



RJIL/TRAI/2021-22/489
February 10, 2022

To,
Shri Sanjeev Kumar Sharma
Advisor (BB&PA)
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan
Jawaharlal Nehru Marg, New Delhi 110002

Subject: Comments on Consultation Paper on “Regulatory Framework for Promoting Data Economy Through Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India” dated 16th December 2021.

Dear Sir,

Please find attached comments of Reliance Jio Infocomm Ltd. on the consultation paper dated 16.12.2021 on “Regulatory Framework for Promoting Data Economy Through Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India”.

Thanking you,

For **Reliance Jio Infocomm Ltd.**

Kapoor Singh Guliani
Authorized Signatory

Enclosure: as above.

Draft response on Consultation Paper ('CP') on "Regulatory Framework for Promoting Data Economy Through Establishment of Data Centers, Content Delivery Networks, and Interconnect Exchanges in India"

Preamble

1. Digital sector has become the key enabler in transforming the economy and catalyst for comprehensive growth in the country. It is imperative that the internet ecosystem is well placed to ensure that the consumers have access to high quality broadband. Digital literacy and availability of low cost high quality internet can have a life transforming impact for lives of people in various sections of our country.
2. We have always been working towards creating world class internet infrastructure in the country and welcome TRAI's focused consultation for developing an enabling regulatory framework for promoting data economy in the country. We believe that Data Centers ('DC'), Content Delivery Networks ('CDN') and Internet Exchanges ('IXP'), beside playing their respective critical roles in internet infrastructure ecosystem, are interconnected and any effort to develop an enabling regulatory framework should collectively look at making the sector an attractive destination for investment.
3. We submit that there is a need to develop an incentive based, both financial and non-financial, investment environment to ensure that India gets the required numbers of new age efficient DCs, CDNs and IXPs in near future, which is critical for the envisioned digital transformation of the country. Standard based certification should be adopted for DCs and same should be linked with incentives. Standards can be prescribed for the DCs, upon adoption of which DCs should be provided with financial and non-financial incentives.
4. In the current prevailing legal and regulatory oversight, connectivity including fiber can be provided only by a licensed telecom player with appropriate authorization under Indian Telegraph Act ('Act'). TSPs are deploying state-of-art network with very high reliability in ring architecture and providing connectivity and Internet access to customers including Data Centers whether standalone, captive or third party. Therefore, allowing DCs to establish their own fiber connectivity without an appropriate authorization under the Act, as one of the suggested measures, is not only a revenue loss to the exchequer but will also lead to all enterprises establishing their own captive fiber networks thus making the TSPs business case unviable for establishing fiber networks. Further such captive connectivity will remain outside the lawful interception and monitoring framework established by TSPs. It is essential for the growth of the sector to have long term certainty in policy and any uncertainty will shake the investors' confidence leading to effect on the investment required in the sector, when in September 2021 the Government has put into place groundbreaking Telecom reforms. Any unwarranted regulatory interference will result in regulatory uncertainty, threat to national security, wastage of resources leading to market distortions, litigations, and economic inefficiencies for the sector.
5. Earlier we had submitted our inputs on draft Data Center Policy 2020 ('DC Policy') released by MeitY. We hope and request that a coordinated effort should be made by all relevant Government departments to develop a comprehensive regulatory framework for promoting the data economy in the country. It should also be ensured that there should not be any

overlapping regulatory compliance requirements from the industry participants owing to multiple regulations issued by various departments.

To Summarize:

1. We believe that an enabling and non-discriminatory regulatory environment should be created for the growth of internet ecosystem in the country; i.e. it should enhance ease of doing business and similar rules should apply to all the DC/CDN/IXP operators/investors.
 - a. CDNs should be brought under a regulatory framework so that the contractual arrangements between internet companies, CDNs and TSPs/ISPs can be monitored for any anti-competitive practices and violation of any net neutrality principles.
 - b. All the IXPs should be bound by same regulatory framework. For unbiased peering, interconnection and security, there is a need for a light touch regulatory framework whereby a separate license may be given for IXPs.
2. There is a need to develop an incentive based, both financial and non-financial, investment environment for investors for creation of new age efficient DCs/CDNs/IXPs and enhance the coverage to Tier 2 and Tier 3 cities. Standard based certification should be adopted for DCs and same should be linked with incentives.
3. Fiber connectivity to DCs should be provided only by licensed entities authorized to do so. Any unwarranted regulatory interference will result in regulatory uncertainty, threat to national security, wastage of resources leading to market distortions, litigations, and economic inefficiencies for the sector.
4. There is a need for an overarching framework for promotion of DCs in the country. But the scope of such an overarching framework should be limited to enhancing the coordination between Center and State Governments.

Below are our inputs to specific questions raised in the CP.

Q1. What are the growth prospects for Data Centers in India? What are the economic/financial/infrastructure/other challenges being faced for setting up a Data Centre business in the country?

1. DCs is poised for significant growth in our country with the primary drivers, as aptly identified in the CP, being the growing internet penetration, rapid increase in internet data consumption, high consumer demand for app-based/OTT services running on the cloud, enterprises moving their IT infrastructure to the public cloud and Government's push for data localization. The consumer's expectation for better quality lower latency internet experience can only be delivered and matched with increase in number of DCs in the country.
2. **The Digital India mission has resulted in explosion of data usage across the country. Now with the availability of high speed 4G networks the usage of data is growing exponentially.** India is one of the highest users and one of the biggest generators of data globally. Another development which is taking place is the introduction of new applications developed in India

and applications specific for the Indian market. All such data needs to be stored in DCs leading to growing demand of same.

