10 February 2022

# USISPF Submission on the TRAI Consultation Paper on the Regulatory Framework for Promoting Data Economy Through Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India

The U.S. India Strategic Partnership Forum **("USISPF"**) welcomes the Telecom Regulatory Authority of India's **("TRAI")** efforts to undertake a consultation focused on promoting data centres, content delivery networks **("CDN")** and interconnect exchanges. On behalf of our members, USISPF would like to highlight some reforms and recommendations to support the growth of India's digital economy.

Please see below our responses and recommendations to some of the questions raised in the TRAI Consultation Paper on the Regulatory Framework for Promoting Data Economy Through Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India **("Consultation Paper")**.

## Chapter II: Date Centres

As set out in the Consultation Paper, India has tremendous potential to become a global data centre hub. Investments in data centre infrastructure and the increased use of cloud services will be a key driver for transformation and economic development in the digital age. While we commend TRAI for initiating a conversation around data centres in India, we note that the Ministry of Electronics and Information Technology **("MeitY")** has already initiated a process to formulate a comprehensive data centre policy for India, in 2020 **("MeitY Draft Policy").** We would also like to highlight that several issues addressed in this Consultation Paper have been captured in the MeitY Draft Policy. As the line ministry for information technology, MeitY has been regulating all major issues concerning India's tech ecosystem, including digital infrastructure.

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

We recommend adopting global standards rather than creating separate domestic standards for testing and certification. Global standards have been developed after rigorous testing and experimentation by various experts across different geographies. Creation of a new standards and certification framework for India does not guarantee better outcomes as it could lead to potential inconsistencies with established standards and complicate the ease of doing business in India. We believe the Government's standards framework should be focused on ensuring that the underlying requirement is met rather than prescribing a specific standard for companies to comply with. Many different global standards may be suited to achieve similar objectives. Therefore, we request the Government to provide enough flexibility to data centre operators to adopt different global standards as long as the underlying requirement is met.

**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.**

In the Consultation Paper, TRAI notes that that the value of dark fiber has increased due to the "need for greater connectivity and faster performances." TRAI also highlights that to incentivise investment, data centre operators should be allowed "to construct, operate, and manage their own captive fiber networks". We commend this recommendation. If implemented, we believe it will give a massive boost to the data centre industry in India.

Under existing regulations, only licensed entities can construct dark fiber networks and are permitted access to dark fiber from Infrastructure Provider-1 (IP-1) companies. Dark fiber networks are considered telecom infrastructure and unlicensed entities including data centre operators are not allowed to construct or operate their own captive fiber optic networks. Instead, data centre operators are forced to procure generic network connectivity services from local Telecom Service Providers **("TSP").** These restrictions present the following challenges:

(i). One of the major roadblocks to setting up data centres across India is the dependence on services provided by TSPs. As data centre operators cannot build their own infrastructure, the expansion of the data centre industry is restricted to areas serviced by TSPs. This serves as a major impediment in making India a global data centre hub. If data centres are allowed to build and operate their own captive fiber lines, they will be free to build data centres in remote areas, achieving the government's objectives to ensure connectivity across India.

(ii). Cloud services require very high availability, bandwidth, and low latency for extremely high amounts of data. Traditional networks operated by TSPs are principally designed for voice (mobility) or public data services such as IP broadband services using best-effort redundancy principles. Accordingly, they are not suitable for cloud services. Given India's vast geography and relatively limited technology infrastructure and broadband deployment, achieving such outcomes using TSP services is especially difficult.

(iii). It is substantially more expensive for data centre operators to procure services provided by TSPs instead of buying / leasing dark fiber directly from IP-1 companies. It is also significantly more expensive than similar services available in other countries. As a result, data centre networks in India are less reliable, have a higher latency, and are more expensive than corresponding services in other countries. This disincentivises investment in cloud businesses in India and hinders the growth of the technology industry.

Therefore, we recommend that all qualified network providers, including data centres should be allowed to access dark fiber and construct, operate and manage captive fiber optic networks. We recommend that unlicensed entities should be provided with greater access and urgent measures should be taken to eliminate all regulatory barriers in this regard. If the existing restrictions are done away with, data centre operators will be able to efficiently manage their own networks as configured to their own specialist requirements in a way that is optimised for customers.

**Other recommendations related to Data Centres:**

**To enable data centres achieve their renewable energy goals:** We request the government to enable the use of Virtual Power Purchase Agreements to support the bi-lateral transfer of renewable energy certificates to end-consumers and remove open access restrictions. These regulatory hurdles impede the growth of the corporate renewable energy procurement market and encumber data centre operators from achieving their renewable energy goals.

