom connectivity.

Q13. 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.

Airtel Response

We acknowledge that DCs should be safe both physically and logically. Trusted source procurement is primarily verification of supply chain of every installed active programable component.

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While the need to clearly understood however the **process of trusted source declaration is a time consuming process** and can delay roll out of DCs.

Hence, we recommend that rather than going through the entire process of trusted source, it would be prudent to declare the OEMs and their manufacturing locations from where products can be obtained.

Also, if at all this needs to be implemented, there should be a cut-off of at least 1 year in advance where the information of OEMs/products should be sought and only after the verification is complete, should this be implemented. The originator of the product request shall be OEMs and they shall be responsible to get necessary approvals.

Q14. 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.

&

Q15. 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.

Airtel Response

Regulatory limitations:

There are no regulatory limitations, for DC companies in setting up captive fiber connectivity as this can be achieved by them by taking relevant registration/license under the provisions of Indian Telegraph Act.

Any type of fiber connectivity (for captive or commercial purposes) can be established within the existing regulatory framework, which prescribes that any entity willing to lay dark fiber (across the buildings) should obtain IP-1 Registration and if it wants to operate a network (either for captive use or for commercial providing services) should obtain relevant authorization under Unified License (NLD or Access). The fiber deployment for captive purpose, within the buildings is even today permitted for DC operators.

Rights of Way (RoW) – the fundamental challenge in laying Fiber:

TSPs/IP-1 continue to face challenges in obtaining timely RoW permissions for rolling out optical fiber networks, either for DCs or for other purposes. The situation gets exacerbated due to challenges faced in the upkeep and maintenance of existing infrastructure due to damages

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caused to fiber during civil work related to Road maintenance, laying water pipes etc. The exorbitant RoW fee charged by various bodies makes fiber deployment uneconomical for TSPs.

While we do not believe there is any market failure in providing the fiber infrastructure to support DCs, it is more of a fundamental issue when it comes to RoW permission.

In nutshell, following **issues need to be resolved for improving the fiber connectivity for DCs across country:**

- Simplified, timely approval process for RoW with a Single Window Clearance
- In-fact, when a DC site has been decided, the RoW permission to TSPs / IP-1s for laying OFC should be automatic
- Rationalize RoW fee since it remains prohibitive across major cities.
- Policy to deploy fiber (both overhead as well as underground) by TSPs/IP-1s along the public infrastructure like electric companies or gas companies at agreed and published charges

Q16. 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?

Airtel Response

We believe that **there are no challenges in accessing the International Bandwidth as the International Bandwidth market in India is already very competitive.** With the increase in the demand, market forces will take care of the cost of bandwidth and hence there is no requirement to have any further regulatory intervention. **Any restrictive regime on cost of bandwidth will hamper the CLS business in India, which is an integral part of the International Connectivity.**

Further, as Authority has already mentioned in the Consultation Paper, major DC Developers are already investing in the submarine cables, which signifies that there are currently no impediments in making investment in submarine cables.

However, to further improve the international connectivity, the **TSPs should be incentivized (rationalization in regulatory levies) and simplified approval process for setting up and maintaining the Cable Landing Stations.**

Q17. 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

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the country? What incentivization policy measures can be offered to meet electricity requirements for Data Centres?

Airtel Response

Power Supply related challenges:

We have already highlighted that certain states do not allow dual power supply which is necessary for reliable DC Operations. Further, unreliability of power supply increases the challenges. Policies to source renewable energy should be simple, cost effective

DC in Naturally Cooled Regions:

a. Challenges:

As per the topology of India, the naturally cooled regions (such as hilly regions) lack the basic constituents required to plan and run the large DCs. The challenges emanate from:

- Lack of availability of large contiguous land parcels due to terrain of the region
- Lack of robust fiber connectivity, skilled manpower and reliable power supply.
- Limited local demand
- Limited access to such locations

b. Suggestions:

To improve the DC penetration in Naturally Cooled regions following provisions can be undertaken:

- Availability of open access to power
- Relaxed norms (such as free RoW etc.) for Telecom Operators,
- Creation of demand by serving States & Enterprise Digital Infrastructure at DCs.

