



IAMAI Submission on Data Centres, Content Delivery Networks and Interconnect Exchanges

The Internet & Mobile Association of India (“IAMAI”) is a not-for-profit industry body representing the Indian online and mobile value-added services sectors. We are dedicated to presenting a unified voice of the Indian internet and technology businesses at large.

IAMAI would like to begin by commending TRAI for identifying the immense economic potential associated with Data centres, Content Delivery Networks (CDNs) and Interconnect exchanges. The internet has proved itself to be an important tool for India’s economic journey, and the proliferation of internet technologies has a key role to play in expanding the digital economy. This submission represents view of majority of our members but two of our members, viz. Reliance Jio and Bharti Airtel have divergent views.

At the outset, we would like to highlight two positions which are critical to any conversation around Data Centres (DCs), CDNs and their potential. First, CDNs are a budding service which have seen a rapid increase in adoption. Not only has this allowed for a better quality service to be provided to internet users, but has also created investment in CDNs as new enterprises as well as verticals within larger tech organisation.

Second, we welcome the TRAI’s acknowledgment that, for data centres to flourish, operators must have greater access to communications infrastructure such as dark fibre and regulatory barriers should be eliminated. However, current Indian regulations are not favourable for existing licensed players to lay fibre at the required pace, to match the growing demand of DCs, in the country. In addition, we note that the law restricts the construction of dark fibre networks, as well as access to dark fibre from Infrastructure Provider-1 (IP-1) companies to licensed entities alone. Data centre operators are unable to buy or lease dark Fibre in order to construct, operate, and efficiently manage their own networks, as configured to their own specialist requirements, and optimised for customers. Instead, these operators are forced to procure network connectivity services from Telecom Service Providers (TSPs), who in turn are constrained by existing regulations, specifically owing to challenges associated with RoW and absence of any common duct policy. This should also be addressed by providing required push to increase the ease of doing business for TSPs in creating the required fibre network in the country.

We understand that TRAI has already released its recommendation on scope of IP-I players but IAMAI would still like to highlight the position we had taken in our response to TRAI’s



consultation paper on Review of Scope of Infrastructure Providers Category – 1 (IP – 1) Registration, where the importance of enterprises being able to have access to active infrastructure directly from IP-1 was highlighted. Specifically, IAMAI stated that *‘Current Indian law does not allow unlicensed entities, including CSPs, to access passive infrastructure such as dark fibre from IP-I companies for any purpose. Thus, CSPs are unable to buy or lease dark fibre in order to construct, operate and efficiently manage their own networks (configured to their own specialist requirements and optimized for customers). CSPs presently are forced to procure generic network connectivity services from local TSPs. This is problematic because traditional networks operated by TSPs are principally designed for voice or public data services, such as IP services. They are not suitable for cloud services, which require very high availability, bandwidth and low latency for extremely high amounts of data. Providing cloud services utilising TSP services is especially difficult given India’s vast geography and relatively limited existing technology infrastructure and broadband deployment. The services provided by TSPs are also substantially more expensive than buying or leasing dark fibre from IP-I companies, and also significantly more expensive than similar services available in other countries.’*¹

As the above excerpt illustrates, access to infrastructure such as dark fibre will play a defining role in shaping India’s tech economy, and that the status quo has become a consistent source of inefficiencies in the value chain.

IAMAI Response

- **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?**

As part of its goals in the Digital India Initiatives and with the pandemic’s impact of rapidly increasing reliance on digital and web-based services, India has astutely identified the growth potential of becoming a data centre destination of choice for the world’s largest companies. The consultation paper summarizes the different incentives being offered to data centres by various Indian states to promote the establishment of data centres within such states.

At the core of encouraging the data centre industry lies infrastructure sharing to reduce costs, and also to facilitate greater competition. This would guarantee better quality of service and lower costs for consumers and businesses alike. The government should consider ways in which such costs can be reduced while also reducing regulatory costs, such as single window clearance systems, tax breaks and import duty exemptions for key infrastructure, reducing barriers to enabling infrastructure (for e.g., incentives for

¹ IAMAI Response to TRAI Consultation Paper ‘Review of Scope of Infrastructure Providers Category – 1 (IP – 1) Registration’

renewable energy and direct access to captive power plants) and less expensive deployment of connectivity infrastructure by encouraging passive infrastructure sharing, accompanied by streamlined licensing processes and fees for granting right-of-way (including faster timing of such procedures and processes).