3. **At present, significant volume of data generated by Indians is residing outside in foreign countries. We submit that hosting the data within the country would not only improve the user experience but would also ensure that it is safe from the surveillance of foreign elements/countries and within the jurisdiction of Indian Authorities. Hence the same should be promoted and associated provisions of the Data Protection Bill should be strictly enforced, which will also enable growth of domestic DCs.**
4. Going forward, industry 4.0 will likely develop a market for IoT/M2M connectivity services in multiple sectors in the country. M2M communications will lead to multifold increase in amount of processed data; thereby further stimulating the growth of DCs in the country. We submit that any regulatory framework should be future ready and incorporate the support required for desired rampant increase in DCs.
5. We submit that the primary challenges being faced by stakeholders, and which needs to be urgently addressed to stimulate the growth in the sector, while setting up DCs in India include following proposed measures to address specific challenges in detailed in subsequent inputs.
 - a. Capital intensive nature of DCs
 - b. Lack of Ease of Doing Business ('EoDB') in India
 - c. Location and land constraints while setting up new DCs
 - d. Requirement of reliable and efficient power supply
 - e. Availability of fiber connectivity
 - f. Shortage of skilled manpower
 - g. Absence of specialized building norms for DCs

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

AND

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

AND

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 and promoting Data Centers?

1. Establishing a new DC is capital intensive in nature, although the primary cost drivers in the required investment may vary depending on the location of DC, for instance Tier 1 vs Tier 2 and Tier 3 cities. We request that the DC investors need financial incentives for the investment required to achieve targeted penetration of DCs in diverse parts of the country in near future. Financial incentives can be given in form of duty exemptions, various tax rebates including sales and property tax, power tariff subsidy and allotment of land at subsidized rates, among others.

2. **We suggest that collaborative efforts should be made by all relevant departments of Ministries to ensure EoDB for the DC investors.** One of the primary focus areas should be simplifying clearances through a single window and time-bound clearance system by Central and State Governments. We submit that to prevent delay in these clearances a deemed approval system with specified timelines, should be introduced both at the Central and State Government level. Under this deemed approval system, an application would have deemed to be approved, if the government fails to act on the application within the specified timeframe. *It is worth noting that in Singapore it now takes less than six days to register a property for building a Data Centre.*
3. We are supportive of formulation of proposed Data Centre Incentivization Scheme ('DCIS'), as elaborated in DC Policy, for promotion of DCs. It should specify the intended beneficiaries, applicability criteria, and fiscal and non-fiscal incentives for the sector which are provided by both Center and respective State Governments.
4. **It has been a constant request of the industry to assign 'infrastructure status' to DC sector.** We understand that the DCs have been assigned the infrastructure status in the Government's latest budget. We hope and request that it should be ensured that the declared infrastructure status should allow the stakeholders in DC sector to get access to long term credit from domestic and international lenders at attractive terms, which will bring down the cost of capital for the investment.
5. We submit that Central and State Government should work in close coordination to support the DC investors in selection of land location for development of new DC. Any site selection for a DC is governed by multiple factors, of which the three primary factors are listed below.
 - a. Environment conditions: The region's climate and history of natural hazards
 - b. Wide area network: The availability and cost of fiber and communications infrastructure
 - c. Power: The availability and cost of power infrastructure
6. We submit that Government departments should prepare a bank of land parcels, with ready approvals, in targeted regions for DC development. This will likely have far reaching impact on growth of DCs in the region.
7. **Fiber connectivity needs to be ramped up to ensure that DCs can be set up through out the country rather than being concentrated in limited well connected zones.** We submit that the regulatory bottlenecks, viz. RoW and common duct policy, needs to be addressed along with providing financial incentives to TSPs/ISPs for rolling out fiber connectivity in the country.
8. There is lack of skilled manpower for operating DCs beyond Tier 1 cities, leading to concentration of DCs in Tier 1 cities. We submit that there is a need to design a program ensuring availability of required skilled manpower while DC investment expand to Tier 2 and Tier 3 cities. We have elaborated on this in subsequent sections of our inputs (Q22).
9. It has been long holding demand of the industry to recognize DCs as a separate category code in the National Building Code of India. At present, DCs need to follow commercial office building norms, which increases the cost for development of DCs. We submit that the same

should be addressed at earliest for development of efficient DCs in future through issue of guidelines for DC buildings and subsequent issue of separate building code by relevant Government department, in consultation with industry stakeholders.

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 Centers and disaster recovery sites in Tier-2 and Tier-3 cities in India? Do justify your answer with detailed comments.

1. As internet penetration increases in the country, it is imperative that low latency high quality broadband is available in Tier 2 and Tier 3 cities to ensure our country achieves the vision of true Digital India. At present DCs are concentrated in Tier 1 cities, primarily owing to presence of robust connectivity, uninterrupted power supply and availability of skilled manpower.
2. We submit that State Government need to ensure the following so that the DC investors are encouraged to invest in Tier 2 and Tier 3 cities:
 - a. Power connectivity is always an issue for Tier 2 and Tier 3 cities. State power distribution companies should provide the support for dual grid connectivity. Incentives should be provided for sustainable captive power generation for such DCs, with a special focus on renewable sources.
 - b. Regulatory support in form of requisite RoW clearances and financial incentives for TSPs/ISPs should be provided to encourage fiber connectivity in such Tier 2 and Tier 3 cities.
 - c. Vocational training should be promoted to ensure skilled manpower for DCs in Tier 2 and Tier 3 cities. Additionally, coordinated efforts should be undertaken to develop a curriculum for the same in under-graduate and diploma courses.
 - d. Financial incentives should be provided. For instance 100% reimbursement of stamp duty, conversion fee, transfer duty and registration fee; VAT/CST/GST reimbursement for a period of 8 years; and property tax levied at par with residential rates

Q6. Will creation of Data Centre Parks/Data Centre Special Economic Zones provide the necessary ecosystem for promoting setting up of more Data Centers 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.

1. We submit that DC Parks and DC SEZs can play an important role in ramping up DC growth across the country. DC Parks, with all requisite permits and infrastructure in place, can allow the stakeholders to lease and start the operations. This will ensure that DC players can focus on technology while DC Park provides with the required infrastructure.
2. We submit that Government should take leadership in setting up of such DC Parks. We are supportive of the proposal of Gol setting up at least four Data Centre Economic Zones ('DCEZ') in the country, as outlined in DC Policy. We understand that these DCEZs would be

concentrated and specialized Data Zones, with the most conducive non-IT and IT infrastructure, connectivity, power and regulatory environment.