On the basis of learnings from such projects, the models can be further evolved with further incentives and additional projects.

Q18. 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?

Airtel Response

We submit that **green certifications should be must for DCs, considering the high-power consumption at these locations**. MEITY & STQC should be entrusted with responsibility for looking after such certifications. Further, the adoption of Green building & Design principles should also be a must for building DC facility/Parks.

It is also suggested that **there should be minimum percentage of green energy enabled for operations after reasonable period of establishment of a particular DC**. This will attract global

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players to Indian DC market considering they too need to meet their sustainability targets around Greenhouse Gas emissions.

To encourage the adoption of renewable energy, incentives can be rolled for DC Operators, in case they exceed the minimum percentage consumption of green energy. It has already been mentioned in the paper that the incentive-based program has been successful in several countries in reducing energy usage and developing renewable energy solutions for powering the DC industry.

Q19. 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?

Airtel Response

Some of the challenges around renewable energy sources are as follows:

1. **Open access:** currently, only few states in India (e.g. Telangana) allow renewable energy sourcing via Open Access system.
2. **Surcharges:** there are surcharges and cross subsidy charges applied for drawing the renewable energy through Grids. This makes otherwise cost-effective rates of Solar/renewable energy challenging
3. **Banking of Renewable energy:** today many states do not allow use of renewable energy settlement during peak hours/months, thereby defeating the whole purpose of driving sustainable & green DC infrastructure.

We believe the following steps need to be taken for enhancing the adoption of renewable energy:

- a. **Procurement through Open Access Systems: All states should come up with Open Access policy and allow DC companies to source Renewable Energy via Open Access system.** This will be major enabler for DCs as it will open up multiple sources for procurement of renewable energy and will greatly encourage adoption of green energy.
- b. **Removal of Surcharges:** Cross Subsidy Surcharge and Additional Surcharge waiver should be given to DC companies to promote sourcing of renewable energy.
- c. **Banking for Renewable Energy** Banking should be allowed on financial year basis (i.e. throughout the year) and settlement of energy should be allowed on monthly basis irrespective of Time of Day/15 Minutes settlement.

Q20. What supportive mechanisms can be provided to Data Centre backup power generators?

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Airtel Response

As the DC Industry in India grows multifold, so will be demand for reliable power across the sector. Currently most the of High capacity DG engines are being imported to meet the demand. **We recommend that High Capacity Generator manufacturing must be promoted under “Make in India” policy with associated PLI schemes, or the DC operators may be incentivized to procure such HCGs manufactured in India. This will not only facilitate the DC Operators but will also promote the manufacturing industry in India.**

Q21. 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.

Airtel Response

As mentioned in the Consultation Paper, that an enormous volume of water is required to cool high-density servers and data racks, which is making water management a growing priority for DC operators. In this regard, we suggest that:

- a. **Availability of Secondary Water Connection:** Backup water connections are required for ensuring smooth DC Operations. However, it has been observed that **certain states as a policy do not allow secondary water line connection**. Therefore, **as a policy all states should allow more than one water connection for DCs**.
- b. **Bore Well Construction:** To deal with any unforeseen circumstances, **construction of bore well should be allowed**. It is also suggested that **Sewage treatment and rain water harvesting should be mandatorily included in such campuses and their designs**.
- c. **Incentives for alternate cooling systems:** To build an alternative efficient cooling ecosystem, **Liquid based cooling technologies should be promoted/subsidized/ evaluated and deployed** to reduce the consumption of water in DCs.

Q22. 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?

