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New Delhi – 110002

Subject: **COAI Response to TRAI Consultation Paper on Digital Inclusion in the Era of Emerging Technologies**

Dear Sir,

This is with reference to the TRAI's Consultation Paper on "Digital Inclusion in the Era of Emerging Technologies".

In this regard, please find enclosed COAI's response to the Consultation Paper.

We trust our above request would merit your kind consideration and look forward to your valued support on the same.

With Regards,

Digitally signed
by Lt. Gen Dr. SP
Kochhar
Date: 2023.12.29
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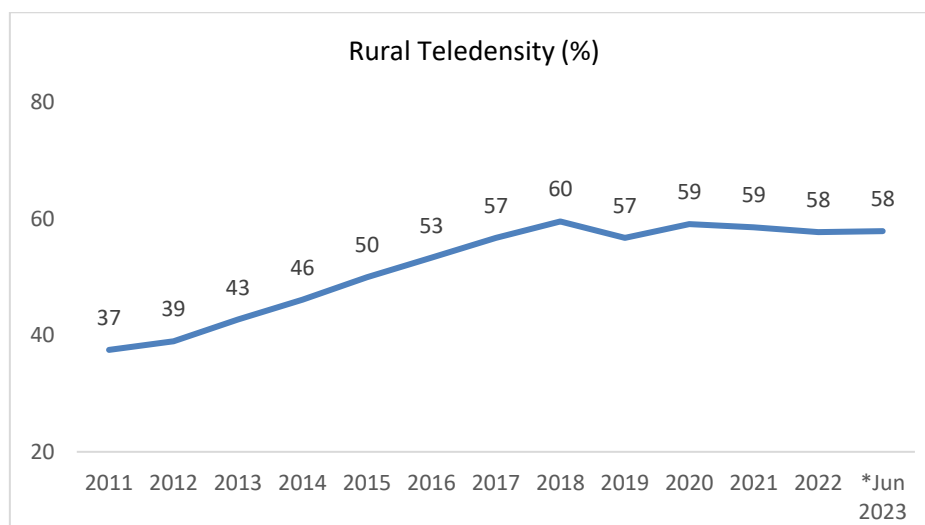**Lt. Gen. Dr. SP Kochhar**
Director General

Copy to:

1. Shri V Raghunandan, Secretary, TRAI, Mahanagar Doorsanchar Bhawan, Jawaharlal Nehru Marg, New Delhi – 110002.

2. Shri Mahendra Srivastava – Pr, Advisor (CA, QoS, IT), TRAI, Mahanagar Doorsanchar Bhawan, Jawaharlal Nehru Marg, New Delhi – 110002.
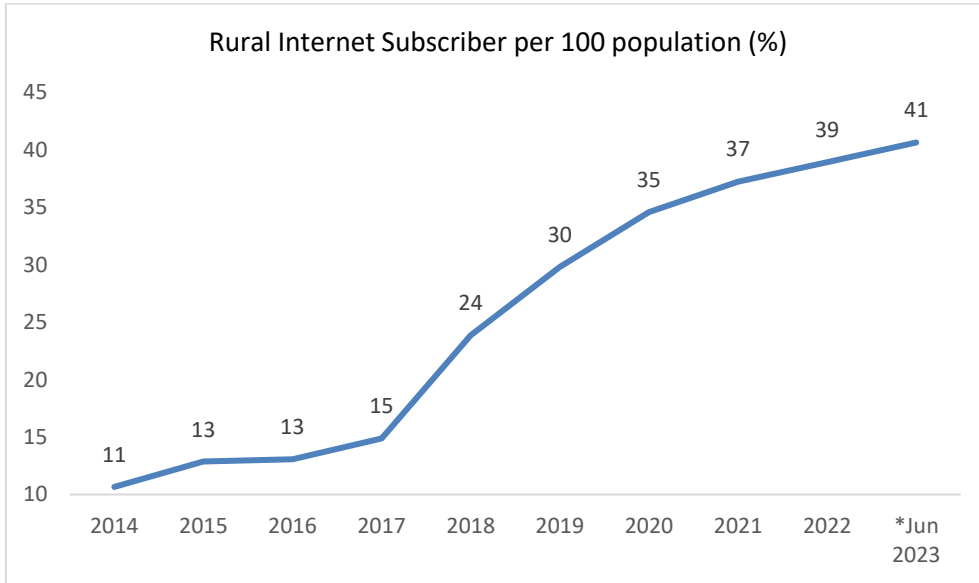
COAI Response to TRAI CP on Digital Inclusion in the Era of Emerging Technologies

1. We thank the Authority for providing us with the opportunity to submit our response to the very relevant Consultation Paper on "Digital Inclusion in the Era of Emerging Technologies".

2. Digital inclusion is the concept of ensuring that all individuals and communities, particularly those who are historically marginalized or underserved, have equitable access to and effective use of digital technologies and the internet.

3. We believe that Digital Connectivity, Digital Affordability and Digital Literacy are the main factors that lead to Digital Inclusion. These factors are responsible for creating a digitally aware society.

4. Further, we believe that in order to improve digital literacy, a fair distribution of digital opportunities across locations, gender, socioeconomic status and age is required.

5. Telecom Service Providers (TSPs) have played a key role in creating the necessary digital infrastructure, and distribution of digital opportunities across India and have emerged as the cornerstone of India's digital evolution, diligently striving to establish widespread connectivity, even in the most remote regions. TSPs have ensured that the benefits of digitalization are universally accessible. Their commitment is evident in their massive investments in spectrum acquisition, network deployments and the introduction of cutting-edge technologies.

6. Over the past ten years, we find a massive surge in rural tele-density in the country from 37% to 58% despite challenges around economics and technical aspects like remote areas/RoW etc. Subsequently, we also find there has been a sharp increase in the internet subscribers in rural areas from 11% to 41% which indicates a robust transformation towards digital inclusion.
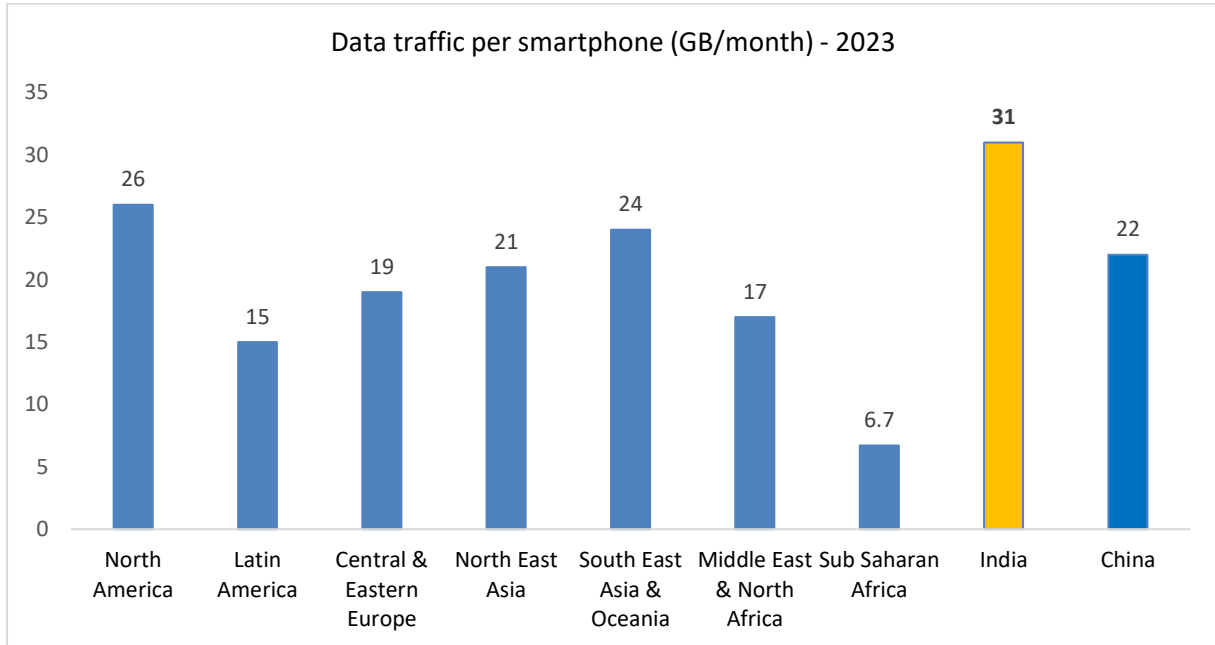