3. We submit that private players should also be encouraged and incentivized to set up such DC Parks but required support should be provided for the same. A single window and time bound approval/clearance institutional process should be put in place. We submit that an incentivization scheme should be put in place by Government, which would specify the fiscal and non-fiscal incentives and its applicability criteria for private players intending to set up DC Parks.
4. **We believe that DC Parks can play an important role in growth of DCs in Tier 2 and Tiers 3 cities. Government should plan/assist setting up pre-provisioned DC Parks in a 'plug and play' model for DC investors**, by provisioning access to land parcel, subsidized power supply, high capacity network back-haul, pre-approved clearances/approvals and fiscal incentives in form of duty/tax rebates and reimbursement of VAT/GST, among others. Government should ensure fiber connectivity for such DC Parks, either itself or through PPP model with TSPs or TSPs can be awarded the contract for the same.

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

AND

Q8. Is there a need to develop India-specific building standards for construction of Data Centers operating in India? If yes, which body should be entrusted with the task? Do provide detailed justification in this regard.

AND

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

AND

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

AND

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

1. **We submit that DC buildings require different norms as compared to other office/commercial buildings and therefore, there is a need for creation of a separate category code for DCs in the National Building Code of India.** In absence of separate building norms, DCs are required to follow commercial office building norms. This unnecessarily raises costs as various requirements based on personnel presence that are relevant to other commercial buildings may not be relevant for DCs. For instance, the floor load handling requirement of a typical office space would be significantly lower than DCs.

2. Globally DCs already comply with multiple standards for both infrastructure and QoS. We submit that such globally accepted standards should be evaluated for suitability for Indian environment and regulations.
3. **We submit that an industry body should be formed in consultation with industry stakeholders. Such body should continuously monitor the established and emerging applicable DC standards globally. It should identify the suitable standards which should be applicable for Indian environment and publish the same for adoption by DCs operating in India, upon approval of the same by relevant Authority.** Players operating DCs are updated with challenges being faced by the sector and hence are in best place to recommend the applicable standards for the same. The composition and governance of such an industry body can be approved by the Government upon submission of the same by the industry body.
4. Specifically, for separate building code for DCs, relevant Authority should necessarily consult industry stakeholders to incorporate required changes for development of DCs, e.g.: FSI height for DCs should be kept at 5.5 meter as per the existing international provisions, allowing installation of DG and transformers at a higher level for facilitating the business operations, among others. The above mentioned industry body can be assigned the task of submission of industry recommendation on possible building code to relevant Government Authority.
5. In the interim, till the industry body is formed, DCs should be governed by existing regulations of the country. During this interim period, the relevant Authority can publish set of recommended guidelines, based on global best practices which can be adopted by DCs operating in India on best effort basis but the same should not be mandated for the DCs. Efforts should be made to form an industry body at the earliest, which should be given the task of evaluating and publishing the set of guidelines which are suitable for Indian environment.
6. **We submit that standard based certification should be adopted for DCs and same should be linked with incentives. Standards can be prescribed for the DCs, upon adoption of which DCs should be provided with financial and non-financial incentives.** A ready reckoner of incentives linked with various certifications should be available for DCs to plan their investment while setting up the DCs. This incentive linked standard based certification framework will encourage DC investors to adopt latest technologies while planning and building DCs and will enhance the R&D capacity in the country.
7. We suggest that DCs should be incentivized for efficient utilization of energy by promoting use of latest techniques and solutions, i.e. aim to incentivize DCs operating with high computation per watt consumption. We suggest that incentives should be designed for effective management of HFCs with focus on carbon neutrality. DCs should also be incentivized for adoption of green energy.
8. The mentioned industry body can have a designated sub-committee responsible for audit and certification of DCs according to adoption of standards by the DCs.

Q12. Are there any specific aspects of the disaster recovery standard in respect of Data Centers that needs to be addressed? If so, then provide complete details with justification.

1. No additional comments.

Q13. Whether trusted source procurement should be mandated for Data Centre equipment? Whether Data Centers 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.

1. With the digital transformation of our country, most of the critical/strategic services (ex: banking and financial services, government services, etc.) have been made online and there is an upward trend of usability of smart and connected devices/services. All this data resides in the DCs and hence, it is in the national interest DCs should be both physically and digitally secure as it holds confidential information of the users. We believe that the role of the selection of hardware equipment and deployed software becomes critical in relation to maintaining digital security of the stored data.
2. **We believe that there is a need for testing and certification of hardware equipment as well as software used in DC facilities in India. This will ensure that there is no data breach owing to malicious content of hardware equipment sourced from dubious origins. We understand that the ISPs are already mandated by their license arrangement to purchase equipment which has been approved by Government and we submit that the same approach of approved equipment/software purchase should be applicable for DCs too.**
3. We submit that the above suggested industry body can be entrusted with the responsibility of security certification based on audit of hardware equipment and software deployed by DCs operating in India. We believe that such security certification, based on approved equipment/software purchase, should be mandated and they will be critical in ensuring the security while processing of personal data of Indian citizens in the DCs.
4. We support Government's intention to promote research for indigenous technology development and capacity building. Use of indigenous hardware (IT as well as non-IT equipment) and software products used in the DCs will reduce the overall import burden of the country. Further financial incentives in terms of tax breaks / reimbursement of GST could be provided to the DCs procuring indigenous hardware and software.

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 Centers/data parks? Do justify.

AND

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.

