

February 9, 2022

Shri Sanjeev Kumar Sharma
Advisor (Broadband and Policy Analysis)
Telecom Regulatory Authority of India (TRAI)
Mahanagar Doorsanchar Bhawan
Nehru Marg (Old Minto Road)
New Delhi, 110 002

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

Dear Shri Sharma,

Since our inception in 1975, The U.S.-India Business Council (USIBC) has tirelessly promoted an inclusive bilateral trade environment between India and the United States, and consistently advocates for a strong, strategic bilateral relationship in support of entrepreneurship, job creation and economic growth. We participate in stakeholder dialogue to ensure that India's digital economic growth flourishes on par with the global digital and e-market ecosystem. As you may know, USIBC is an integral part of the U.S. Chamber of Commerce, the largest business advocacy organization in the world, operating in over 50 countries to promote free enterprise and advance trade and investment, representing companies of every size and from every sector. USIBC directly represents approximately 200 companies based in India, the United States, Europe, and friendly Asia nations.

Our membership includes broadcasters, telecom operator, equipment manufacturers, systems integrations, and companies reliant on secure, trusted and efficient global communications networks. Our members also include e-commerce, sharing economy, and a diverse set of digital enterprises, as well as the technology service providers and product producers that support and enable India's rapidly expanding digital economy and telecom manufacturing sectors. In short, USIBC promotes a broad set up digital policies focused on promoting bilateral trade and commerce, creating a transparent and attractive investment environment, and the general ease of doing business.

USIBC has a long history of working with Telecom Regulatory Authority of India (TRAI). Most recently, we hosted the TRAI Chairman at our West Coast Digital Summit which focused on new technology and start-ups in coordination with the Ministry of Electronics and Information Technology (MeitY) Start-up Hub (MSH). As a U.S. co-chair of the U.S.-India Information and Communications Technology Working Group (ICTWG), we also develop strategies for long-term, multi-stakeholder cooperation. We support technical interactions, such as quantum computing, artificial intelligent, and other strategic technologies.

Focusing on the consultation paper at hand, at the outset, we would like to take this opportunity to thank TRAI for bringing out the much-needed discussion about data networks and architecture. The following summarizes our thinking about this critical element of the data economy.



Content delivery networks (CDN): The marketplace for CDNs is robust, growing and currently going through an important technological and business transformation, which underscores the need for light-touch, flexible regulations. TRAI correctly notes the many benefits of CDNs to the development of the Internet, such as improved performance, ability to better handle traffic loads and peak, localized traffic delivery and reduced bandwidth, load balancing and security. The technology is evolving and some commercial CDNs refer to themselves as “Edge Computing.” As noted in the consultation paper, India’s CDN market will witness a growth of over 700 percent during the period 2018 – 2027 (from \$435 million in 2018 to \$2,847 million by 2027). As a consequence, **TRAI should consider a cautious approach so as to not stifle CDNs growth in India.**

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 such as Akamai (1999 IPO) or Fastly (2019). Some companies such as Netflix have chosen 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.¹ **There is no evidence of market failure and as a consequence no need for regulation.**

CDN are not telecommunications operators and should not be regulated as telecommunications providers. CDNs require fundamentally two things: servers for computing and storage, as well as 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). **CDNs do not require a license to operate as such in any countries and TRAI should not set this precedent.**

CDNs and Internet Service Providers (ISPs) connect through transit and peering like all networks over the internet. Internet interconnection is an extremely competitive and open market and should not be regulated. Over 35,000 networks comprise the Internet² and in 2012, the Organisation for Economic Co-operation and Development (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 organisation, the Internet model of traffic exchange has produced low prices, promoted efficiency and innovation, and attracted the investment necessary to keep pace with demand.*”³ The efficient nature of the Internet interconnection market continues to be validated by the constant decline in prices.⁴

The consultation alludes that dominant networks 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 (DoT) expert committee on net neutrality had recommended that since CDN interconnection

¹ <https://www.streamingmediablog.com/2020/05/q1-cdn-pricing.html>

² Daniel A. Lyons. "An Antitrust-Informed Approach to Regulating Internet Interconnection." *Journal of Science & Technology Law* 24, no.2 (2018): 229-276.

³ https://www.oecd-ilibrary.org/science-and-technology/internet-traffic-exchange_5k918gpt130q-en

⁴ <https://blog.telegeography.com/global-ip-transit-prices-decline-pandemic-covid19>

arrangements are business decisions, discrimination in access or adoption of anti-competitive practices is best left to be covered under competition laws.

Internet exchange points (IXPs): IXPs are important players of the data economy and the willingness of TRAI to encourage their adoption should be saluted. IXPs that successfully attract a sufficient number of members create network effects that strongly 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, consultancy Analysys Mason noted that “*Overall, the 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.*”⁵

There are no barriers to entry for creating IXPs and therefore, low touch regulation is warranted. In its simplest form an IXP is made up of a simple layer 2 network switch worth a few hundred dollars. **IXPs do not require a license to operate as such in any countries and TRAI should not set this precedent.**

Successful IXPs have simple and sustainable business models. TRAI rightly notes that multiple successful models exist for IXPs, whether cooperative and not-for-profit or commercial IXPs. The most successful IXPs around the world charge a per-port fee and are sustained by their members or customers' fees.

Mandating networks to join IXPs would be poor policy that will result in market distortions and inefficiencies. It would amount to a regulatory intervention in the interconnection market, which has thrived so well without any regulation. It may also amount to an indirect subsidy of IXPs, whereas the most successful IXPs around the world are sustained by their members or customers' fees.

Data Center Security Certification (Q.13): USIBC members have working experience with the India's Trusted Telecoms Regime as outlined via the National Security Directive on Telecommunication Sector (NSDTS), and as a result, strongly recommend against including data center equipment. India currently has several, overlapping conformity testing regimes, and as the trusted source program has led to confusion among industry stakeholders and has slowed down the purchase and deployment of telecom networks. There is strong market demand for data centers in India and adding data center equipment to the NSDTS system could slow down investment and construction of new centers and expansion of existing centers.

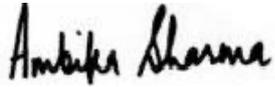
Further, USIBC members support the utilization of the Common Criteria Certification Scheme (CC) as an international standard for computer security that allows product users and developers to identify relevant security requirements and evaluate solutions. CC also includes the use of 3rd party audits such as those recognized by the Indian Common Criteria Certification Scheme (IC3S).⁶ Since the Government of India (GoI) recognizes the CC, TRAI should refer any concerns the Standardisation Testing and Quality Certification (STQC) Directorate within the Department of Telecommunicators which oversees CC compliance on behalf of the GoI and industry.

⁵ <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>

⁶ Indian Common Criteria Certification Scheme(IC3S) | Indian Common Criteria Certification Scheme (commoncriteria-india.gov.in)

Should you have any questions, please do not hesitate to contact me or my team: Jay Gullish, jgullish@usibc.com in Washington, D.C. Meanwhile, USIBC is committed to enhancing commerce and investment between India and the United States and appreciate that our submission will be given due consideration.

Warm Regards,



Ambika Sharma
Managing Director- India,
U.S.- India Business Council