Rural Teledensity (%) — chart showing values: 2011: 37, 2012: 39, 2013: 43, 2014: 46, 2015: 50, 2016: 53, 2017: 57, 2018: 60, 2019: 57, 2020: 59, 2021: 59, 2022: 58, *Jun 2023: 58

Rural Internet Subscriber per 100 population (%)

Source: TRAI

7. Driven by competition and market forces, the TSPs in India today offer the most affordable digital accessibility in the world.
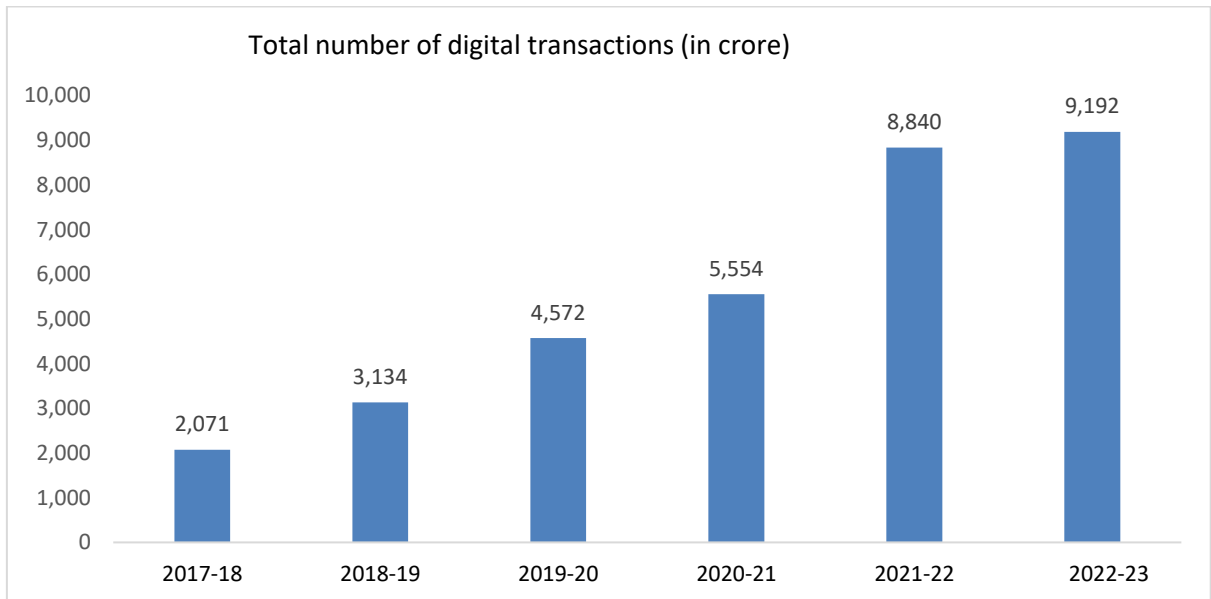

Price per GB in USD
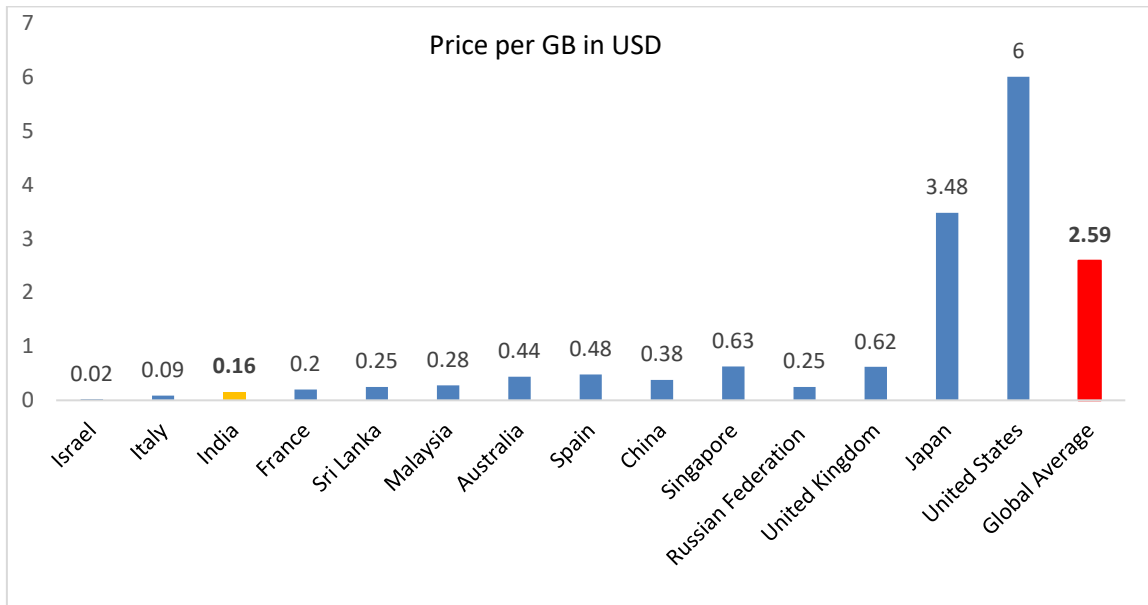
Source: World-wide mobile data pricing- June -September 2023

8. The affordable service offered by our member TSPs have spurred widespread data usage throughout the nation. This has led to India boasting the highest data consumption which is a testament to the significant role played by our member TSPs in fostering digital inclusion.

Data traffic per smartphone (GB/month) - 2023

Region	Value
North America	26
Latin America	15
Central & Eastern Europe	19
North East Asia	21
South East Asia & Oceania	24
Middle East & North Africa	17
Sub Saharan Africa	6.7
India	31
China	22

Source: Ericsson Mobility Report – 2023

9. By virtue of their contribution, **TSPs have complimented the various policies of the Government** such as Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA), Pradhan Mantri Jan Dhan Yojana (PMJDY), PM E-Vidhya, DIKSHA, National Education Policy, and Digital Mobile Library which enhance Digital literacy and Digital accessibility. These efforts underscore a commitment to empowering citizens with the tools needed for a digitalized future, fostering inclusivity and equitable access to educational resources and opportunities.