**To promote adoption of indigenous hardware and software products:** For India to be globally competitive in the data centre market, it must be equipped with the best products available across the world, which have undergone extensive scrutiny across different use-cases. Accordingly, we recommend that the priority should be to use the best available equipment in Indian data centres, including the use of imported equipment. To promote the adoption of indigenous hardware and software products, we request that domestic hardware and software products meet global standards. Compatibility with global standards will ensure that they are designed to deliver efficiency. This will incentivize the adoption of domestic products through market demand and not

through mandatory adoption requirements. It will also prevent a rise in operating costs and inefficiencies for data centres in India as domestic products will be seamlessly compatible with other products.

**To leverage security and audit best practices:** We believe it is important to leverage industry best practices with respect to security and audit requirements. Instead of mandating strict audit requirements that are incompatible with data centres operated on a global scale, leveraging best practices will ensure that data centres have effective physical and logical security controls in place. Adoption of strict audit requirements that are inconsistent with best practices may potentially hamper routine operations due to excessive scrutiny.

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

We request the Government to incentivize the creation of new international cable landing stations (other than Mumbai and Chennai) to encourage the establishment of hyperscale data centres in cities such as Pune, Hyderabad, Bangalore, and Kolkata. Diverse cable landing infrastructure will enable provision of highly resilient and stable connectivity solutions.

The Government could encourage new entrants into the market to build, land and operate submarine cable systems by rationalizing access charges, removing regulatory hurdles and minimizing hindrances to foreign ownership/investment. These measures will: (i) create more open access international cable infrastructure to seamlessly connect domestic data centres with international data centres; and (ii) encourage global and domestic carriers to land more subsea cables into India and improve its international connectivity.

We also request the Government's support to expedite approvals for submarines cable restoration. The current lead time for obtaining these approvals is approximately 12-16 weeks in comparison to 3-4 weeks in markets such as Europe, Singapore, and the US. Between October 2021 and January 2022, four key submarine cable systems connecting India to Europe were out of service, of which two were impacted due to a submarine fiber cut in Indian territorial waters. To avoid inordinate delays in restoration of submarines cables impacted during the operation stage, we recommend that the process for obtaining such approvals be simplified.

## Chapter III: Content Delivery Networks

**Q. 32 What are the challenges in terms of cost for growth of CDN? What are the suggestions for offsetting such costs to CDN providers?**
**AND**
**Q. 37 Are there any other issues that are hampering the development of CDN Industry in India? If there are suggestions for the growth of CDNs in India, the same may be brought out with complete details.**

To ensure the growth of the CDN industry, we recommend the following:

- **CDN market should not be fossilized by excessive regulation**: CDNs contribute to the development of the internet by improving performance, enhancing the ability to handle traffic loads and reduced bandwidth, load balancing and security. As highlighted in the Consultation Paper, India's CDN market will witness a growth of over 700 % between 2018 – 2027 (i.e., from USD 435.2 million in the year 2018 to USD 2846.8 million by 2027). Given that it is an evolving technology and the CDN market is transforming, TRAI should not stifle CDN growth in India with excessive regulations.

- **CDNs should not be regulated as telecommunication providers:** CDNs require: (i) servers for computing and storage; and (ii) connectivity. Depending on whether they build their own connectivity or not, CDNs are either a customer of telecommunications providers (for internet access) or a private network interconnecting with telecommunications providers (through transit and peering). Accordingly, CDNs are not telecommunications operators and should not be regulated as telecommunications providers. CDNs do not require a license to operate in other countries and TRAI should not set this precedent.

- **Concerns regarding relationships between ISPs and CDNs:** The CDN market is competitive and does not have significant barriers to entry. Several companies, both old and new, offer commercial CDN services in India. Some companies choose to implement their own CDN solution and have been successfully bringing the benefits of local content delivery to their global audience. The CDN market is highly competitive, which is evidenced in the fact that prices for such services have consistently been declining[1].

  The relationship between Internet Service Providers **("ISP")** and CDNs is that of a "mutual facilitator". It is crucial in providing end-users with a scalable and high-quality experience when using online services / consuming online content. CDNs and ISPs connect through transit and peering like all networks over the internet. Internet interconnection is an extremely competitive and open market and in 2012, the OECD found that "the Internet has developed an efficient market for connectivity based on voluntary contractual agreements. Operating in a highly competitive environment, largely without regulation or central organization, the Internet model of traffic exchange has produced low prices, promoted efficiency and innovation, and attracted the investment necessary to keep pace with demand." The efficient nature of the Internet interconnection market continues to be validated by the constant decline in prices. [2].

  However, the Consultation Paper raises some concerns about dominant ISPs dictating terms for interconnection with smaller networks. We understand that larger ISPs use their market power to monetize the relationship between ISPs and CDNs. ISPs use their end-users to gain an additional revenue stream from CDNs by: (i) gate-keeping the access to their end-users via IP Transit networks; and (ii) charging CDNs to deliver content to the ISP's end-users. This adds an element of uncertainty for CDNs planning to invest in India and puts the Quality of Service and ability to use online content and services for end-users at risk. ISPs also create exclusive tie-ups with CDNs or content providers, which exclude other players from direct access on equal terms.