Airtel Response

Currently, there is a dearth of skilled resources in India for DC Operations. We believe that Public Private partnership could be promoted for providing affordable skill-based trainings and incentives could be introduced for operators for spending some minimum number of hours with educational institutions for imparting trainings. Further steps that can be taken as under:

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- Telecom sector skill council should be leveraged to generate skilled man force
- DC related curriculum should be added in all engineering disciplines.
- Centre of excellence and India based certification program should be developed to conduct trainings and curriculums for the new generation and workforce.
- There should be investment in DC Research & Developments (R&D) facilities wherein industry can work with government on developing/ assessing new technologies. e.g. In Singapore, most of new technology development is being led by technical universities with assistance from government/industry incentives.

Q23. 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 Data Centre business? Do support your answers with detailed justification.

Airtel Response:

As highlighted in the Consultation Paper, various states have formulated their own policies for promoting DCs. Even though some states have announced Single Window Approval Systems for DCs, however, on the ground, **effective implementation of Single Window Approval System and corresponding execution is yet to come in force**, as still the turnaround time for DC specific approvals is high.

Therefore, we see **a requirement of a central overarching policy for achieving uniformity and consistency across the state policies prevailing in country and the effective implementation of the policy on the ground.**

We recommend that DC polices should be mapped to certain central agency or system (similar to a GST council concept) for a better execution on the ground and for regular uniform updates to the policy. This will help in proliferation of DCs Pan India and also provide a neutral ground for technology partners and service providers.

Further, the **overarching DC policy should encompass all the facets of DC requirements** such as the building norms, enablement of power infrastructure and tariffs, green energy policy, water supply issues, efficient approval processes with provisions of deemed approval, certifications for DCs etc.

Q24. What practical issues merit consideration under Centre-State coordination to implement measures for pan-India single-window clearance for Data Centres?

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Airtel Response

As highlighted in responses to various questions, following pressing issues can be taken up for Center-State coordination for a Pan-India implementation of uniform policy:

- a. DC land & building norms.
- b. Automatic (and free of charge/nominal rate based) RoW permissions for DCs
- c. Standardized power infrastructure and approval process for DC
- d. Green Power and tariff policy
- e. Effective Single window clearances with deemed approval features

Q25. 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.

Airtel Response

Data Centre Infrastructure Management System (“DCIM”) is an important tool for automating large DC facilities and proactive monitoring and can be helpful in gaining the trust of global customers to host their data in India. Moreover, it will also help in optimal utilization of resources like power, water and space and help in improving the efficiency of various systems.

Once DC sector attains a scale in India, there will be utilization of a large pool of power & space under this industry vertical; in such scenario DCIM will help in providing better visibility of operations at DC level, City level & even help in deriving National Level statistics.

Q26. What institutional mechanism needs to be put in place to ensure digitization of hard document within a defined timeframe?

Airtel Response

An institutional mechanism will need to be scalable and reliable to ensure digitization in a sustained way. For this the digitization process should be easy for large scale adoption. The sustained value of digitization will lie in the quality of digitization. **To ensure digitization of hard document within defined timeframe, we suggest following:**

1. Drive adoption and ease of use where possible
 - a. Start digital first where possible so as to minimize document collection, conversion loss goes forward
 - b. Purging of hard copies should be allowed in cases where digital documents are available in central repositories
2. Key factors to ensure sustainability, usability
 - c. Conversion quality - Maintaining imaging standards (Image quality, resolution, depth, compression mechanisms)
 - d. Quality control - noise reduction

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- e. Collection management - High quality of metadata collection (like name, image description)
- f. Usage of industry standard data management practices
- g. Ensuring document authenticity during collection, digitization

Q27. Would there be any security/privacy issues associated with data monetization? What further measures can be taken to boost data monetization in the country?

Airtel Response

Digitized documentation allows for central document repository to exist. This allows for monetizing opportunity when an organization wants to store, retrieve the digitized document for administrative purposes. However, Digitization will enable easy access to highly sensitive citizen's data. Misuse of this data can be catastrophic. Identity fraud, financial fraud are some examples. This makes the data a high potential target for attacks. Thus, securing this data at all stages from sourcing to storing to retrieval is very critical. It is equally critical to validate authenticity of the data.