10. Further, Unified Payment Interface (UPI), developed by Reserve Bank of India in collaboration with National Payments Corporation of India has rode on the back of broadband networks (wireless and wireline both) to revolutionize the Indian digital payment landscape, achieving unparalleled success since its launch. Offering a seamless and instant fund transfer mechanism, UPI has fostered financial inclusion, empowering millions to engage in cashless transactions and its interoperability across various banks along with payment platforms has simplified the payment process for users and businesses alike. With a user-friendly interface and robust security measures, UPI has become a catalyst for the government's push towards a cashless economy, propelling India into the forefront of digital inclusion.

Total number of digital transactions (in crore)

Year	Value
2017-18	2,071
2018-19	3,134
2019-20	4,572
2020-21	5,554
2021-22	8,840
2022-23	9,192

Source: PIB

11. **Clearly, without massive investments by TSPs in expanding telecom networks to nook and corner of Bharat, and providing the connectivity at a most affordable price, the benefits of these Government initiatives and digital lifestyle would not have reached the entire gamut of citizens.**

12. However, there are policy challenges that need to be addressed to make digital connectivity infrastructure more pervasive. Charging Universal Service Levy of 5% of Adjusted Gross Revenue (AGR), to fund the Universal Services Obligation Fund (USOF) on TSPs has been a major burden on the TSPs. **By abolishing USOF levy, TSPs would be incentivised for further expanding and deepening their network, including 5G services in underutilized and far-flung areas of the country thereby contributing expansively to improving tele-density and hence digital inclusion.** The abolition of levying USOF will further strengthen the cashflow of the TSPs that will enable them to further invest and contribute to enhance Digital Inclusion in the country.

13. In this regard, we further submit that a substantial corpus of Rs. 75,689 Crore remains unutilized in the USOF, and the same can be used for expanding the wireline and wireless network in the rural and far-flung areas of the country.

14. We submit that the TRAI Recommendation on Improving Telecom Infrastructure in Northeastern States of India, released on September 23, 2023, and TRAI Recommendation on Improving Backhaul Telecom Infrastructure in far flung areas of Himachal Pradesh, released on September 29, 2023, are very progressive and conducive for enhancing Digital Inclusion. We believe that these recommendations should be implemented at the earliest for further development and maintenance of the already present infrastructure as well as increasing investment to further build the infrastructures in the hilly and remote areas of the country.

15. Further, to enhance faster deployment of 5G network to enhance digital inclusion in the country, we submit that TRAI recommendations on "Use of Street Furniture for Small Cells and Aerial Fibre deployment" released on 29.11.2022 should be implemented.

16. Indices such as GSMAs Mobile Connectivity Index, Alliance for Affordable Internet's Affordability Drivers index (A4A1) as well as Network Readiness Index talk about the Digital affordability, Digital Connectivity and Digital Literacy. We believe that the indices mentioned above and developed by various international organisation **can be used to assess the status of Digital Inclusion in the country based on the circumstances and factors which are contextually prevailing in India** and not based on the parameters that have been used in other countries. Accordingly, it is important that the Indian government suitably modify these parameters keeping in mind the Indian context, socio-economic behaviours and all other related aspects. Adopting these indicators without contextualising them in terms of the Indian dynamic may lead to a situation of under delivery or irrelevance.

17. In the case of India, **tele-density including rural tele-density, data usage per subscriber, average outgo per subscriber, number of digital payments, are some of the good indicators for evaluating and monitoring digital inclusion progress in the country which are already tracked by the government**. These measure the penetration of telecommunications services, reflecting the accessibility and usage of communication technologies among the population. A higher tele density implies broader connectivity, indicating increased digital access and participation.

18. By monitoring **these parameters, policymakers can assess the effectiveness of initiatives** aimed at enhancing digital inclusion, ensuring that a larger segment of the population has access to and benefits from telecommunications services, thereby contributing to overall socio-economic development. Hence no new or additional parameter is required.

19. Also, for the purpose of digital inclusion, the development, **tracking and monitoring of a dashboard by the Government should be simple, and without the imposition of a new mandate on the TSPs/ industry**. The already available parameters can be provided by sectoral regulators/ line ministry, and no target/regulatory mandate on TSPs should be linked to it. The KPIs for digital connectivity sector i.e. TSPs should be consistent and in consonance with India's licensed service area (LSA) based licensing regime.

It is with this background in mind that we provide our response to questions raised by the TRAI in the paper.

Q1. What should be the definition of Digital Inclusion? What all parameters should it include to highlight disparities across different segments of society to have a realistic assessment from a policy perspective? Please provide your answer with suitable justification.

COAI Response:

a. Digital inclusion is the concept of ensuring that all individuals and communities, particularly those who are historically marginalized or underserved, have equitable access to and effective use of digital technologies and the internet. The wide outreach of the Digital Inclusion intends to make the accessibility of Internet and Technology to each and every citizen of the country. Definition of the Digital Inclusion as given by United Nations is contextual in the present time:

"Digital inclusion is defined as "equitable, meaningful, and safe access to use, lead, and design of digital technologies, services, and associated opportunities for everyone, everywhere".

It is thus recommended that the definition of digital inclusion to be considered for India should be simple and effective and be created in discussion with stakeholders. Too many variables/parameters will dilute its robust implementation.

b. With the aim of the Digital Inclusions to reach out to every nook and corner of the country, the following **parameters** are suitable for the purpose of highlighting the disparities across different segments of society to have a realistic assessment:

  i. Digital Accessibility: Digital accessibility refers to the availability and ability of individuals and communities to connect to the internet and utilize digital technologies, ensuring they can participate in the digital world regardless of location or physical limitations.

  ii. Digital Affordability: Digital affordability pertains to the accessibility of digital devices and technologies at a cost that is reasonable and within the financial means of individuals and communities, ensuring equitable access. **As regards the cost of digital connectivity, India already is among the lowest globally**.

  iii. Digital Literacy: Digital literacy refers to the ability of individuals to understand the usage of digital technologies, encompassing skills such as using digital devices, navigating the internet, evaluating online information, and understanding digital privacy and security effectively and critically. It empowers informed and responsible digital participation.

  iv. Digital Applicability: Digital applicability refers to the ability to practically use digital technologies, applications and tools in various aspects of life, such as education, healthcare, employment, and daily tasks, enabling meaningful and beneficial usage. Digital Applicability is a crucial measure to determine the effectiveness of the Digital Literacy.

c. For better implementation and enhancement of digital inclusion in the country, it is pertinent to note that the devices should be available at affordable prices, through which the citizens can move towards digital inclusion.

Q2. Do you agree that the indices mentioned above and developed by various international organisations adequately represent the status of Digital Inclusion in the country? What other indices and factors need to be considered to identify the gaps in Digital Inclusion in the country?

