



February 10, 2022,

New Delhi

To,

1. Dr. P. D. Vaghela,
Chairman
Telecom Regulatory Authority of India
2. Mr. Sanjeev Kumar Sharma
Advisor, Broadband and Policy Analysis
Telecom Regulatory Authority of India

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

Dear Sir(s),

We are delighted to be afforded the opportunity to respond to the consultation paper on the regulatory framework for promoting data economy through establishment of data centres, content delivery networks, and interconnect exchanges in India (the 'Paper'). To begin with, we laud your effort to improve consumer access and consumer welfare towards digital infrastructure.

India's digital ecosystem became prominent over the last decade, primarily due to the unprecedented adoption of smartphones, and affordable access to internet infrastructure. Recognising this virtuous cycle, the Ministry of Electronics and Information Technology (MeitY) announced a policy target to achieve a USD 1 trillion digital economy.¹ It is also worth revisiting the G20's Digital Ministers Declaration, 2021 which calls for developing policies that foster investments in data infrastructure and architecture that can have positive spillovers across industries and society.²

Conceptual Feedback

In this context, we find weak linkages between some of the questions raised in the Paper and the national policy objective to deepen the digital economy. The exploratory nature and limited context accompanying questions pertaining to the need for a level-playing field between content delivery networks (CDNs) and telecom service providers (TSPs), are a case in point. In our research, we were

¹ Press Information Bureau, Ministry of Electronics and IT, 'Sh. Ravi Shankar Prasad Meets the Industry Leaders to Develop a Roadmap for US\$1 Trillion Digital Economy'; available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=165697>

² <https://assets.innovazione.gov.it/1628084642-declaration-of-g20-digital-ministers-2021final.pdf>



unable to find any global analogues, and similarly, a lack of domestic data to suggest or anticipate a market failure.

We therefore propose that the TRAI embrace a combination of comparative research on regulatory best-practices, as well as Regulatory Impact Assessments (RIA) to evaluate the potential implications of state-interventions of the kind suggested in the Paper. An evidence-based approach can help avoid unintended outcomes that harm markets or consumers. We outline specific challenges with respect to the issues discussed in the Paper below.

Specific Feedback:

1. Data Centres:

Data centres perform the essential functions of storing and processing data. Regionally located data centres allow these activities to take place in a location closer to hotspots of demand for such processing and storage, thereby minimising latency and carriage costs.³

Therefore, we welcome TRAI's efforts to bolster India's position as a data centre hub. However, we are given to understand that the Ministry of Electronics and IT (MeitY) is already in the process of finalising a comprehensive data centre policy. MeitY's data centre policy. In this context, the MeitY has already concluded a public consultation in November, 2021. The draft policy, among other things, aims to make India a Global Data Centre hub, promote investment in the sector, propel digital economy growth, enable provisioning of trusted hosting infrastructure to fulfil the growing demand of the country and facilitate state of the art service delivery to citizens.

To this end, the draft contain proposals related to – (a) regulatory and compliance roadblocks; (b) access to supply side factors such as electricity, water, captive fibre networks, and labor and skilled workforce; (c) building code; (d) data centre security and import dependence; (e) research and development in the ecosystem, and (f) institutional mechanism for policy governance.

We submit that the TRAI should maintain regulatory/supervisory forbearance with respect to formulating any policies/regulations on data centres. Else, it will confuse market participants and inadvertently disrupt policy efforts to encourage private sector investments in the data centre ecosystem.

2. Content Delivery Network

a. Net Neutrality

CDNs are key to enhanced efficiency of access service providers like ISPs and TSPs, and therefore to online consumer experience. To put it differently, CDNs enable faster delivery of internet content by reducing both the geographic distance that data packets must travel and the number of network hops that they have to make. They often have direct interconnection points with last-mile networks which can lead to higher traffic quality when delivering content to consumers. However, this quality improvement is not seen as a violation of the principle of net neutrality, as all traffic within the last-mile network is continued to be treated equally.