We suggest to create authorized centers for digitization wherein current infrastructure (Aadhaar kiosks, payments bank kiosks) could be used to digitize documents for the citizen.

To take care of security and privacy related concerns, an authorization/alerting mechanism should be put in place when a citizen’s data is accessed e.g. message alerts and information of agency/ enterprise accessing the information.

Further, the landscape of the telecommunications industry is changing rapidly. For TSPs, revenue from core voice and data services continues to shrink. TSPs today are looking to diversify, adopting alternative business models to generate new revenue streams. Telco’s, owing to their unique positioning in the ICT value chain, have access to arguably the deepest and richest insights into customers’ behaviors and usage. They are well positioned to enable digital ecosystems around emerging technologies such as artificial intelligence, Internet of Things and blockchain.

Data monetization is often misunderstood though it really means using data and analytics to improve business performance and profitability. Generally speaking, there are two ways companies typically monetize data:

- Indirect Data Monetization - using data to develop new business models and/or boosting operational performance

Direct Data Monetization - collaboration with 3rd parties

To boost to boost data monetization in the country, while preserving privacy of the individual, all data monetization initiatives need to pay heed to issues concerning intellectual property, logistical and technological delivery, security and privacy.

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Applications should not include third-party code that collects and analyses personal information to target users with advertising, without the active consent of the user. If third parties will collect or have access to user information for their own purposes, the user must be made aware at the earliest opportunity that their data will be shared, indicating:

- with whom it will be shared and for what purposes, and
- providing links to those third parties’ and their privacy notices.

Users must be allowed to choose whether to allow this collection, access and use by third parties. Users must be told about a material change to the way an application will collect or use their personal information, before such a change is implemented, so that they can make an informed choice about whether to continue to use the application.

In addition, businesses should get explicit recognition that anonymous data is not personal data and that pseudonymization can provide genuine safeguards without the need for consent. Regulatory bodies worldwide have introduced strict compliance mandates to control how businesses collect and manage data.

In India, TSPs are operating under a well-defined, robust and stringent regulatory regime with regards to data privacy and security. Further, TSPs are subjected to stringent financial penalties if there is any failure to comply with the same. Their core business of telephony services is regulated and governed by the license accorded by Central Government under Section 4 of the Indian Telegraph Act and they are under license obligations to collect, maintain and share personal data as per the directives of the Government issued from time to time.

As a TSP, the provider of personal data is given rights to edit/ correct his/her data provided to the service providers. The regulatory and judicial framework also provides for accommodating any changes to the personal data. The Unified License conditions prevent misuse of the personal data collected by a licensee. TRAI direction of 2010 also mandates the TSPs to ensure confidentiality of information as provided in the license conditions and to put in place appropriate mechanisms so as to prevent breach of confidentiality of information of the subscribers and privacy of communication.

We submit that, presently there is adequate regulatory oversight to ensure data privacy and data security of customer data as well as customer communication for the licensed service providers.

Q28. What long term policy measures are required to facilitate growth of CDN industry in India?

Airtel Response

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a. CDN is collaborative framework which has evolved and grown under Market Forces

Proliferation of broadband technologies and availability of affordable tariffs, have led to exponential growth in internet traffic. Today, internet is being used for accessing video and other multimedia content, which has put unprecedented load on the networks. In fact, video streaming was expected to contribute over 80%² of the Internet traffic by 2022. This has necessitated to bring content closer to the customers on the CDNs to improve quality of service by reducing latency, improving page load speed, better handling of high traffic loads and sudden peaks, reduced bandwidth consumption etc.