<u>COAI Response:</u>

a. As discussed in the above question, Digital Accessibility, Digital Affordability, Digital Literacy and Digital Applicability are the quintessential factors that are responsible for determining the status of Digital Inclusion in a country. Indices such as GSMAs Mobile Connectivity Index, Alliance for Affordable Internet's Affordability Drivers index (A4A1)

as well as Network Readiness Index talk about the Digital affordability, Digital Connectivity and Digital Literacy.

b. We believe that the indices mentioned above and developed by various other international organisation can be used as a cue to assess the status of Digital Inclusion in the country based on **the contextual factors and circumstances prevailing in India** and not on the parameters that have been used in other countries. The Indian policymakers / regulators should suitably modify these keeping in mind the Indian context, socio-economic behaviours and other related aspects / requirements.

c. We further believe that parameters such as tele density, data usage per subscribers, Affordability measured by average outgo per subs etc., can be effective performance indicator to track the progress of Digital Inclusion in the country **by the government, without imposition of a new mandate** on the TSPs/ industry.

d. We submit that there is no need for additional parameters as there are various data available on the public domain which can be used for assessing the progress of Digital Inclusion in the country. Additional data collection/reporting should not be mandated

Q3. Are Digital Connectivity, Digital Affordability and Digital Literacy the main factors responsible for Digital Inclusion in the country? Do you agree that by addressing these, Digital Inclusion can be achieved in the country? If not, please suggest other factors responsible for Digital Divide that need to be addressed to ensure Digital Inclusion?

COAI Response:

a. We believe that Digital Connectivity, Digital Affordability and Digital Literacy are the main factors that lead to Digital Inclusion. These factors are responsible for creating a digitally aware society.

b. The TSPs play an important role in shaping India's connectivity landscape. They have undertaken tremendous efforts including investments, to expand networks that has helped in covering a large segment in the country. These factors should be bundled with digital accessibility by default to increase digital capability.

c. It must be acknowledged that in India the benefits of the digital ecosystem are in place due to the massive investments in networks and network quality by mobile operators across the globe. Indian Telcos have transformed the lives of millions of consumers, providing them with access to digitally inclusive growth. This fact was proven globally during the pandemic. During COVID-19, digital connectivity kept public services functioning.

d. There are some hinterlands in India that lack access to internet networks and remain untouched by mobile coverage. Albeit government and the TSPs are increasingly putting their efforts together to bridge this coverage gap.

e. One of the challenge is that, the content is predominantly in English or other major languages, constructing an insurmountable barrier for the native language speaking rural population. Additionally, financial constraints prevent them from owning digital devices and affording internet subscriptions.

f. We submit that Affordable digital connectivity underscores the necessity for devices prepared to facilitate network access, fostering digital inclusion. Device readiness is crucial to ensure enhanced connectivity and accessibility to broader digital participation from consumers. In this regard affordability of digital connectivity is not a challenge as cost of services / connectivity is already amongst the lowest globally, however the challenge of device affordability may be a consideration still.

Q4. Apart from efforts made by the Government through various Projects for provisioning of broadband connectivity under NDCP 2018 and NBM 2019 and other schemes, what additional measures are required to fulfil the objectives of universal connectivity in India?

COAI Response:

a. The Government of India through the NDCP 2018 and NBM of 2019 have initiated the noble intention of paving the way to provide maximum outreach of the internet connectivity to the remotest part of the country for each and every GP/ Village/ Small town. National Digital Communications Policy, 2018 (NDCP) also lays emphasis on achieving universal broadband connectivity.

b. In addition to Government initiatives, we submit that, there should be increased investment in digital infrastructure supported by Government funds / schemes / incentives, particularly in rural and remote areas, to improve internet connectivity and access to digital services. We also recommend making RoW free for the next 5 years in rural areas to ensure swift rollouts and charge only the cost of restoration only (and no rent), for underground fibre.

c. There is also a need to abolish the USOF levy so that TSPs can accelerate rollout in unserved areas.

d. Efforts should be made to promote digital content in regional languages to cater to diverse linguistic communities. This will ensure that information and services are accessible to a broader audience.

e. **Training facilities** should be provided in rural areas to train the rural folks on use of digital technologies, so that they can also benefit from facilities such as digital payments.

Q5. Whether connecting GPs/villages/village institutions through BharatNet has helped in improving digital connectivity in an effective manner? If not, what additional measures are required to ensure universal connectivity across all GPs/villages/village institutions in an efficient and time bound manner?

COAI Response:

a. The implementation of BharatNet, connecting rural areas and their institutions to GPs, has yielded modest benefits. While it has improved digital access and communication, allowed for better healthcare services and information dissemination in villages, it still

leaves much to be desired as its infrastructure and performance /SLAs are yet to be among best in market. This has also kept its uptake/utilisation low.

b. It is pertinent to note, that the Telecom Service Providers (TSPs) on their own have played a pivotal role in spearheading the expansion of digital connectivity to rural regions. Their infrastructure investments, innovative services, and partnerships with government initiatives like BharatNet have been instrumental in bridging the urban-rural digital divide. However, there is still much to be desired under the BharatNet.

c. To overcome challenges of BharatNet, it should be made available on minimal/no tariffs to TSPs and also for middle-mile connectivity. Tighter Service Level Agreements (SLAs) are needed to ensure that BharatNet is used effectively.

Q6. Will the schemes supported by USOF other than BharatNet suffice the need of universal connectivity in the country? If not, what additional measures or changes in strategy are required to ensure universal connectivity to all unconnected areas? Please provide your answer with suitable justification.

COAI Response:

a. We believe that the Telecom Service Providers (TSPs) already occupy a pivotal position in realizing universal connectivity. Their networks, technological expertise, and strategic collaborations are essential elements in bringing digital access to all corners of the country.

b. However, there is a dire need to cut the burden of levies on the telecom sector. Hence, we are of the view that present License Fee be reduced from 3% to 1%.

c. Along with the reduction of License Fee (LF), we believe that USO levy should be abolished too, which would incentivise TSPs in further expanding their network, including 5G services in underutilized and far-flung areas of the country thereby improving the tele-density further. The abolition of levying USOF will further strengthen the cashflow of the TSPs that will enable them to further invest and contribute to enhance Digital Inclusion in the country.

d. Further, a substantial corpus of Rs. 75,689 Crore remains unutilized in the USOF, and the same can be used for expanding the backhaul infrastructure, wireline and wireless network in the rural and far-flung areas of the country.

Q7. What steps should be taken to encourage service providers for effective utilisation of the BharatNet infrastructure in provisioning of connectivity to Institutions/households/ individuals?

COAI Response:

a. The present infrastructure and performance of Bharat net still leaves much to be desired. This has also kept its uptake quite low. Thus to enhance the effective utilisation of the BharatNet infrastructure, there is a need to strictly define service level agreements (SLA) which is crucial to provide effective utilisation of the resources.

b. We submit that USOF levy should be abolished. By abolishing USOF levy, TSPs would be incentivised for expanding their network, including 5G services in underutilized and far-flung areas of the country thereby contributing expensively to improve tele-density. The abolition of levying USOF will further strengthen the cashflow of the TSPs that will enable them to further invest and contribute to enhance Digital Inclusion in the country.

Q8. Is there any need to take steps to make satellite internet a viable option for providing connectivity to remote inaccessible areas? If yes, please provide your answer with suitable justification. If not, what are the other alternatives for provision of connectivity in these areas?

COAI Response:

No Comments

Q9. What measures are required for adopting a collaborative approach to utilise Digital Connectivity Infrastructure created by the service providers or through government-aided schemes to extend connectivity to the people in unserved areas? Please provide your answer with suitable justification.