Further, there is a lack of clarity about the manner in which data of domestic and foreign companies and data subjects will be treated, and the absence of the same is likely to act as a disincentive for foreign companies to set up data centres in India, thereby hurting India's goal of emerging as the world's next data centre hub. Two ways to remedy this issue and assure greater certainty to companies are listed below.

First, for entities having foreign-owned data setting up data centres in the special economic zones for data centres and data centre parks could be provided partial havens with respect to requests from law enforcement authorities requests. The rationale for the same would be the same as that for other exemptions provided to entities setting up data centres in India, such as envisaged relaxations under tax laws and labour laws to increase the ease of doing business for such companies. Secondly, the PDP Bill 2019 could be amended to acknowledge that foreign-owned data will be subject to the laws of the originating country. To be meaningful, such provision would need to ensure that law enforcement authorities should not be able to access such personal data to the extent that such access runs contrary to guaranteed protections provided to the personal data in the originating jurisdiction. This protection would go a long way towards allaying the concerns of cloud service providers with respect to locating their servers in India and attract greater business to India. For one, this move would guarantee to cloud service providers that they would be able to comply with relevant jurisdictional safeguards imposed by foreign regulators vis-à-vis personal data of foreign data subjects.

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.

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

As mentioned above, dark Fibre networks are presently considered telecom infrastructure, and data centre operators are not allowed to construct or operate their



own captive Fibre optic networks. This is a hinderance, as the regulatory challenges being faced by TSPs makes it challenging for them in offering the required fibre connectivity to the DCs. Considering that the cloud services require very high availability, bandwidth, and low latency for extremely high amounts of data, there is often a need for dedicated dark fibre for DCs; which TSPs may find difficult to offer in current challenging environment .

On cost comparison, buying or leasing dark fibre is significantly more expensive than similar services available in other countries. As a result, data centre networks in India have a higher latency, are less reliable, and are more expensive than corresponding services in other countries. This discourages investment in technology and cloud businesses in India and hinders growth of the technology industry.

TRAI has noted that the value of dark Fibre has increased because of the ‘need for greater connectivity and faster performances.’ IAMAI is fully supportive of increasing access of data centre operators to infrastructure which will allow the industry to be as efficient and competitive as possible.

- **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.**

We recommend promotion of new International Cable Landing Stations other than Mumbai and Chennai to further encourage to set up hyperscale Data Centre in cities like Pune, Hyderabad, Bangalore, and Kolkata. The diverse cable landing infrastructure will also offer options to connect with multiple Data Centers, thus providing highly resilient and stable connectivity solutions. It would be immensely beneficial to the industry if the government encourages new entrants to the market to build, land and operate submarine cable systems, rationalizing access charges, removing regulatory hurdles and minimise hindrances to foreign ownership/investment to create more open access international cable infrastructure to seamlessly connect domestic data Centre with international Data Centre. This will encourage global and domestic carriers to land more subsea cables into India and improve its international connectivity. We also seek government’s support to ease current permitting approvals and processes for Submarines cable restoration, impacted during the operation stage. The current lead time for securing these approvals are around 12-16 weeks, in comparison to 3-4 weeks in markets like Europe, Singapore, and US. In the period of October 2021 to January



2022, four key submarine cable systems were out of service connecting India to Europe and two of these were impacted due to submarine fiber cut in Indian territorial waters.

We also recommend developing a facilitating ecosystem comprising Infrastructure (Land, Electricity, Telecom Connectivity and other civil infrastructure) and skilled human resource, will be crucial in attracting and spreading data centres to the Tier-2 and Tier-3 cities and other regions. It would create an enabling environment for establishment of Data Centres in these areas. In his regard, we suggest an Improvement in Power Supply.

The creation of facilitating infrastructure like, highways and road connectivity, Air travels, Freight corridors is already on a fast track. However, the availability and reliability of power supply should be improved using the smart grid systems. We also recommend introducing Incentives to data centres in the form of demand. 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 Data Centers. 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 Data Centres. 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 Data Centres at these places.

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

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.

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

IAMAI believes that adopting global standards, and not investing in new domestic standards for testing and certification would be a more suitable policy decision for a

rapidly growing industry. Global standards have been developed after rigorous testing and experimentation by various experts across different geographies and with the combined resources of many stakeholders. Setting out a new, India-specific standards and certification framework does not guarantee better outcomes, especially because time-tested standards could be ignored in this process, and potential inconsistencies with established standards could add unnecessary complexity to doing business in India.

It is submitted that the aim of the government's standards framework should be to ensure that the underlying requirement is met, instead of prescribing a specific standard for companies to comply with. Many different global standards may be suited to achieve similar objectives, and we request that the government provide enough flexibility to data centre operators to adopt different global standards, as long as the final requirement is being met.