CDNs have emerged as a collaborative framework of Content Providers and Internet Service Providers as it helps both content providers (as they improve the accessibility of their content) and ISPs (in improving customer experience and saving bandwidth requirements). Since the benefits from CDN are mutual for Content Providers and ISPs, **we believe that commercial arrangements between CDN and ISPs should continue to be governed by market forces, and no regulatory intervention is required in the same.**

b. CDN is a critical determinant for Quality of Services

CDNs were expected to carry 72%³ of the total internet traffic by 2022; therefore, CDNs have become critical not only for growth of Internet but also for maintaining quality of services to consumers as **any failure or malfunction at CDN is likely to adversely impact the performance of the significant traffic on Internet.** As per recent experience, an outage in one of the CDNs⁴, impacted a number of websites throughout the world. The impact was widespread and affected users were spread across the world (not limited to a single ISP) which is unlike an outage in ISP network wherein impact is mostly confined to the users of that ISP.

To this effect, while ISPs are bound by regulatory conditions for maintaining QoS, the CDNs, operated by unlicensed entities, despite carrying considerable internet traffic still do not have any obligations on them for maintaining quality of services. Therefore, considering the huge dependency of digital economy (and Internet performance) on the **CDNs, it is necessary to put some obligations on CDNs, operated by unlicensed entities, for maintaining minimum quality of standards.**

² <https://whatsnewinpublishing.com/over-82-of-internet-traffic-will-be-online-videos-by-2022-how-publishers-can-scale-their-content-production/>

³ <https://www2.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2020/content-delivery-networks-video-streaming.html>

⁴ <https://www.thehindu.com/sci-tech/technology/explained-what-is-cdn-and-how-is-it-linked-to-the-massive-internet-outage/article34769398.ece>

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c. CDN is component in internet framework - Policy focus should be on improving overall Internet Access Penetration:

Even though CDNs carry significant internet traffic however they are just one component in the context of overall objective of improving the internet access to the customers. **The real challenge for country like India is to bring benefits of Internet to the unconnected population.** CDNs are benefitted by the revenue earned by Content Providers which is disproportionate compared to the infrastructure costs incurred in CDNs. On the contrary, revenue earned from creating the infrastructure for enabling internet access to the unconnected population yields marginal revenues for TSPs/ISPs which in many cases are unviable unless there is a subsidy support from the Government.

Therefore, **we believe that priority at this moment should be to increase the internet penetration in India by incentivizing TSPs/ISPs (in form license fee waiver etc.) as they have made substantial investments in not only increasing Internet penetration but also in meeting the security requirements of the country, such as ensuring bonafide use of the service and monitoring the internet traffic.**

Q29. 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?

Airtel Response

As stated in previous response, CDN is one of the components of internet that brings content closer the user in order to provide better quality of experience. Therefore, it should continue to be governed by market forces but with certain Regulatory obligation to maintain some minimum quality of standards.

We further submit that the content which is either hosted in India by local entities or cached locally within India on the CDN is within the Indian Jurisdiction. In such cases, **content should always be blocked by issuing orders directly to CDN or platform hosting the content in India or to the content providers. This would help in better control over security aspects and avoid duplication of efforts at multiple ISPs.**

In order to bring an element of efficiency and effectiveness in the approach, **the complete process of content/URL blocking should be automated to ensure better compliance and to reduce manual intervention.** In this regard, a central portal can be created wherein security agencies or other empowered bodies can directly submit their requests for blocking of Internet content. This portal will be integrated with ISPs/CDNs through APIs to receive requests for

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blocking of content in an automated manner. The proposed portal can be developed under the aegis of DoT/MeitY in a collaborative manner.

Q30. 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.

&

Q31. In case a registration/licensing framework is to be prescribed, what should be the terms and conditions for such framework?

Airtel Response

We suggest that CDNs, operated by unlicensed entities, can be brought under a simple registration framework for enforcing the requirement of quality of services, security and content blocking as mentioned in our replies to Question 28 and 29. The proposed framework should cover aspects such as downtime, presence in geographical areas as per threshold levels of traffic catered by CDN etc.

Q32. What are the challenges in terms of cost for growth of CDN? What are the suggestions for offsetting such costs to CDN providers?