COAI Response:

a. Passive infrastructure sharing is very well established in India, with India being one of pioneers in infrastructure sharing. We submit that the same should be further encouraged.

b. To encourage the sharing of infrastructure, **Government should immediately allow the pass-through for any consideration paid by one TSP to another for passive and active infrastructure sharing**. Thus, infrastructure-sharing charges should be allowed as pass-through while determining the AGR for the purposes of payment of LF and SUC.

c. TRAI in its recommendations on "Rating of Buildings or Areas for Digital Connectivity" dated February 20, 2023, also stated that "Revenues earned by sharing of active wireless equipment should not attract LF and such revenues should be reduced from GR to arrive at ApGR of such lessor licensee". We request TRAI to recommend the same to DoT for early implementation.

Q10. Please suggest the best practices being followed internationally that can be adopted in the country to provide universal connectivity to all individuals, households, and communities?

COAI Response:

a. We submit that the initiative of Universal connectivity to individuals, households and communities requires a joint effort between the Government and the various stakeholders who can enhance Digital literacy and connectivity across the country.

b. Some of the International Practices are as follows:

i. USA: Government of USA passed the Digital Equity Act under which the Government provides three grants such as State Digital Equity Planning Grant Program, Digital Capacity Building Giant Program and Digital Equity Competitive Grant Program which intends to create equitable economy, reliable and affordable high-speed internet.[1] Under the State Digital Equity Planning Grant Program, each of the 50 states in the country will receive grants which will be used for the purpose of improving the Broadband network through active participation in the Broadband Equity, Access and Deployment (BEAD) program to make internet connectivity available to the far flung areas as well as cater to low-income households, aging populations, incarcerated individuals, veterans, people with disabilities etc.

ii. Under BEAD program, the individual states will coordinate with the eligible entities include Service Providers for planning, deploying, installing, adoption and enforcement of high-speed internet services in the unserved or underserved areas for improving service to communities, by adopting the digital equity programs that would help in both workforce development programs and vocational training. [2]

iii. Further, Federal Communications Commission (FCC)'s Emergency Connectivity Fund, intends to provide schools and libraries with tools and services to their communities need for remote learning during the COVID-19 emergency period wherein the students who lack internet access or devices required for connectivity. The scheme also covers the reasonable costs of laptop and tablet computers, Wi-Fi hotspots, modems, routers and broadband connectivity purchases for off-campus use by students, school staff and library patrons of eligible schools. This fund covers all the three factors of digital inclusion which includes digital accessibility, digital affordability and digital literacy.

iv. In France, Movement of the Enterprise of France (MEDEF) initiated the Digital Skills and Jobs Coalition, serving as a driving force for improving digital literacy. The program aims to support employees especially women who wish to enhance their digital skills as well as to match the digital requirements of the job market. The program also provides citizens with necessary background to access information, to interact more easily with their public or private environment. This, in turn, facilitates the development of digital skills, easing access to the labour market along with improving digital literacy that enhances digital inclusion.[3]

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[1] Digital Equity Act of 2021.
[2] BEAD Program
[3] Digital Skills and Job Coalition, 2017.

v.   In South Korea, Ministry of Education, Sciences and Technology initiated the 'Smart Learning' initiative which focuses on digital literacy and skills training for all age groups, promoting the use of digital technologies in education. This helps in expanding digital literacy programmes, with a focus on diverse age groups and regions, to enhance digital skills and empower individuals to utilise the online resources effectively.[4]

vi.   Further, in Singapore, the regulatory body Infocomm Media Development Authority (IMDA) maintains a regulatory framework that encourages competition, innovation and ensures consumer protection in the telecommunications sector. This process continuously refines and updates the regulatory framework to create an environment that encourages investment, innovation and fair competition in the telecommunication sector.[5]

vii.   United Kingdom's Broadband Delivery UK (BDUK) programme js a Public- Private Partnership (PPP) model that involves collaboration between the Government and private sector to extend the broadband access, particularly in underserved areas. This encourages more participation through PPP mode that accelerates the rollout of broadband infrastructure, leveraging private sector expertise and resources.[6]

c.   While we contend that the initiatives taken up by the respective Government is beneficial, it is important that for developing any policy on the similar lines should be seen in the context of circumstances that prevail in India.

d.   We submit that any initiative introduced by the Government should be developed accordingly to ensure affirmative progress in enhancing Digital Inclusion in the country.

Q11. Whether various measures taken by the Government such as focusing on local manufacturing are sufficient to bring down the prices of smartphones in India? If not, what additional measures are required to be taken to make it more affordable? Please explain your answer with suitable justification.

COAI Response:

a.   We believe that the **policy measures implemented by the Government are generally sufficient** for local manufacturing through the widely appreciated Make in India initiative. These initiatives encompass various sectors and promote the much-needed local development and manufacturing of the products.

b.   The government's emphasis on local manufacturing in India is a crucial step towards fostering economic growth and reducing smartphone prices. By incentivizing domestic production, the authorities aim to create a self-sufficient ecosystem that meets the escalating demand for smartphones while decreasing reliance on imports. The decision to reduce export duties on locally manufactured smartphones is strategic,

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[4] Smart Learning Initiative, 2019
[5] IMDA Framework and Policy
[6] Broadband Delivery UK (BDUK)

enhancing the global competitiveness of Indian brands and stimulating international market participation.

c. We submit that increased focus should be given on microfinancing schemes and lending propositions to customers and handset subsidies in proportion of market share should be provided.

d. **As the manufacturing ecosystem matures, economies of scale are expected to drive down costs, resulting in more affordable smartphones** for consumers. Overall, the combination of these measures' positions India on a trajectory to not only address immediate economic concerns but also establish itself as a significant player in the global smartphone manufacturing landscape.

Q12. Whether market for second-hand smartphones is a viable strategy for increasing the affordability of smartphones to the people? Please indicate the opportunities and challenges that may arise due to this strategy.

COAI Response:

a. **We believe that the second-hand smartphone market is important for enhancing affordability**. It provides cost-effective alternatives for consumers, making advanced technology accessible to a wider demographic while also reducing electronic waste and promoting sustainability.

b. The **second-hand smartphone market holds immense potential for rural populations facing constraints in affording costly smartphones.** Given the affordability of used devices, this initiative can significantly empower communities in rural areas, bridging the digital gap prevalent in the country. By providing access to more economical smartphones, it not only eases financial burdens for rural residents but also facilitates their participation in the digital realm. This, in turn, contributes to the overall reduction of the digital divide, ensuring that even in remote areas, individuals can leverage the benefits of technology and connectivity for personal and economic advancement.

c. However, we believe that the **growth of the second-hand smartphone market is best left to market dynamics.**

d. Moreover, we believe additional focus may be given to microfinancing schemes, and lending propositions to customers which will help in enabling the purchasing capacity to afford a digital device.

e. Software platform capabilities could be used to help implement targeted subsidies.

f. Moreover, striking partnerships with smartphone and e-commerce players to extend propositions like free screen replacement/extended warranty can help in retaining the consumer to continue utilising the device without the need to worry for any financial expenses to be incurred otherwise.

