



Response to TRAI Supplementary  
Consultation Paper on Roadmap to  
Promote Broadband Connectivity  
and Enhanced Broadband Speed

June 2021

# NASSCOM RESPONSE TO TRAI SUPPLEMENTARY CONSULTATION PAPER ON ROADMAP TO PROMOTE BROADBAND CONNECTIVITY AND ENHANCED BROADBAND SPEED

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We thank the Telecom Regulatory Authority of India (**TRAI**) for its efforts at shaping a national level strategy for enhanced broadband connectivity. TRAI's August 2020 Consultation Paper (**Broadband CP**) on the subject was both timely and appropriate, against a backdrop of increased dependence on online modes of work, education, and service delivery caused by the Covid-19 pandemic.

We welcome the opportunity to present our views on the Supplementary Consultation Paper (**Supplementary CP**), which extends pragmatic and implementation-driven questions relating to supply-side interventions, demand stimulation, and emerging alternatives to fixed broadband.

Our recommendations are provided in each of the sections discussed below.

## **1. Background and Status of Fixed Line Broadband Adoption**

- 1.1. The National Digital Communications Policy, 2018 (“**NDCP**”) envisaged providing universal broadband connectivity at 50 Mbps to every citizen under its Connect India mission, which aimed at enabling fixed line broadband access to 50% of the households by 2022.<sup>1</sup>
- 1.2. One of the key strategies explored under the NDCP towards achieving this goal was “*reviewing the rationalisation of license fees on fixed line revenues to incentivise digital communications*” in respect of fixed-line services. To this end, the TRAI's own recommendations entailed a waiver of license fees as a measure of stimulating supply of fixed line broadband services.<sup>2</sup>
- 1.3. However, as observed in the Supplementary CP, the number of fixed-line broadband subscribers have largely remained constant in the three years preceding 2020, with the exception of a slight increase in this number during the pandemic.<sup>3</sup> While there are multiple positive signs for the growth of internet use in general because of affordable electronic devices and mobile data rates,<sup>4</sup> the same cannot be said for fixed line broadband services.

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<sup>1</sup> Available at <https://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf> (last accessed on June 8, 2021).

<sup>2</sup> Please see para 1.5 of the Supplementary CP.

<sup>3</sup> Please see para 2.15 of the Supplementary CP.

<sup>4</sup> Please see <https://indianexpress.com/article/technology/tech-news-technology/india-to-have-over-907-million-internet-users-by-2023-driven-by-mobile-report-6274684/> (last accessed on June 8, 2021).

- 1.4. Accordingly, as the Supplementary CP rightly suggests, there is a case to explore alternative strategies towards attaining greater adoption of fixed line broadband services, including demand-side stimulation through subsidies and direct benefit transfers (**DBT**).

## **2. Supply-Side Interventions**

- 2.1. The Supplementary CP questions the utility and appropriateness of license fee exemptions, given the potential impact on Government revenue,<sup>5</sup> and potential difficulties in apportioning fixed line revenues in an industry that is increasingly transitioning to converged service offerings.<sup>6</sup>

- 2.2. As highlighted in our November 2020<sup>7</sup> response to the Broadband CP, building telecom infrastructure is of utmost importance to any strategy adopted for enhancing broadband connectivity. While the issues with license fee exemptions as highlighted in the Supplementary CP are both relevant and valid, we believe the Government should continue to explore supply-side interventions *which focus on infrastructure development*.

- 2.3. In this regard, the Government should consider extending existing mechanisms of *subsidising infrastructure provision, as opposed to subsidising service provision itself*. This could be attained by incentivising projects that help build basic connectivity infrastructure in underserved areas through measures such as Viability Gap Funding (**VGF**). As noted by the Supplementary CP, similar subsidies have previously been utilised by the Government of India, to incentivise the roll-out of Rural Household Direct Exchange Lines through the Universal Service Obligation Fund (**USOF**).<sup>8</sup>

- 2.4. Precedence for such approaches also exist in other jurisdictions. For instance, in France, the French government has increased funding of broadband infrastructure as part of its Plan France Très Haut Débit (Broadband Programme) to support the funding of high-speed broadband connections in rural markets that would not be financially viable for commercial operators. The project leads new public private partnerships and grants public funding to certain projects in remote locations.<sup>9</sup>

### **2.5. Recommendations:**

**(a) The USOF may be utilised to for the benefit of more subsidy and incentive schemes targeted at infrastructure creation.**

**(b) The incentives may be graded in accordance with the development of a region. Larger incentives may be provided to support services providers**

<sup>5</sup> Please see para 2.21 of the Supplementary CP.