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1. We reiterate that fiber connectivity is primal for development of DCs, specially in poorly connected areas in Tier 2 and Tier 3 cities. The present limitations that the DCs are facing with regards to the availability of fiber connectivity are on account of external factors related to approvals and permissions for RoW, and associated charges and timelines. Any alternative fiber access mechanism, like permitting captive use, will also face the identical challenges. Therefore, to improve the situation it requires an enabling regulatory environment so that the players responsible/licensed to lay the fiber get the required support from the relevant Authorities and any alternate solution like captive fiber is not going to help to address the root cause of today's bottlenecks.
2. Under the current prevailing legal and regulatory oversight fiber, connectivity can be provided only by a licensed telecom player with appropriate authorization under Act and aptly so. Accordingly, **we submit that fiber connectivity between two DCs should only be provided by licensed telecom players, viz. TSPs.**
3. **The current telecom regulatory oversight does not allow non-licensed entities to establish fiber networks as the same can lead to network security issues pertaining to national security, interception, confidentiality, and data privacy related requirements,** which are otherwise applicable on the entities providing telecom connectivity as part of their license conditions.
4. The provision of bandwidth through OFC system is a subset of telecom service and can only be done under an appropriate license by the DoT. Thus, DCs are the end customers for the TSPs, just like other end customers. Any arrangement between TSPs and DCs should be left to market forces owing to healthy competitive state of the telecom sector. Any unwarranted regulatory interference can result in misallocation of resources, market distortions, litigations, and economic inefficiencies for the sector.
5. Thus, even if the DC providers establish captive fiber networks, the same would have to be done under a telecom license and then offered to TSPs for providing the data connectivity. Instead of such a circuitous route, it will be better to leverage the services of TSPs infrastructure to connect the DCs. TSPs are deploying state-of-art network with very high reliability in ring architecture, which will not be feasible for dedicated captive network as they are generally linear in nature.
6. **Hence, we submit that there is a need to incentivize and support the TSPs in carrying out the fiber rollout in the country for connectivity of DCs, specially in Tier 2 and Tier 3 cities.** Key steps for that should include
 - a. Ease of RoW permission for the license holding companies
 - b. Incentivize establishment of common ducts to be shared on non-discriminatory basis by the license holders
 - c. Mandate co-deployment of common ducts during construction of any roadway, railway, water pipeline and gas pipeline which are being deployed using public resources

7. **We believe that to reduce the digging and optimize the use of ducts, a common duct policy is imperative.** As all TSPs/ISPs, which are desirous of offering service in an area, will require to lay fiber. We recognize that with common duct policy there will be no requirement for separate permissions by individual service providers; hence making separate digging for their proposed work redundant, resulting in reduction in fiber cuts and cost of laying fiber. If a utility corridor is available, then both right of way & restoration issues will be automatically resolved and it will facilitate quicker development of telecom Infrastructure.

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?

1. CLS plays a critical role in connecting a country to global internet ecosystem. **Accordingly, we believe that CLS should be mandated as infrastructure of national importance and measures taken to protect, both subsea as well as terrestrial fiber cables connecting to the CLS.**
2. Any International connectivity is only mandated through the ILDO or ISP with International Gateway. We submit that CLS owned by one ILDO should be allowed to connect through terrestrial links with other CLS owned by another ILDO. This will ensure that in case of failure of subsea cable at one CLS the traffic can be redirected through another CLS connected through terrestrial cable.
3. We recommend that the access facilitation charges, and co-location charges paid to CLS should be allowed as pass through expenses which would help the ILDO to make the connectivity charges more competitive. Additionally, RoW charges for connectivity to the CLS being established by the ILDO/Access Operator/ISP licensee should be waived off. This would allow them to build redundant paths to the CLS.
4. We submit that there are massive challenges in setting up new cable landing station (CLS) facilities, in the country. The current process for approval of CLS is very slow leading to extensive delays and in many cases the approvals take years to process. The process needs to be streamlined and fast tracked with time-bound approval processes. We recommend that cable laying & repair services should be designated as 'Critical & Essential Services' and should have priority for 'Permits- In-Principle' and Clearances from Government agencies.

Q17. Is the extant situation of power supply sufficient to meet the present and futuristic requirements for Data Centers in India? What are the major challenges faced by Data Centre Industry in establishment of Data Centers 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 Centers in the country? What incentivization policy measures can be offered to meet electricity requirements for Data Centers?

1. DCs require uninterrupted power supply as they cannot afford any disruption in power supply. To ensure the same, **power supply should be provided from two different substations.** This will ensure that at least one is functional when other faces a breakdown. We understand that multiple State Governments offer dual power grid supply. We submit that the same should be available in all States wherever Government intends to promote development of DCs. Fixed

cost for such dual grid line power supply should be determined based on maximum demand of the consumer as only one source is used at a time.

2. Considering the increasing environment concerns, especially the power frugal country like India, operating DCs with green and renewable energy is a necessity. **Authority should facilitate setting up own power generation units for both DC and DC Parks.** Power generation capabilities through captive power sources such as solar and wind farms should be installed to supplement power sourcing.
3. The new DC plants are being designed to be more power efficient. DC players are upgrading their IT infrastructure and installing energy-efficient servers along with AI driven smart systems to optimize energy consumption.
4. Government should promote green technology enabled and AI driven smart DCs. **The DC players interested in setting up green DC and deploying energy efficient servers can be given supplementary benefits like easy approvals and permits, ease of restrictions in availing existing renewable energy resources, buying renewable energy through open access and subsidies for investing in renewable energy power plants.**
5. The naturally cooled regions in India remain vastly unexplored from DC expansion perspective. Naturally cooled regions in India provide several advantages over Tier 1 cities, viz. relatively lesser land cost, economical labor, low water-based cooling requirements and abundance of opportunities for investment in renewable energy power plants for powering DCs. Although poor connectivity, lack of skilled labor and lesser reliable grid power supply continue to be the bottlenecks.
6. We submit that it is imperative that the DCs should shift out of Tier 1 cities. Efforts need to be made to reduce the carbon footprint of the DCs as they are power intensive in nature. We submit that DC investors need to be incentivized to invest in development of DCs in naturally cooled regions. The incentives should be both financial and non-financial in nature, viz. tax breaks for defined number of years to increase capital investment capacity of investor, rebates on applicable duties, simplification of clearance/approval process, among others.

Q18. Should certification for green Data Centers be introduced in India? What should be the requirement, and which body may look after the work of deciding norms and issuing certificates?