Q13. Whether schemes undertaken by various states for distribution of smartphones and laptops to students and support for the connectivity are effective mechanisms to increase Digital Affordability in the country? If yes, what are the measurable parameters to assess the effectiveness of such schemes? If not, what could be the alternative policy interventions/ schemes with measurable outcomes that can support affordability of the devices? Please support your answers with suitable information.

COAI Response:

a. Various policy initiatives undertaken by State Governments of Uttar Pradesh, Rajasthan, Madhya Pradesh, Odisha, Karnataka, West Bengal etc. for distribution of laptop and smartphones especially to underprivileged talented students is a good step for promoting digital inclusion. These schemes promote access to education, enhance digital skills, and bridge the digital divide, contributing to broader socio-economic development in the nation.

b. Rural tele-density and internet subscribers in the rural areas could be good parameters to measure the success of these schemes.

c. Impact assessment of such schemes is crucial to understand trends and improvements, the data can be collected from device vendors involved in the scheme to track usage of beneficiaries.

Q14. Is there any need for policy interventions to increase Digital Affordability (digital devices and digital connectivity) among specific sections of society, for example, women, students,farmers, fishermen, economically weak, etc.? Please respond with suitable justification.

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Q15. What measures should be taken to make digital devices and digital connectivity affordable to the citizens for empowering them to maximize the benefits of an inclusive digital society? Please provide your answer with best practices being followed internationally in this regard.

COAI Response

a. As stated to response in Q13, we submit that policies undertaken by the various state Governments to **provide and promote the use of digital devices** are good initiatives for enhancing digital inclusion. Such schemes would enhance Digital literacy amongst the underprivileged and underserved communities.

b. In this regard, we further re-iterate that the Data/Digital Connectivity in India is already one of the most affordable in the world which enables digital inclusion.

c. As far as digital connectivity is concerned, there is no need for any specific policy intervention to increase digital affordability. The telecom tariffs in India is already among the lowest globally and most affordable and TSPs have made their service offerings in a such a way that it serves the entire cross-section of society. Specific mandates on TSPs in this regard are unwarranted.

d. We submit that Device affordability is a crucial factor for carrying out digital inclusion in the country.

e. Further, Federal Communications Commission (FCC)'s Emergency Connectivity Fund, intends to provide schools and libraries with tools and services to their communities need for remote learning during the COVID-19 emergency period wherein the students who lack internet access or devices required for connectivity. The scheme also covers the reasonable costs of laptop and tablet computers, Wi-Fi hotspots, modems, routers and broadband connectivity purchases for off-campus use by students, school staff and library patrons of eligible schools. This fund covers all the three factors of digital inclusion which includes digital accessibility, digital affordability and digital literacy.

f. Further, the Malaysian Government rolled out the "Pakej Yes 5G RAHMAH" subsidy scheme to provide the Bottom 40 economic group (B40) with affordable access to smartphones through Telecom operators which was bundled with a data plan which helped in making digital affordability and accessibility feasible, thus enhancing digital inclusion.[7]

g. We believe that Government should take various initiatives such as PLI and make in India to encourage manufacturing of digital devices in India which will eventually lead to these devices being available at an affordable rate.

Q16. What measures should be taken to engage the industry and academia in promoting Digital Literacy in India? Please provideyour answers with suitable justification.

COAI Response

a. We believe that the policy measures introduced by the **Government such as National Digital Literacy Mission (NDLM), PM E-Vidhya etc. are adequate.** These policies span diverse sectors, address critical issues, and promote economic and social development.

b. We are of the view that involvement in the matter of Digital literacy should be subject to the industry and academia's discretion. Their collaborative efforts, guided by market needs and research, can drive innovation, promote sustainable growth, and adapt to evolving technological trends effectively. If digital learning can be made a part of the curriculum in the early years, it would give the new generation basic skills that they can then build on.

c. Creating localised digital content in regional languages ensures that information, services and educational resources are accessible and understandable to rural populations.

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[7] Pakej Yes 5G RAMAH

d. **Training facilities** should be provided in rural areas to train the rural folks on use of digital technologies, so that they can also benefit from facilities such as digital payments.

Q17. How can the digital literacy toolkits developed by multiple industry players already available in the market be utilised to improve digital literacy levels in the country, especially for the rural citizens of the country?

COAI Response

a. We submit that there have been several of toolkits that **have been developed by the industry players** which help in understanding various educational concepts such as networking and IT skills including cyber-security etc. as well as creating awareness amongst citizens through various methods that help in educating both children and adults about internet safety in the country.

b. In the rapidly advancing digital landscape, industry players like TechBoomers, and Digital Literacy Foundation have taken steps in developing comprehensive toolkits **to address a spectrum of educational concepts, with a particular emphasis on networking, IT skills, and cybersecurity.**

c. The significance of these toolkits extends beyond traditional academic understanding; they serve as **catalysts for raising awareness among citizens**. The educational methods employed by these initiatives are diverse, ranging from online courses and interactive modules to workshops and outreach programs. This multifaceted approach ensures a broad reach, impacting both children and adults alike, fostering a culture of digital literacy and internet safety.

d. One of the key contributions of these toolkits lies in their role as empowering agents. **By offering accessible and structured courses, they equip individuals with the knowledge essential for navigating the complexities of the digital era.** Moreover, these initiatives actively contribute to creating a safer online environment.

e. Simultaneously, these **educational resources play a crucial role in enhancing skill sets aligned with the evolving technological landscape.** As the demand for digital proficiency grows across various industries, the courses provided by such organisations can become instrumental in bridging the digital divide and preparing individuals for meaningful participation in the digital economy.

f. In essence, these industry-driven initiatives represent a collective commitment towards fostering digital empowerment, education, and safety. As they continue to evolve, they contribute significantly to shaping a digitally literate society equipped to harness the benefits of technology while navigating its challenges. The Authority can also attempt to make these toolkits available in local languages to increase their efficacy in rural India.

Q18. Please suggest the best practices followed internationally that can be adopted in the country to promote mass digital literacy for different segments of society.

COAI Response

a. We submit that global practices have been effectively working towards creating digital literacy on a large scale. Some of the practices that can be adopted are as follows:

   i. Australia: The Digital Literacy for Life Courses is one of the initiatives launched by Australian Migration Education Solutions (AMES), a Government body which intends to make the citizens gain digital skills through practical and applied learning activities level wise. This helps in ensuring that a citizen is aware of the basics to digital learning.[8]

   ii. USA: The Department of Education of USA along with the Division of Adult Education and Literacy (DAEL) fund various digital literacy initiatives that cater to both students and teacher through websites including Digital Skills Library, Digital Equity: Exploring the Modern Civil Rights etc. which help in their Digital skills.[9]

   iii. G20 declaration on digital literacy: In the 2023, G20s New Delhi Leaders' Declaration, it recommends policies for Advancing Financial Inclusion, productivity through Digital Public Infrastructure, strengthening of digital financial literacy and consumer protection which will help in enhancing digital inclusion globally.

   iv. Singapore's[10] Digital Readiness Blueprint, created by an MCI-led workgroup, hopes to improve citizens' access to digital technology and equip them with the skills to use digital technology safely and confidently. It includes targeted programmes for different segments of society, such as seniors, low-income families and individuals with disabilities.

   v. United Kingdom's[11] *Learn My Way* is a digital inclusion platform in the United Kingdom that provides free online courses to help people develop basic digital skills through courses catering to various skill levels, making it accessible to different segments of the population.

b. We believe that the above-mentioned practices in other countries where the Governments have taken initiative to bridge the gap of digital literacy can be looked at while considering policies for enhancing Digital Inclusion in India. However, it has to be contextualised based on India's ecosystem.

c. In practice, effective digital literacy programmes must have a deep understanding of the communities that they serve, equipping these communities with relevant digital skills and toolkits, a greater degree of digital confidence and access to a range of contextually appropriate and affordable devices and applications.