³ Latency rate is defined as the delay in data communication over a network.



The Net Neutrality framework in India was developed on the basis of extensive stakeholder consultations by the TRAI and DoT. In its Recommendations on Net Neutrality dated November 28, 2017, TRAI noted that CDNs perform an important function in delivery of traffic on the Internet. In doing so, CDNs serve to benefit not just the faster delivery of content housed on these networks but also other content that can travel faster due to freeing up of network capacity. Accordingly, the TRAI recommended that CDNs should not be included within the scope of any restrictions on non-discriminatory treatment, which are designed specifically to cover the providers of Internet Access Services.

Similar recommendations were made by the DoT's Expert Committee Report on Net Neutrality in 2015⁴. With respect to interconnection/peering arrangements between CDNs and ISPs/TSPs, the expert committee concluded that arrangements between CDNs and ISPs/TSPs are *a normal business activity. Discrimination in access or adoption of anti-competitive practices by them is best left to be covered under the law related to unfair trade practices.*

Globally, interconnection services have evolved in response to the growth in the volume and diversity of Internet users, content, and applications. When the Internet backbone was privatized in the 1990s, it reflected a hierarchical structure similar to the traditional telephone network: last-mile networks serving end-users contracted with regional ISPs, each of which in turn contracted with a private backbone provider to carry traffic to the Internet. However, as network players faced congestion, they resorted to multipathway structures where content was more efficiently delivered through interconnection and peering arrangements.⁵ As a result, the interconnection market has remained competitive. Prices for transit or CDN services continue to decline at a pace corresponding to increase in IP traffic, due to competitive pressures as well as technological progress. Therefore, CDN prices witnessed a decrease of over 300% during the period 2017 – 2020⁶.

Dense interconnected networks help promote the Internet as a tool to enable information and knowledge societies. Therefore, we recommend that the TRAI should refrain from adopting any ex-ante regulations in the CDN interconnection market, and that any concerns related to anti-competitive practice should be dealt with by the Competition Commission of India. This should be done on account of the economic and welfare impact of a market conduct on competitors and consumers alike.

b. Level-Playing Field:

With respect to concerns raised in the Paper on the presence of uneven field between telco CDNs and other players, we recommend that CDNs (whether operated and owned by TSPs or otherwise) should not be subject any licensing or regulatory obligations because they are not a

⁴ DoT Committee Report, Net Neutrality, available at https://dot.gov.in/sites/default/files/Net_Neutrality_Committee_report%20%281%29_o.pdf

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<https://deliverypdf.ssrn.com/delivery.php?ID=816116074064001017080019089069022081024036042028091005105067118026092074091072092126009003116014006009030066118029108096097080114026028080092002071099117110100079004069007026081067120126027101089098086074123065113123078113095099079071121111102006007&EXT=pdf&INDEX=TRUE>

⁶ <https://www.streamingmediablog.com/2020/05/q1-cdn-pricing.html>



telecommunications service or Internet access service, and do not provide Internet access service to end users.

Moreover, internet access service providers such as TSPs and ISPs operate “last mile” infrastructure that enables users to access the public internet, CDNs are merely “middle-mile” technology architecture, which are not regulated in mature markets such as the European Union⁷, and the United States⁸. That is, CDNs have no relationship with end users. CDNs rely on ISPs to deliver online content to end-users as they manage the complete network routing process end-to-end. Therefore, the question level playing field does not arise.

⁷ Draft BEREC Report on IP-Interconnection practices in the Context of Net Neutrality, https://berec.europa.eu/eng/document_register/subject_matter/berec/public_consultations/7092-draft-berec-report-on-ip-interconnection-practices-in-the-context-of-net-neutrality

⁸ FCC, Restoring Internet Freedom Order, <https://www.fcc.gov/document/fcc-releases-restoring-internet-freedom-order>