1. We are supportive of introduction of certification for green DCs in India. We submit that incentives should be provided to certified green DCs to promote the adoption of green technologies by increased number of DC players. Authority can recommend prevailing global standards for the same, upon compliance of which DCs can obtain the certification.
2. **We submit that existing certifying bodies should be considered for certification of green DCs in India.** We understand that at present in India, the Indian Green Building Council (IGBC), a part of the Confederation of Indian Industry (CII) gives certification to companies wishing to obtain a LEED certificate. It also has a Green Data Centre certification, which looks specifically at DCs and uses multiple criteria for adjudging efficiency. We suggest that these certifications can be used as a criterion for providing fiscal and non-fiscal incentives to DCs, upon successfully obtaining the same.

Q19. Are there any challenges/restrictions imposed by the States/DISCOMs to buy renewable energy? Please elaborate. Please suggest measures to incentivize green Data Centers in India?

1. We submit that DCs should be promoted, in practice, to buy power directly from the generating companies and the charges levied by DISCOMs should be rationalized for the same uniformly across the country. This would allow them to procure reliable power at lower rates and the flexibility in developing long term engagements with renewable power generating companies.
2. We welcome the suggestion of the Authority to allow the DCs to buy Renewable Energy Certificates ('REC') from generating companies and DISCOMs directly without any restriction. **We suggest that DCs should be incentivized to increase consumption of renewable energy by allowing the cost of purchased RECs to be included in the CSR cost.**

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

1. Beyond facilitating access to uninterrupted and cost effective power, we suggest that Government should also facilitate availability of fuel at lower rates for DCs as the same is consumed for back-up power sources such as generator sets. This becomes more important for DCs established in Tier 2 and Tier 3 cities where the grid power supply is relatively lesser reliable than that of Tier 1 cities.
2. Another important aspect is that the pollution control guidelines (GRAP) do not allow for backup power generators to be functional during periods of high pollution levels as has been seen in NCR region. There needs to be an exemption to be granted to DCs as has been done for hospitals/emergency/essential services.

Q21. Availability of Water is essential for cooling of Data Centers, how the requirement can be met for continuous availability of water to the Data Centers? Are there any alternate solutions? Please elaborate.

1. DCs are heavily dependent on water for their cooling requirements. Although alternative cooling solutions are being researched and tested globally, still they are at nascent stage and it will probably be years before mass scale deployment of such alternative solutions can be done.
2. At present potable water is also used by the DCs for cooling purpose. We submit that DC players should be supported to minimize the use of potable water through investment in following options:
 - a. Water treatment plants built to reuse treated water from within the facility, or from outside sources.
 - b. Waste-water recycling plants
3. **All the above mentioned options are capital intensive in nature, which is a significant deterrent for the DC investors. Hence, we suggest Government should subsidize significant portion of capex and tax concessions on operational cost of such recycling plant to incentivize the DCs to adopt eco-friendly community friendly solutions.**

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?

1. We feel that India has large skilled workforce for entry level positions of DC operations but needs a push for training and upskilling the existing workforce required for new generation energy efficient DCs. Hence the skillset demand in the DC sector is high and requires planned implementation of suitable capacity building initiatives as part of vocational training along with the extant university education.
2. We submit that Government should, in collaboration with leading academic institutes, develop curriculum for institutes to impart large scale trainings to workforce on data center, digital and cloud technologies. Such institutes should also develop relationship with operating DCs for efficient absorption of skilled workforce by such DCs.
3. Enterprises should also work towards upgrading the skillset of their existing workforce to match the need for their DCs. Government institutes in collaboration with leading academic institutes should develop training and certification courses, which can be used by enterprises for upgrading the skillset of their current workforce.

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 Centers 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.

AND

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

1. **We submit that there is a need for an overarching framework for promotion of DCs in the country. But the scope of such an overarching framework should be limited to enhancing the coordination between Center and State Governments, which will be required to implement the recommendations related to growth of DC sector in the country, both at Central and State level. Such framework should ensure defined limits for time bound approvals, both Center and State level, and associated fees for the same.**
2. **Implementation of uniform DC related incentives across all the States may not be possible in view of the different priorities that each state may be having.** The level/extent of fiscal and non-fiscal incentives that a State Government intends to extend to DC Sector to attract investment in the State, should be left to discretion of respective state Government. This will lead to healthy competition between the States and will be beneficial for the sector.
3. We notice that MeitY's draft DC Policy suggests forming a Data Center Facilitation Unit ('**DCFU**'), which shall be responsible for evolving Center-State Government coordination

mechanism. We are supportive of formation of such institutional body for overarching coordination for adherence to common goal of promoting DC sector.

Q25. Is there a need for Data Centre Infrastructure Management System (DCIM) for Data Centers in India? What policy measures can be put in place to incentivize Data Centre players to adopt the futuristic technologies? Elaborate with justification.

1. We submit the DCs should be incentivized to create an efficient DCIM to correctly assess the requirements of respective DCs. We submit that India is at digital inflexion point and the players need to be suitably supported and incentivized to adopt newer technology for developing efficient DCs. The DC sector in the country needs light touch regulatory approach with an incentive framework in place considering the capital intensive nature of the sector and the criticality of the role of DCs in the success of Digital India movement.
2. We submit that a progressive approach of incentives based on certification of DCIM for DCs should be adopted. Fiscal incentives will encourage DC investors to undertake required significant investments required to develop advanced energy efficient DCs. Such incentives should be available through simple processes to the DC investors upon successfully obtaining the required certification.
3. We suggest that for smaller players and startups, Government should provide required step by step assistance in preparing their infrastructure and systems ready for compliance with DCIM and obtain the required certification, as such smaller players and start-ups may not have requisite resources for the same.

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

AND

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?