- **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.**

Security and compliance responsibilities are shared between the data centre operators and their customers. At the same time, it is important to leverage industry best practices on security and audit as they ensure proof that data centre have effective physical and logical security controls in place, as opposed to mandating strict audit requirements that are incompatible with data centre operated on a global scale. Such audit requirements may potentially hamper routine operations due to excessive scrutiny.

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

We recommend the enablement of the use of Virtual Power Purchase Agreements (VPPAs), support the bi-lateral transfer of renewable energy certificates to end-consumers, and remove open access restrictions. These regulatory hurdles impede

growth of the corporate renewable energy procurement market and encumber data centre operators from achieving their renewable energy goals.

- **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?**

The CDN market is competitive and does not have significant barriers to entry. Many companies offer commercial CDN services: some of them have been established for decades while others are relatively newer companies (Akamai IPO'd in 1999, Fastly in 2019). Some companies chose to implement their own CDN solution and have been successful in doing so and bringing benefits of local content delivery to their global audience. Evidence of high competition is that the prices for CDN services are constantly dropping. There is no evidence of market failure and as a consequence no need for regulation.

The consultation alludes that dominant network could dictate terms for interconnection with smaller networks. Similarly, dominant ISPs could create exclusive tie-ups with CDNs or content providers excluding other players from direct access on equal terms. While these concerns are legitimate, it is important for the regulator to adopt a cautious approach when intervening with ex-ante regulations. Any regulations that fail to reflect market realities can throttle growth of the data economy in India.

It is worth noting here that the Department of Telecommunication's expert committee on Net Neutrality had recommended that since CDN interconnection arrangements are business decisions, discrimination in access or adoption of anti-competitive practices is best left to be covered under competition laws, although we understand that TRAI did state in its recommendation that there may be requirement for disclosure and transparency requirement related to arrangements between CDNs and TSPs/ISPs or internet companies.

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

Customers subscribe to an internet access service from an ISP in order to be able to connect to the entire internet. ISPs have a duty to their customers to enable full connectivity, and do so through a mix of transit and peering. This requirement of full



connectivity creates a mutual incentive for ISPs and CDNs to interconnect directly and to localise traffic as much as possible. The cooperation between CDNs and ISPs is crucial in providing end-users in India with a scalable and high-quality experience when using online services and consuming online content, and leads to mutual benefits of improved efficiency and lowered costs.

When an ISP has a mix of uncongested peerings and transit with 'Transit ISPs' (ISPs who provide IP Transit connectivity services to third parties), content providers that cannot interconnect directly (because of distance for example) will be able to exchange traffic without degradation through Transit ISPs. The ISP and/or the content provider will then pay a competitive fee reflecting the provision of a transit service. We recommend TRAI continues to pay close attention to the role of Transit ISPs in delivering an open internet: a competitive and open IP Transit market is needed for an efficient Internet development in India.

In some cases, ISPs, especially when vertically integrated with a Transit ISP, use their position over access to customers in order to extract fees from CDNs instead of working together to provide the best quality of service under a more cooperative approach.

These 'gatekeeper' fees lead to perverse incentives for the ISPs as the only way to force a CDN to pay is to ensure the congestion of all alternative routes (through Transit ISPs) into the ISP's network. Such restrictive interconnection practices have two consequences. First, customers of the ISP will receive poor performance on any content or service not directly connected to the ISP, despite paying for access to the entire internet, and second, the only alternative for a content provider will be to either pay a termination fee or suffer congestion and quality degradation. Such an outcome, which would violate the principles of net neutrality; would be detrimental to the development of the Internet in India. We recommend TRAI continues to monitor for such anticompetitive practices and take action should they materialize.

- **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.**

The absence of barriers to entry for prospective IXPs is testament to the fact that there is only need for light touch regulation, if any. Considering the small investment and simple technology required to start IXPs, there should be minimal intervention in the market. Owing to this IXPs are not subject to licencing requirements anywhere in the world, a precedent which TRAI should refrain from setting.



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

As stated in the consultation paper, IXPs could be successful using a model which might be cooperative, not for profit or commercial. Generally, the strategy of charging a per port fee along with a member or customer fee has been globally successful.

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

Informed policymaking has repeatedly demonstrated that mandating a type of activity in the marketplace makes it susceptible to disruptions and inefficiencies, particularly considering the way it has grown without regulation. Such a mandate would also effectively subsidise IXPs, removing the incentive for IXPs to be competitive.