Airtel Response

As mentioned in reply to previous questions, the business of CDN has evolved under the market forces and has benefitted content providers, ISPs and customers. **We do not believe that there any impediments to the growth in the CDN, which require regulatory intervention and CDN should be allowed to grow under the market forces.** Furthermore, CDNs earn their revenue from Content hosting and have to make limited investments as compared to ISPs/TSPs who are responsible for providing overall services to customer and hence have to make investments in network.

Hence, we believe that the **need of the hour is to attract investments in the telecom networks as these are the required for enabling the access to the end customers.** We reiterate that the **telecom operators need to be incentivized in form of license fee waivers and through resolution of RoW issues.**

With regard to aspects like **Peering, IP transit and NLD bandwidth** (for CDN) mentioned in the paper, we submit that **these should continue to be governed by market forces**, without any regulatory intervention. We believe that **there are no constraints in obtaining bandwidth due**

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to the availability of sufficient number of service providers. Any regulation on these aspects may severely impact the investments in the networks and may lead to either increase in consumer tariffs or reduced network roll out. This will be contrary to the overall objective of increasing the availability of internet access at affordable tariffs.

Q33. 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, DC operators, and Interconnect Exchange providers expansion in various Tier-2 cities?

&

Q34. What measures can be taken for improving infrastructure for connectivity between CDNs and ISPs, especially those operating on a regional basis?

Airtel Response

As submitted above, CDNs’ role is to bring content closer to the consumers, through the network of licensed telecom/internet service providers. Even though, various ISPs/TSPs have established their infrastructure in various tier-2/tier-3 cities to serve the customers, CDNs owing to their business decisions/objectives, have mostly concentrated their set-up to bigger cities.

Thus, it is essential that **unlicensed CDN providers should invest in infrastructure and set-up their CDNs in tier-2 and tier-3 cities as well so that Internet customers in these cities can also enjoy better service experience.** Therefore, **CDNs can be mandated to set-up their infrastructure in tier-2 and tier-3 cities based on a defined criterion (viz. Traffic quantum).**

Moreover, to facilitate the expansion of Digital services in tier-2 and tier-3 towns, we strongly believe that TSPs should be incentivized and RoW related issues be resolved to create a viable model for TSPs to provide connectivity.

Q35. 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?

&

Q36. How can TSPs/ISPs be incentivized to provide CDN services? Please elucidate your views.

&

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Q37. 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.

Airtel Response

We request the Authority to kindly refer to our responses to earlier questions. We reiterate that **CDNs are one of the components of overall ecosystem for delivering internet services to the customers** and have emerged under the market to facilitate better customer experience and optimize the functioning of Internet.

The **real policy objective should be to improve internet access penetration by incentivizing TSPs/ISPs which would automatically lead to investments in sub-components like CDNs.** TSPs/ISPs are not only required to invest in network and other internet infrastructure but also in security related infrastructure. The recent Cabinet reforms are a testimony of the importance placed by Government on the telecom networks, which needs to be complemented by further reforms and incentives to TSPs as the Industry continues to be in financial distress.

Therefore, we believe that **TSPs should be incentivized for rolling out additional infrastructure which will create further demand for content services thereby adding to the revenue of CDN Industry and will also bring benefits of Internet to the unserved population.**

Q38. Do you think that presently there is lack of clear regulatory framework/guidelines for establishing/operating Interconnect Exchanges in India?

Airtel Response:

In India, there is a clear regulatory and market structure for Internet services, **which consists two entities- a Customer and a Service Provider (ISP).** This is evident in license definition as well as the business model of ISP.

The current regulatory and corresponding market structure has been extremely successful model, as is evident by the huge number of ISPs prevalent in every state of India. Like in any other location across the globe, a lower Tier ISP buys the capacity from higher TSP/ISP. This is a universal practice and the peering of ISPs at a mutually acceptable commercial structure exists even now either at the ISP location or at exchanges.