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[8] Digital Literacy for Life- Ames Australia
[9] Division of Adult Education and Literacy (DAEL)- Department of Education, USA.
[10] https://www.straitstimes.com/tech/digital-readiness-blueprint-launches-to-help-every-last-man-cross-the-digital-divide
[11] https://www.learnmyway.com/

Q19. What steps should be taken to monitor the impact of DPIs on underserved and vulnerable segments of the society? Kindly indicate the key parameters that need to be monitored to assess such impact and actions required to promote adoption citizen centric services by these segments of the society.

<u>COAI Response</u>

  a. We submit that in case of India, parameters already collected by government like tele-density (including rural tele-density), data usage per subscriber, average outgo per subscriber and number of digital payments, are good performance indicators for evaluating and monitoring digital inclusion in the country.

  b. Hence, we submit that additional parameters are deemed unnecessary at this time. The existing set of variables and criteria adequately addresses the current situation on the impact of DPIs on underserved and vulnerable segments, and introducing new parameters could potentially complicate the issue without substantial benefits.

Q20. How can emerging technology be leveraged to enhance the digital literacy programmes of the Government? Please give your input with reasons. Best practices being followed by other countries and private sector may also be referred to.

<u>COAI Response</u>

  a. We submit that 5G will open up new capabilities and possibilities, provide low latency, faster downloads and reliability. If other sectors can add AI, IoT and big data in their use cases along with 5G, the scope would widen.

  b. We are of the view that the emerging technologies such as AI can revolutionize the learning experiences by creating personalized programs which will help in facilitating remote educational opportunities, enhancing accessibility and engagement in educational process.

  c. Further, Machine learning (ML) can improve government digital literacy programs by personalizing education based on individual needs. It uses data analysis for custom content suggestions, adapting to different learning styles. Automated assessments give instant feedback, helping develop skills. Predictive analytics anticipate future trends, keeping programs relevant. Virtual assistants with machine learning provide real-time support. Overall, **adding machine learning to digital literacy efforts makes them more efficient, adaptable, and effective, preparing people for the challenges of a tech-driven society.**

  d. **These AI/ML technologies have to be implemented by respective ministry/department of Central Government and/or State Government.**

Q21. What steps should be taken to ensure that AI and new technologies do not result into further digital divide and every section of the society has access to the new technologies and resultant economic opportunities?

COAI Response

    a. TSPs have been utilising the emerging technologies to the extent possible, such as AI/BD to expand network and ensure the maximum outreach of the services.

    b. To ensure that AI and new technologies helps in reducing digital divide, we suggest to use AI to develop specialized programs to educate individuals of all ages and demographics on using technology.

Q22. What should be key performance indicators to measure, monitor and track the progress of the key factors of digital inclusion in the country mentioned below?
        a) Digital Connectivity
        b) Digital Affordability
        c) Digital Literacy

COAI Response

    a. We reiterate that India has one of **the lowest Tariffs** in the world which makes the (connectivity) cost of accessing online services affordable and easily available. However, we believe that to have Digital Affordability, availability of devices at an affordable price is important as higher cost of devices leads to the difficulty for citizens to buy the same.

    b. We believe that availability of devices at affordable rates can improve the digital affordability which further enhances Digital inclusion.

    c. Further, **tele-density including rural tele-density, data usage per subscriber, average outgo per subscriber, number of digital payments** are good indicators for evaluating and monitoring the progress of digital inclusion in the country. TRAI already issues monthly report of subscriber figures and Broadband subscribers. The report is detailed enough and also captures region wise details and is hence enough.

    d. We are not in favour of having **any new key performance indicators to measure, monitor and track the progress of digital inclusion. New indicators might only create compliance burden on the industry.** Further, we submit that allowing market forces to operate without interference is the preferred approach. This promotes competition, innovation, and efficiency, as businesses and consumers determine outcomes based on supply, demand, and other market dynamics.

    e. We believe that the industry should be given the liberty to self-monitor these performance indicators. This approach encourages self-regulation, ensuring that businesses adhere to industry standards, and best practices, fostering trust, accountability, and sustainable growth within their sector.

    f. **Further, such a dashboard or monitoring mechanism should work as input for any policy support rather than being used as a means to regulate or intervene in the market. No penalty or such disincentive should be linked to these efforts.** For example, the Digital India dashboard gives useful insights to government on what is happening on various parameters tracked under DI and is not a tool to penalise or mandate new regulations.

Q23.What measures should be taken to provide high-speed broadband connectivity to schools in the country, especially in states with low number of schools having internet connectivity?

COAI Response

a. We submit that the TSPs have already taken necessary steps to provide high-speed broadband connectivity to various institutions of importance which include schools, hospitals, colleges, airports etc.

b. Further, the availability of mobile broadband networks and the rapid adoption of smartphones during the past five years has had a significant impact on the Indian society and economy. The impact of connectivity has been very visible in the field of education - the widespread availability of mobile broadband connectivity and affordable data plans allowed many schools to pivot to remote education quickly at the onset of Covid 19 pandemic.

c. We believe that the implementation of interactive digital content such as gamification, simulations, and interactive videos with 5G technology can enhance students' understanding of subjects by transforming theoretical concepts into vivid experiences. 5G will also facilitate personalised learning experiences, by utilising data analytics and AI, making education more engaging and customised to meet each student's specific needs and preferences too.

d. Moreover, we believe that incorporating virtual and augmented reality (VR/AR) in lessons can create an immersive learning environment that can captivate students in innovative and stimulating ways.

e. Further, with 5G networks, students and teachers can connect from anywhere with minimal delay and disruptions, allowing real-time collaboration and feedback. Additionally, 5G-powered applications such as VR and AR can offer interactive and engaging learning experiences that are not possible with traditional online learning tools.

f. 5G can also support high-quality video streaming and conferencing, making it easier for remote students and teachers to participate in live classes and discussions. Moreover, VR and AR can offer a physical (physical and digital) learning curriculum for students studying robotics and automation. 5G can bridge the gap between physical and remote classrooms and create new opportunities for students to learn from anywhere, at any time.

g. Moreover, the Government has initiated several measures and policies which have aimed to provide high-speed broadband connectivity in schools via BharatNet, National Broadband mission etc. Further, AICTE vide its order F. No. 16-5/2017 has asked for institutions and TSPs to collaborate on creation of Digital Campuses.

h. **Further, the Government should incentivise TSPs through license fee reduction from 3% to 1%, removal of USOF levy and device subsidies in proportion of market share, to invest in connectivity infrastructure in schools through CSR and other initiatives.**

i. Government should consider funding wireless and wireline broadband infrastructure in uncovered government schools so there is a need to support TSPs within a time bound manner. Create a specific central and state level budget allocation, grant and subsidy programme to fund broadband infrastructure rollout across uncovered government schools as a priority.

j. Federal Communications Commission (FCC)'s Emergency Connectivity Fund, intends to provide schools and libraries with tools and services to their communities need for remote learning during the COVID-19 emergency period wherein the students who lack internet access or devices required for connectivity. The scheme also covers the reasonable costs of laptop and tablet computers, Wi-Fi hotspots, modems, routers and broadband connectivity purchases for off-campus use by students, school staff and library patrons of eligible schools. This fund covers all the three factors of digital inclusion which includes digital accessibility, digital affordability and digital literacy.

k. We believe that collaborative efforts between Government and TSPs will pave a better route for including high-speed broadband connectivity in schools and colleges including the far-flung regions of the country.