<sup>6</sup> Please see paras 2.21 and 2.26 of the Supplementary CP.

<sup>7</sup> Available at [https://www.trai.gov.in/sites/default/files/NASSCOM\\_13112020.pdf](https://www.trai.gov.in/sites/default/files/NASSCOM_13112020.pdf) (last accessed on June 8, 2021).

<sup>8</sup> Please see para 3.20 of the Supplementary CP.

<sup>9</sup> Please see <https://www.whitecase.com/publications/insight/funding-europes-broadband-ambitions> (last accessed on June 8, 2021).

**in establishing fixed line broadband infrastructure in rural and semi-urban areas than in urban areas.**

- (c) To ensure effective utilisation of incentives, the pay out of incentives may be linked to performance targets which will further encourage participation of private players. For e.g., a beneficiary of an incentive program may be prescribed certain targets, say a set number of households/establishments that it provides broadband connection installations to, to be eligible for a continued or further benefit of the incentive program.**

### **3. Demand Stimulation**

3.1. The Supplementary CP explores the possibility of demand-side interventions, which could encourage the adoption of fixed line broadband connectivity.<sup>10</sup> Demand-side subsidies have previously been implemented for other services through DBTs. DBT schemes have proved to be beneficial to consumers in India before such as in the agriculture sector, and uptake of clean cooking fuels.<sup>11</sup> Implementing a DBT scheme would help increase the number of subscribers in rural areas and create demand. Other than area classification, special categories of subscribers can also be identified, who would really benefit from such schemes, such as students. The eligibility criteria to identify benefactors of such DBT schemes must be clearly established if such schemes are to be successful in the long run.

3.2. As in India, there is precedent for demand-side subsidies in other jurisdictions as well.

- (a) **United States:** The Federal Communications Commission (FCC) provides a discount on mobile and fixed broadband for eligible low-income consumers as part of its Lifeline program.<sup>12</sup> Likewise, the recently passed Coronavirus relief package by the US Government included 3.2 billion USD for expanded broadband coverage,<sup>13</sup> and proposes a payment of 50 USD per month as internet subsidies for low-income households or those that have lost employment as a result of the pandemic, and 75 USD per month internet subsidies for service on tribal lands.<sup>14</sup> Furthermore, US state governors have separately announced packages to improve broadband connectivity in their respective states.<sup>15</sup>

- (b) **United Kingdom:** The UK Government has launched a Gigabit Broadband Voucher Scheme where up to 210 million GBP is set apart to fund people in eligible rural areas requiring immediate financial help to get gigabit speeds of internet connectivity.

<sup>10</sup> Please see paras 3.8, 3.9 and 3.10 of the Supplementary CP.

<sup>11</sup> Please see <https://dbtdacf.w.gov.in/schemes1.aspx> (last accessed on June 8, 2021).

<sup>12</sup> Please see <https://www.fcc.gov/general/lifeline-program-low-income-consumers#:~:text=Lifeline%20is%20part%20of%20the,commonwealth%2C%20and%20on%20Tribal%20lands.&text=In%20the%202016%20Lifeline%20Modernization,service%20in%20the%20Lifeline%20program> (last accessed on June 8, 2021).

<sup>13</sup> Please see <https://docs.fcc.gov/public/attachments/DA-21-6A1.pdf> (last accessed on June 8, 2021).

<sup>14</sup> Available at <https://docs.fcc.gov/public/attachments/DA-21-6A1.pdf> (last accessed on June 8, 2021).

<sup>15</sup> Please see <https://www.nga.org/news/commentary/governors-expanding-access-broadband-2021> (last accessed on June 2, 2021).

Vouchers of pre-determined values are also distributed to both eligible residents and businesses.<sup>16</sup> Previously, the United Kingdom government also had run an initiative where an individual having a broadband connection with speeds less than 2Mb per second could qualify for a subsidised connection worth up to 350 GBP to boost the internet speed.<sup>17</sup>

- (a) **Singapore:** The Infocom Media Development Authority (**IMDA**) provides eligible Singaporean families with 2 years of subsidised fibre broadband connectivity. The eligibility is decided based on the income and dwelling type of the household and the citizenship of its members, amongst others.<sup>18</sup>