The role of the exchanges in this framework **should be to provide only a common location or a colocation place (i.e. DC facility) where different ISPs can place their equipment to peer with each other on the commercial conditions mutually agreed.** The footprint of such exchanges should be increased so as to optimize the access cost for ISPs and for having more options.

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But it is important that such exchange points should only enable the peering arrangements among ISPs at mutually agreed commercial models, and thus the exchange should be restricted to provide only colocation and related infrastructure. By no means, the scope of such IXPs should be made to cover the services provided by the ISPs.

This means that no content-to-content peering should be allowed i.e. the end user should not be allowed to connect at exchanges/IXP for any content-to content peering as this would be inconsistent with licensing and regulatory framework (wherein the content ‘access’ to a user is provided by a licensed ISP) and thus contradicting the entire notion of user and a provider. Needless to mention, it will create a non-level playing field in market and will pose risks for security monitoring and investments.

However, if content is allowed to collocate at such exchanges, this should be allowed only to peer with ISP network to ensure all security requirements are met and the framework is operated within the regulatory framework.

Q39. 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?

Airtel Response:

We believe that the policy objective should be to facilitate peering between ISPs by promoting exchanges. However, the role of such exchanges should be restricted to provide only colocation space to enable ISPs to peer with each other on mutually negotiated terms. Therefore, we believe that the requirements of such exchange points are similar to that of DCs. Hence, once the policy initiatives are undertaken for promoting DCs, it will also encourage exchanges.

Q40. 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.

&

Q41. What business models are suitable for IXPs in India? Please elaborate and provide detailed justifications for your answer.

Airtel Response:

Kindly refer to our reply to Question 38 and 39.

Q42. Whether TSPs/ISPs should be mandated to interconnect at IXPs that exist in an LSA? Do justify your response.

Airtel Response

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Kindly refer to our responses to Q 38 and 39, we believe that the role of exchange points should be limited to providing collocation space. We believe that there should **not be any mandate to connect at exchange as it is a decision of ISP how it wants to peer with other ISPs**. Presently, there is no mandate on peering arrangement between ISPs and the market has grown substantially on its own; therefore, we see no reason for any mandate on interconnecting at exchanges. The peering between ISPs should continue to be driven by their respective requirements and it should be left to ISPs to decide the routing of traffic between them as per their operating requirements.

Q43. 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?

Airtel Response

Kindly refer to our response to Q 38 and 39.

Q44. 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?

Airtel Response

We believe that leased line market is highly competitive due to presence of multiple service providers and hence there are no impediments with respect to cost of leased line circuits.

However, in order to further increase the availability of lease line and other telecom services, we believe that the fundamental issue that needs to be addressed through policy measures is **ease of deployment of infrastructure by resolving the issues like RoW that adds significant time and cost to bandwidth. There is no need for any intervention in the market forces on how entities transact with each other for the procurement of resources like bandwidth.**

Q45. 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?

Airtel Response

We believe that the costs mentioned in the paper for allocation of AS number can be afforded by ISPs. Smaller entities choosing to operate on smallest of scale can obtain UL-VNO (ISP) to ride on the network of NSO.

Q46. What other policy measures are suggested to encourage investment for establishing a greater number of IXPs? Any other issue relevant with IXP growth may be mentioned.

Airtel Response

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Kindly refer to our response to Q 39

Q47. 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.

AND

Q48. 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?