Q24. How effective is a dashboard as a measure for evaluating and tracking the progress made in respect of the various indicators of the three key areas of digital inclusion? What are the critical parameters and at what level (i.e., at state or district or towns/cities or block or Gram Panchayat levels), such parameters should be captured in the dashboard?

<u>COAI Response:</u>

a. While **having a dashboard for measuring and evaluating progress made on digital inclusion may be a good initiative, care should be taken that this does not lead to any additional compliance requirements on the stakeholders** as any compliance for tracking the progress, it would become a burden to the stakeholders which will be disincentivising towards the progress of digital inclusion.

b. As mentioned in our response to Q22, we reiterate that tele-density (including rural tele-density), data consumption per subscriber, average outgo per subscriber, number of digital payments are suitable indicators for evaluating and monitoring digital inclusion progress in a country which are already tracked by the TRAI. It measures the penetration of telecommunications services, reflecting the accessibility and usage of communication technologies among the population.

c. A higher tele-density implies broader connectivity, indicating increased digital access and participation. By tracking tele-density, policymakers can assess the effectiveness of initiatives aimed at enhancing digital inclusion, ensuring that a larger segment of the population has access to and benefits from telecommunications services, thereby contributing to overall socio-economic development.

d. Similarly, we believe that digital payments are suitable indicators that track and show the progress of digital financial inclusion in the country.

e. Another metric to consider is the sales of smartphones in a given region. These devices offer a comprehensive view of end-users' engagement in digital communication, extending advanced technology to a broader demographic.

f. The information on the sales of smartphone should be collected from the respective vendors.

g. Further, we submit that TSPs should not be burdened with reporting data sets on a short duration basis. Data and information should not be sought on an adhoc basis.

h. Further, such a dashboard or monitoring mechanism should work as input for any policy support rather than being used as a means to regulate or intervene in the market. No penalty or such disincentive should be linked to these efforts. For example, the Digital India dashboard gives useful insights to government on what is happening on various parameters tracked under DI and is not a tool to penalise or mandate new regulations.

Q25. Who should be responsible to evaluate and track the progress of digital inclusion including development and management of the dashboard?

COAI Response

a. The process of Digital Inclusion plays an important role for the development of country which enhances the quality of life of citizens in the country.

b. Since digital inclusion covers various parameters concerning digital literacy, accessibility to communities etc., we submit that Niti Ayog/My Gov is the suitable institution to monitor the progress of the same.

c. It is also important that such a dashboard or monitoring mechanism work as input for all policy support, rather than functioning as a means by which to regulate or intervene in the market. No penalty or any such disincentive should be linked to these efforts. For example, the Digital India dashboard provides useful insights for government on what is happening on the various parameters tracked under DI. It does not function as a tool to penalise or mandate new regulations.

d. As far as parameters related to the TSPs are concerned, these should be in line with India's telecom licensing framework in the following manner:

    i.   The Indian telecom market is divided into 22 licensed service areas (LSAs). These LSAs are further divided into four categories viz. Metro, A, B and C. These categories have been decided based upon the socio-economic conditions of these LSAs.

    ii. The entire network architecture of industry over the years has been planned and built over the years in line with the present licensing framework.

    iii. It is important, therefore, that these parameters should be persisted with, aligned as they are to this market and licensing reality.

     iv.   Additionally, no new periodic/ smaller duration data sets should be sought to be reported on real-time or on a short duration basis than what is sought presently on a monthly and quarterly basis.

    e.   Further, we believe that Gati Shakti dashboard is also suitable to evaluate and track the progress of digital inclusion in the country.

Q26. What efforts are required to provide reliable digital connectivity to MSMEs at affordable costs to empower them through new technologies for effective participation in the digital economic activities?

COAI Response

    a.   We submit that TSPs are already providing reliable and fast digital connectivity to MSMEs.

    b.   With implementation of 5G which will provide high speed connectivity, TSPs are best placed for providing reliable digital connectivity to MSMEs at affordable cost.

    c.   We submit that the MSMEs, which are a critical component of the country's economic development can be helped comprehensively by the initiatives taken by TSPs to provide high speed broadband even in remote areas.

    d.   The issues which are fundamentally faced by the MSMEs in rural/remote areas are similar to those faced by other marginalized sections and affordability of devices is a major issue. We submit that the measures suggested for easing the affordability of devices in previous sections will be applicable for MSMEs as well as it is is essential for the purpose of achieving digital accessibility, which further enhances digital inclusion.

Q27. Whether the schemes of fibre connectivity in villages and rural areas such as BharatNet can be leveraged to provide the digital connectivity to MSMEs at affordable costs? If yes, please suggest the steps to be taken to extend such connectivity?

COAI Response

    a.   At the outset, we submit that digital connectivity for MSMEs is already competitive from a cost perspective.

    b.   Further, we submit that the local Governments should provide incentives or subsidies to TSPs for the purpose of providing digital connectivity to MSMEs at affordable rate.

Q28. How DPIs can be used to allow the marginalised communities and MSMEs to access new technologies?

COAI Response

a. We submit that Digital Public Infrastructure plays an important role in the development of creating opportunities to access new technologies to the marginalised communities and MSMEs through Affordable Internet Access.

b. Further, the **DPIs accompanied with Digital Skill Training, access to smartphones and laptops, local content development** will help in providing new technologies to marginalized communities and MSME.

c. To drive better technological participation, DPIs should incorporate inclusivity principles upfront — like vernacularity, affordability and accessibility, along with availability of standardised interfaces for MSMEs and community to build localised solutions.

Q29. What efforts can be made to increase awareness and digital literacy levels, especially in 5G, Big Data and AI/ ML, to the business owners and employees of the MSMEs? What kind of framework is needed in this regard? Please provide your answers with suitable justification.

COAI Response

a. We submit that there are several ways with which the MSMEs can be made aware of the emerging technologies such as 5G, Big Data and AI/ML through some of the following methods:

   i. Digital Literacy Workshop: Carrying out workshop which shall provide practical solutions and teaching the working of these emerging technologies tools.

   ii. User Friendly Tools: Developing of user-friendly tools that are easy to use for the industry which could include AI-driven analytics platforms or user-friendly Big Data Solutions.

   iii. The government (Ministry of Commerce, Small Scale industries, etc.) and trade bodies, associations of SMEs and MSMEs will have to work collaboratively to have affordable access to such AI/ML solutions. Additionally, entrepreneurs and start-ups will have to develop simple and effective solutions.

Q30. Stakeholders may also suggest any other measures not covered in the consultation document to improve Digital Inclusion in the country with suitable justification.

COAI Response

a. A.O.B