1. We believe that ensuring the security of digital data is bigger challenge than mere digitization of data, which is currently in form of hard document. India is still at early stages of recognition of need for development of requisite system and framework for maintaining the security of data in possession of data fiduciaries, far from adoption of the same. The Personal Data Protection Bill is still in stages of Parliamentary approval and hence there is no demarcated specific regulation in the country to ensure security of personal data.
2. Development of requisite infrastructure and framework to ensure security of data will require time for many data fiduciaries, which may either be constrained by resources or may not have deployed sufficient resources till date. **We submit that Government must preempt development of a secure environment for processing of data before aggressively pushing for data digitization drive at all fronts.**
3. Instead, select data digitization drive can be undertaken for domains/industries which are well placed for secure processing the data. Government departments should take a lead in this and be the pioneers in digitization of hard documents already in possession of various

departments. They can develop the infrastructure and framework for secure processing of such digitized data.

4. We submit that when the data is transferred from one entity to another for monetization, the responsibility of maintaining the security of such data is also transferred to the data receiving entity. **We reiterate that before pushing for the monetization of data, it is important to ensure that all the stakeholders have the requisite data security infrastructure and framework in place.**
5. **Such data monetization measures should be solely driven by the consent mechanism of the data principal. Any transfer of data from one fiduciary to another for monetization purposes should only be done upon receiving specific consent for the same and such consent should also specify purpose limitation of the transferred data.** In addition, monetization of sensitive personal data should be driven only by specific explicit consent. We understand that Government is already in process of developing the Data Empowerment and Protection Architecture ('DEPA') for implementing a secure data sharing mechanism in the country. We had submitted our inputs/comments on Niti Aayog's draft document on DEPA released in 2020.

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

AND

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?

AND

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.

AND

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

1. **We observe that in its net neutrality recommendations in 2017, Authority had kept CDNs out of the net neutrality regulations but had opined that there is a need for more transparency relating to the arrangements between TSPs/ISPs and CDNs.** Knowledge of such arrangements would be useful for gaining a proper understanding of the factors affecting the flow of traffic on the Internet, potential for anti-competitive practices and to monitor violations of the non-discrimination requirements by TSPs/ISPs. It further stated that Authority may frame appropriate regulations to specify the disclosure and transparency requirements in this regard. Since the recommendations in 2017, CDNs have grown rapidly in the country and the sector has undergone significant changes.
2. **Internet companies utilize CDNs to facilitate faster delivery of their content to users. In turn, CDNs have agreements with TSPs/ISPs to host servers on their network. We submit that with data traffic set to grow in our country and a limited number of players controlling a significant proportion of internet traffic, chances are there for anti-competitive agreements between internet companies, CDNs and ISPs/TSPs.** Such internet companies include search

engines, OTT content providers, e-commerce companies, banking and financial companies, among others. Page loading time has a direct impact on advertising and e-commerce revenues for any web-based service, which is why there is a vibrant market for the CDN services

3. The market for the interconnection of CDNs and ISPs is at a nascent stage. Some of the big OTT players have started their own CDNs. **Such dominant players can dictate terms for interconnection with smaller ISPs refusing them direct peering. Further large ISP players, who are also in CDN space, can create exclusive tie-ups with large content providers like OTT platforms companies, excluding other players from direct access on equal terms.** There is a need to see that the market is not misused to create dominance, hurting the business of smaller players by way of arbitrary demands. Such a market may require regulatory interventions.
4. **We submit that if the access to CDNs is not on equal terms, the issue of net neutrality may arise whereby customers of preferred players may be provided with better quality CDN services.** While the ISPs are subjected to net neutrality specific license terms and conditions, a formal mechanism to enforce the same on CDN players does not exist. Hence the **contractual arrangements of CDNs with internet companies may need to be scrutinized to avoid possibility of any anti-competitive practices and violation of net neutrality principles.**
5. **While commercial arrangements between internet companies, CDNs, and ISPs/TSPs can be left to the market forces, there is need to have regulatory oversight. Therefore, mandated disclosure of arrangements and traffic patterns would help in ensuring net-neutrality principles and fair competition. However, for monitoring any such interconnect agreement, some regulatory framework will be required. We submit that for any digital communication network to function smoothly, it is imperative to have a regulatory framework for interconnection between various players which is fair and just and gives equal opportunities to each player.**
6. Another issue, being faced by TSPs is inability to block unlawful URLs, on the instructions of the Government/LEA/court orders, which are hosted domestically by CDN providers. Also, for such content hosted locally at CDN, users can configure alternate DNS and bypass blocking. Therefore, such blocking requires active participation by CDN providers, which at present cannot be enforced by the Government, as these entities at present are outside the licensing regime.
7. **We recommend that CDNs should be brought under a regulatory framework so that the contractual arrangements between internet companies, CDNs and TSPs/ISPs can be monitored for any anti-competitive practices and violation of any net neutrality principles. Hence CDNs should be brought under suitable licensing regime, with light touch regulatory approach. Such licensing regime will also allow imposition of requisite conditions on CDNs for security of data processed in such CDNs as well as blocking of any unlawful content being served from these CDNs.**

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

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1. Like DC, CDNs also face multiple technical and economic challenges due to infrastructure issues. The costs of maintaining servers (including energy to power and cool the servers) and maintenance staff costs are also significant. Implementing and maintaining CDN servers and equipment is therefore challenging for many small- to medium-sized internet providers who have limited resources. We suggest that such smaller players may be supported in setting up the CDNs, specially in Tier 2 and Tier 3 cities.

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, Data Centre operators, and Interconnect Exchange providers expansion in various Tier-2 cities?