Airtel Response

1. Giving subscribers enhanced control builds trust and also improves the quality of data. Therefore, at the heart of any framework is the Samhati/Consent to collect framework
2. There are four different models exist under DEPA⁵:
 - a. **Consent Management accounts or operators:** This model entails the operator to be an independent entity that just acts as a consent manager. They merely allow and manage data and consent flows to the data principal and data user. This is the model adopted by DEPA in the financial sector.
 - b. **In house model:** Here the operator and data user are combined. The data user understands the need for access to personal data and incorporates a consent manager along with the other services it provides to the data principal. This model has been adopted in the UK, but would not be suitable for the diversity of the Indian context, which would require constant innovation by consent managers to reach diverse user groups.
 - c. **Public Sector Model:** Public sector entities could offer a subsidized, low cost consent management service. This model could be appropriate for some sectors.
 - d. **Privacy based model:** Some Consent Managers may offer additional services with regard to data privacy and security. This could be a future avatar of Consent Managers in the DEPA framework

⁵ Source: DEPA handbook

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3. **Our recommended approach is a distributed ledger that is managed by a consortium with a consistent taxonomy. This has subscriber details, log of access and usage. This approach balances privacy and control.**

Q49. 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.

Airtel Response

In India, TSPs are currently subject to stricter requirements than the internet companies that provide similar services over the telecom infrastructure. The license provisions regarding collection and maintenance of commercial records/ Call Detail Record (CDR)/ Exchange Detail Record (EDR)/ IP Detail Record (IPDR) and the requirements for traceability of subscribers and the instructions and procedures for sharing customer details with the Law Enforcement Agencies (LEAs), provide a definitive framework on sharing the subscriber’s personal data.

Thus, Telecom Service Providers (TSPs) are operating under a well-defined, robust and stringent regulatory regime with regards to data privacy and security. Further, TSPs are subjected to stringent financial penalties if there is any failure to comply with the same.

However, the same rules are not applicable to other entities operating in the Internet ecosystem, that provide similar services over the telecom infrastructure. The current laws and regulations (including the Information Technology Act 2000 and the Information Technology (Reasonable security practices and procedures and sensitive personal data or information) Rules 2011 (the ‘Reasonable Security Practices Rules’) issued under the IT Act)) do not comprehensively safeguard the personal data of individuals. Therefore, the rules on privacy of customer data and its protection require a holistic review and should be uniformly applicable to all the players (both TSPs and other players) operating in the Internet ecosystem.

Any law pertaining to data protection should govern all the entities and individuals that collect and process the customer data irrespective of the technology and service being provided. A principle-based horizontal data protection law, in line with international best practices, will be the right approach to promote Digital Economy and Internet-based services. Such law will ensure non-discrimination and also become applicable to entities beyond the telecom sector.

Regulatory principles for the digital ecosystem should not single out TSPs by applying stricter requirements and should be based on applying the same principles for the same service,

**Consultation Paper on “Regulatory Framework for
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Networks, and Interconnect Exchanges in India”**

ensuring a single, consistently applied framework is in place covering all competitors/ecosystem players in the digital value chain regardless of technology or the type of provider.

There will be an opportunity to reassess this imbalance in the near future as the government considers the adoption of new Data Protection Act. However, in interest of overall policy objective of efficient regulation and the ease of doing business in the country, harmonization of laws is critical.

The Data Protection Bill as proposed is an omnibus legislation applicable across sectors. This poses significant challenges for closely regulated sectors like telecom, which already have established sectorial regulators such as the TRAI and who conduct business regulated by the license terms.

At present, the Bill requires consultation between the Data Protection Authority and such other regulator having jurisdiction. It is likely that the requirements under the Bill or any other prescriptions by the Authority may conflict with existing laws and regulation. This may also result in duplication of regulation and an unfair regulatory burden on such sectors.

The telecom being already a heavily regulated sector with numerous and several compliance requirements under various laws, which is further compounded by the pan India scope of the business and its status as critical infrastructure of national importance, requires deployment of large amount of resources and that incurs significant costs towards compliance. Indeed, some of the existing regulatory requirements are essential for the purposes of national security and law enforcement.

It is therefore submitted that the jurisdiction of the Authority under the Bill should be well defined and existing regulators may be empowered to issue regulations and codes under this Bill with respect the sectors within their regulatory ambit.

Q50. Stakeholders may also provide comments with detailed justifications on other relevant issues, if any.

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No comments