  While these concerns are legitimate, it is important for TRAI to adopt a cautious approach when intervening with ex-ante regulations. A regulatory framework should reflect market realities to ensure that it does not stymie the growth of the data economy in India. Moreover, CDN interconnection arrangements are business decisions and discrimination in access / adoption of anti-competitive practices may be best regulated under the competition laws of India.

**Chapter IV: Internet Exchanges**

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

**AND**

[1] https://www.streamingmediablog.com/2020/05/q1-cdn-pricing.html
[2] https://blog.telegeography.com/global-ip-transit-prices-decline-pandemic-covid19

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

We commend TRAI' efforts to encourage the adoption of Internet Exchange Points **("IXP")** as they are important players in the data economy. IXPs that successfully attract sufficient members create network effects that substantially decrease the cost of interconnection and increase its value. In a 2012 study on the impact of IXPs in Kenya and Nigeria for the Internet Society, it was observed that "overall, IXPs have had the direct effect of lowering the operating costs for local ISPs, while increasing the traffic, and where relevant corresponding revenues, of ISPs, with further benefits for those sectors that have incorporated the IXP in their delivery of services."[3]

Given that there are no barriers to entry for creating IXPs, we recommend light touch regulation. IXPs do not require a license to operate in other countries and TRAI should not set this precedent. Mandating networks to join IXPs would result in market distortions and inefficiencies. It would amount to a regulatory intervention in the interconnection market, which has thrived well without any regulation so far. It may also amount to an indirect subsidy of IXPs, whereas the most successful IXPs around the world across sectors (i.e., whether cooperative, not-for-profit, or commercial IXPs) are sustained by their members or customers' fees.

**Chapter V: Data Ethics - Privacy, Ownership, And Security**

- **Potential for conflict in case of multiple sectoral regulators:** We support TRAI's recommendation that the data privacy of consumers must be protected against misuse. However, we would like to highlight that a separate data protection framework for the telecom sector will not need to be developed as the Government is in the process of creating an umbrella data protection legislation that will regulate data controllers / processors across sectors. Although the draft bill has been under review for some time, the Joint Parliamentary Committee **("JPC")** recently submitted its recommendations on the Personal Data Protection Bill, 2019 in December 2021. The completion of the JPC's Report marks an important milestone in the development of India's data protection and privacy legislation. While the JPC's Report and proposed framework include provisions for consultation with sectoral regulators with respect data protection, the interplay between the envisaged Data Protection Authority and sectoral regulators is yet to be fully clarified. The presence of multiple regulators may result in jurisdictional overlaps, which may give rise to business uncertainty and duplication of efforts. This has the potential to adversely impact the ease of doing business for companies in India. Therefore, as the overarching data protection framework is on the anvil, we recommend that additional sectoral regulations should not be formulated.

- **Data Storage Requirements and Restrictions on Cross Border Data Flows:** Cross-border data flows are essential to trade, investment and growth and has led to India's dominant position in data processing and engineering services. Under the proposed data protection framework, requirements for data storage and the movement of data across borders is based on the category of data. For instance, data categorized as "sensitive personal data" and "critical personal data" needs to be stored in India. Additionally, while "sensitive personal data" may be processed outside India, the transfer of such data overseas is subject to several transfer related restrictions. However, restrictions with respect to data storage and data transfer give rise to the following concerns:

[3] https://www.internetsociety.org/wp-content/uploads/2017/09/Assessment-of-the-impact-of-Internet-Exchange-Points-%E2%80%93-empirical-study-of-Kenya-and-Nigeria.pdf

(i). Data storage requirements do not by themselves enhance privacy. Data protection hinges less on where data is stored and more on how data is secured. If anything, onshore storage requirements introduce further risk as data is required to move back and forth. It may be counterproductive to introduce multiple and unnecessary entry points into a data system as it degrades efforts to improve latency and complicates system monitoring and recovery programs.

(ii). Stringent local data retention requirements and transfer restrictions will restrict the growth of the Indian digital economy. If such requirements are enforced, businesses will be compelled to overhaul their processing and storage practices in India. This will drive up the costs of doing business in India and substantially complicate the ease of doing business as well. For small and medium sized businesses, the compliance challenges could be wholly prohibitive and could stifle their growth in the Indian market. We recognise that "cross-border data flow restrictions, as well as the variance in transfer requirements together can form formidable barriers for businesses."[4] Accordingly, we suggest the adoption of a more flexible approach with respect to data transfers. For instance, consent should be just one of the several grounds for transferring sensitive personal data as obtaining explicit consent may not be appropriate in all situations (such as debt recovery, mergers & acquisitions, cyber-security). Further, to ensure interoperability in global data privacy laws, data transfers should take place in accordance with codes of conduct / certifications along with a mechanism to ensure accountability, instead of relying on adequacy standards.

[4] https://www.salesforce.com/content/dam/web/en_us/www/documents/white-papers/data-beyond-borders-2.pdf