1. The last mile plays an important role in the CDN value chain and can stream content efficiently only when internet access networks are fully developed and have good speed of internet access in all parts of the country. We submit that it is imperative that Government should incentivize fiber roll out in Tier 2 and Tier 3 cities. Fiber penetration remains the backbone for high speed broadband and hence utility of CDNs for enhancing the experience of users. Additionally, for players to invest in CDNs, they need fiber connectivity.
2. Digital communication infrastructure ecosystem comprises various stakeholders, including CDN service providers, Data Centre operators, and Interconnect Exchange providers. These players can flourish and grow together well if the ecosystem for their presence exists in different parts of the countries. Currently, the ecosystem is flourishing mostly in Tier1 cities, these players must grow in different States and smaller cities so that the digital economy gets boosted there also. We have elaborated on steps that can be taken for supporting the growth of DCs in Tier 2 and Tier 3 cities.
3. **Like DCs, the biggest challenge is setting up CDNs include real-estate costs, the need for a large and uninterrupted power supply. We submit that Government can consider financial and non-financial incentives, like those enumerated in our inputs on DCs, for growth of CDNs in Tier 2 and Tier 3 cities.**

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

1. We agree that for providing the benefits of CDNs for subscribers of smaller ISPs, it is imperative that the connectivity between the ISPs operating on a regional basis and CDNs is promoted. We submit that the same can be achieved through investment required for bandwidth connectivity from their regional point of presence to metro cities and development of CDNs at same regional points.
2. **For either of the above cases, fiber roll out to such regional points in Tier 2 and Tier 3 cities is the most critical element. We reiterate that the licensed entities should be supported and incentivized to connect metro cities to regional points in Tier 2 and Tier 3 cities, as elaborated by is in our earlier inputs (Q14 and Q15).**

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?

AND

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

AND

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.

- 1. We submit that TSPs/ISPs should be encouraged to provide CDN service as they are well placed to offer the users higher quality internet experience and they can store content on servers located at decentralized points in the network and potentially offer service that is superior to classic CDNs. Additionally, it should be ensured that all CDNs, whether independent or of TSPs/ISPs, should be subjected to similar license conditions (as elaborated in our earlier inputs). This will ensure level playing fields for all players planning to invest in CDNs.**
2. Generally, TSP/ISP owned CDN service inherently has a disadvantage as the IP network of each operator works only within the country that the operator belongs to and hence it is difficult for the operator to compete with global CDN service providers, which have network across multiple countries. Hence there is a need to incentivize TSP owned CDNs, to enable them to compete efficiently with global CDNs in the country. We believe that the size of Indian internet market will encourage the internet companies to engage with operators directly and execute CDN service agreements with them; provided the TSPs/ISPs are incentivized through an enabling regulatory environment to invest in the CDNs.
3. There is regulatory uncertainty related to Adjusted Gross Revenue ('AGR'), which can lead to regulatory levies on revenue from CDNs operated by TSPs. This can lead to non-level playing field between TSP owned CDNs and CDNs operated by global players. Hence. We submit that the Authority should take up the issue of amending AGR definition in line with the union cabinet decision so as to ensure that definition of Gross Revenue (GR) will only include revenue actually received/ receivable directly from the customer on account of provision of telecom products or services licensed under Section 4 of the Indian Telegraph Act.
4. Another option being explored by TSPs/ISPs is that the operators provide CDN services through the CDN network built by using CDN software purchased from a global CDN service provider. This way the operator is federated with global network of independent CDN service provider.
- 5. In summary, we submit that CDNs operated by TSPs/ISPs can offer better service/experience to end users compared to classic CDNs. Hence such investment by domestic players should be incentivized through fiscal and non-fiscal initiatives, in line with the incentives enunciated in our inputs for incentives for DCs and the issues that may create non-level playing field should be addressed at the earliest.**

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

AND

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?

AND

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.

1. The formation of local IXPs is vital to the development of India's digital space and economy. By keeping domestic internet traffic local, IXP help reduce transit cost, reduce latency in network and provide better user experience. Globally many independent IXPs have been set up for ISP peering, for the purpose of routing the local IP traffic within the country. With huge content consumption and evolving markets, more CDN providers would connect to IXPs and this, in turn, will increase demand for a greater number of private IXPs in near future.
2. We believe that at present there is a lack of clear regulatory framework/guidelines for establishing/operating IXPs in India. This has also led to an ongoing litigation by one of the IXP investors, as also mentioned in the CP. Such situations should be avoided. IXPs operation under ISP license are bound by license conditions whereas NIXI being independent agency cannot be regulated in terms of QoS, tariff, interconnection port charges and infrastructure being provided by it. **We submit that all the IXPs should be bound by same regulatory framework irrespective of the fact that the IXP investor/developer is a licensed entity or otherwise. There should be level playing field for all IXP players in the country.**
3. **We submit that for unbiased peering, interconnection and security, there is a need for a regulatory framework whereby a separate license may be given for IXPs.** This can help in promoting IXPs in the internet ecosystem. We recommend a light touch regulatory approach in which the charges and fees to be levied by the operator of an IXP for connection to the IXP should be set by the operator itself, in consultation with the ISPs and in compliance with the Regulations. **Authority should create an enabling environment for IXP operators through this light touch regulatory framework and an IXP license cannot be same as an ISP license in its obligations.**
4. We submit that IXPs should be neutral players. They should not discriminate and refuse/delay interconnectivity to any player. IXPs operating under ISP license to provide interconnect exchange facility to the users (most of whom are other ISPs) cannot be considered neutral players as there is conflict of interest, which may lead to a problem of trust with the competitors and can result in abuse of their position as IXP. Hence a regulatory framework should be in place to ensure that any IXP operates as a neutral IXP for benefit of internet ecosystem in the country.
5. We submit that the Authority should create an enabling environment for supporting IXP development in the country. Steps for that can include the following, among others.

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- a. Assuring a reliable power supply
- b. Reducing high duties and taxes on IXP equipment imports
- c. Not placing constraints through licensing or regulation on operator's ability to connect and peer at an IXP
- d. Removing barriers to entry for IXP operation and peering
- e. Ensuring fiber connectivity of the site location

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

1. We observe that globally both the commercial and non-commercial IXPs are prevalent depending on the market conditions. For instance, a majority of IXPs in the United States are for-profit organizations, while the majority of IXPs in Europe, Africa, and South America are not-for-profit organizations.
2. **We believe that the Indian market can have both commercial exchange and community-led open exchange. We submit the model to be adopted by any specific IXP should be left to market forces and up to the discretion of stakeholders investing in IXP. We recommend that the choice of the business model by the IXP should be driven by the suitability of the model that most effectively and sustainably can promote the growth of the IXP and contribute to the development of the Internet ecosystem within its area of operations.**

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

AND

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?

1. As stated above, we reiterate that operations of IXPs should be left to market forces. **While IXPs should allow non-discriminatory access to all ISPs and other players, it should also be left to ISPs to decide which IXPs they intend to join. This will create healthy competition between IXPs and allow growth of efficient IXPs. Success of IXPs is determined by number of peering players and the ability of the IXP to attract ISPs and other players to connect to such IXP.**
2. The boom in internet usage and content consumption online has necessitated the expansion of IXP infrastructure. The DC industry in India would further require exchanges that allow for transmission and interconnection at cheap rates and without any delays or congestion in the network.
3. **Any move to mandate ISPs to connect to IXPs will increase the cost for the ISPs and will be detrimental to internet ecosystem by increasing the cost burden on the ISPs.** In a competitive market, when left to market forces, players strive for most cost efficient mechanism and that is beneficial to the end consumer. Moves like mandating ISPs to connect to IXPs disturb the market forces and is detrimental to the competitive landscape.

4. We submit that Authority should create an enabling regulatory environment, as elaborated in our earlier inputs, for setting IXPs in India. **The growth of IXP in any the country and opening of new IXPs, depending on traffic in the region, should be left to market forces. Although Government should support investment for IXPs in Tier 2 and Tier 3 cities, along the lines of fiscal and non-fiscal incentives for setting up DCs in Tier 2 and Tier 3 cities.** As traffic exchange is required closer and closer to the edge, more exchanges might be needed in smaller cities and locations.

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?

1. Once an IXP is established, ensuring connectivity with Internet Service Providers is the first important step. IXP operators just provide ports on their switches to the respective ISP to form a connection. We understand that leased line is used by players to reach the IXPs.
2. ISP should bring their own fiber or buy point-to-point links from some telco and reach the exchange. Most small ISPs are left with no other option but to transit their traffic through bigger ISPs who may interconnect at a location that suits their own traffic rather than the small ISP's.
3. **We submit that Government should incentivize licensed entities to roll out fiber through out the country and remove the regulatory complexities associated with the same. The fiber space is a capital intensive domain and Government should improve the EoDB in the domain to promote healthy competition in the domain. This will lead to lowering of cost for leased line for the smaller ISPs.**
4. Hence, we submit that Government should leave the access of leased lines to market forces. Although it should strive to make domain competitive and encourage the investors to make roll out fibers to connect all the stakeholders in the internet ecosystem.

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?

1. We submit that the cost of AS number allocation needs to be brought down and Government needs to work with International agencies for the same. Even though the Indian Registry for Internet Names and Numbers ('IRINN') is functional, but the cost structure is quite high. An option could be that the cost could be subsidized by Government. This would encourage more ISPs as well as enterprises to get AS numbers allocated for themselves from IRINN.

Q46. 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.

1. No additional comments.

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?

1. We are supportive of operationalizing an evolvable regulatory, institutional, and technology design/framework for secure data sharing that will empower individuals with control over their personal data. **We recognize that there is a need to adopt a nuanced approach which unlocks the immense potential of data for social/public/economic betterment of individuals but ensures that the agreed data sharing framework does not dilute or compromise the security of such shared data; it should uphold the protections afforded by the Personal Data Protection Bill 2019 ('PDP Bill'), among others.**
2. **At present, data protection regulations are not equally equipped for different sectors to maintain the security of personal data in control of the data fiduciary in the sector. Hence implementation of DEPA cannot be done simultaneous for all the sectors, before creating a secure environment and suitable regulatory framework for sharing of personal data between data fiduciary and data consumer through Consent Manager.** We submit that the data recipient should be suitably equipped and obligated for maintaining the security of the shared data
3. In absence of PDP bill, there will be a requirement of accrediting each data recipient with a suitable Authority, which should ensure that the data recipient complies with set of privacy safeguards, rules and IT system requirements that ensure privacy and protection of shared data; to uphold the trust of data principal.
4. DEPA is also founded on similar premise and aims to allow individuals to have control over their data through a consent designed on principles of open standards to ensure interoperability, revocable, granular, auditable, providing notice and secure by design (acronym ORGANS); rather than the use of the same data for any competing institutional interests. We are supportive of such consent based data sharing.
5. TSPs collect user data for limited purpose of primarily providing telecommunication services, as outlined in our consent form, which the user agrees to before sharing his/her data. **We agree that on being provided the appropriate user consent to share his/her information with other telcos; given all TSPs are bound by similar obligations to protect the security of user data under their license conditions. Although we would like to clarify that sharing of KYC data between the TSPs will not address the requirement of subscriber verification mandated in the license. Additionally in case of Aadhaar based KYC process, the TSPs are bound by the agreement between the TSP and UIDAI and may not be in a position to share the personal data of the subscriber.** Considering that the PDP Bill is in its last stages, we urge the Authority to await the implementation of the same and the Data Protection Authority ('DPA') to be in place before making any recommendations with regards to facilitating sharing of data between TSPs.

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6. Although it should be explicitly mentioned that the liability of maintaining the security of shared data lies with the Consent Manager, as it is the entity obtaining user consent for sharing of his/her data. Role of TSPs will be limited to providing the requested data, on being provided the appropriate consent, on behalf of the user to the Consent Manager, as such data is already available with the TSPs in digital format. As per provisions of impending PDP Bill, such Consent Collector will be like any other data fiduciary which is collecting limited user data for limited purpose and the same should be defined in the electronic consent form.

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.

1. No additional inputs

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

1. In many cases, DCs are part of the larger infrastructure complex created by the entity. We submit that for such cases the Policy should consider providing/allowing for creation of centralized services for non-core operational activities like e-waste management, sewage treatment, rain-water harvesting, etc. within the larger infrastructure complex instead of mandating creation of separate such facilities for DCs alone. This will maximize efficient utilization of resources by the entity and allow DCs to focus on core business activities.
2. We also submit that any incentive framework, that the government comes out with, should be applicable both for setting up of new Data Centers as well as for existing DCs undergoing expansion/modernization.