### 3.3. Recommendations:

- (a) **To encourage the growth of demand in under-served areas, DBT schemes may be implemented in a graded manner with a focus on (mostly rural) areas exhibiting lesser demand for broadband. A clearly defined eligibility criteria and proper authentication mechanisms to prevent misuse of any funds would increase demand and in turn, attract companies to build more broadband infrastructure in the lesser developed areas.**
- (b) **An expert group could be constituted to determine the quantum of DBT subsidy that may be given to each user or household. Entry barriers such as compatible hardware, minimum upload and download speeds and cost of engaging maintenance staff may also be considered in studying the quantum of subsidy required to provide a basic internet connection.**
- (c) **Promoting demand for fixed line broadband connections would also benefit wireless broadband users who rely on the same infrastructure as that of fixed line broadband users, further increasing demand across different categories of internet subscribers.**

## 4. Alternatives to Fixed Broadband Infrastructure: Street Furniture

- 4.1. The Supplementary CP considers Street Furniture as an emerging alternative to fixed broadband infrastructure. As opposed to conventional wireless networks which operate through Base Transceiver Stations (**BTS**), emerging network technologies harness low-powered small cells placed discreetly in existing utility infrastructure in public spaces, and aid in the creation of dense wireless coverage for urban spaces. Objects such as existing utility infrastructure such as utility poles, lamp posts and park benches, which can house such small cells are referred to as “street furniture.”

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<sup>16</sup> Please see <https://www.gov.uk/government/news/government-launches-new-5bn-project-gigabit> (last accessed on June 8, 2021).

<sup>17</sup> Please see <https://www.nottinghamshire.gov.uk/media/114959/betterbroadbandsubsidyschemefaq.pdf> (last accessed on June 8, 2021).

<sup>18</sup> Please see <https://www.imda.gov.sg/programme-listing/home-access> (last accessed on June 2, 2021).

- 4.2. Granting access to public buildings and street furniture, such as bus stop shelters, lamp posts or traffic lights, owned by public authorities, at low or no cost removes a significant hurdle to site deployment for proliferation of wireless networks.<sup>19</sup> Street furniture attains even more importance in the age of 5G networks. Small-cell networks created by utilising street furniture provide many more advantages such as lesser latency, more coverage, higher reliability, and faster speeds.
- 4.3. Street furniture are already being used in various countries boosting their 5G infrastructure and public private partnerships are also being explored:
- (a) In Singapore, the IMDA provides for a Code of Practice for Info-communication Facilities in Buildings (**COPIF**) which specifies the duties of building owners / developers to provide adequate space, facilities, and access for telecom licensees to provide their services.<sup>20</sup>
  - (b) The Japanese government had approved 2,08,000 traffic signals to be used to deploy 5G small-cell architecture by service operators.<sup>21</sup>
  - (c) In the German district of Lauchhammer, a state subsidy was given to an onsite cable company to implement a complete FTTH structure in the district. The industrial areas of the city of Lauchhammer are connected to the Internet at 10 Gbps and so far, 94% of the houses are connected with FTTH cables.<sup>22</sup>
  - (d) An increasing number of private entities, upon receiving support from the government are deploying small cell infrastructure in public buildings such as the Saló de Cent i.e., the city council of Barcelona, Spain to enable video transmissions of official proceedings.<sup>23</sup>
  - (e) Small cell infrastructure has also been deployed in ‘smart lampposts’ which also serve as electric vehicle charging stations in city of Guimarães in Portugal.<sup>24</sup>
  - (f) In Seoul of South Korea, 5G networks were established on subway lines being used as street furniture.<sup>25</sup>

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<sup>19</sup> Please see [https://www.gsma.com/publicpolicy/wp-content/uploads/2020/03/Realising\\_5Gs\\_full\\_potential\\_setting\\_policies\\_for\\_success\\_MARCH20.pdf](https://www.gsma.com/publicpolicy/wp-content/uploads/2020/03/Realising_5Gs_full_potential_setting_policies_for_success_MARCH20.pdf) (last accessed on June 2, 2021).

<sup>20</sup> Please see <https://www.imda.gov.sg/-/media/Imda/Files/Regulations-and-Licensing/Regulations/Codes-of-Practice/Codes-of-Practice-Infocomm/COPIF/COPIF-Overview.pdf?la=en> (last accessed on June 2, 2021).

<sup>21</sup> Please see <https://www.japantimes.co.jp/news/2019/06/14/business/tech/japan-install-5g-network-relay-devices-traffic-signals/#.XclwHDNKg2w> (last accessed on June 2, 2021).

<sup>22</sup> Please see <https://ec.europa.eu/digital-single-market/en/content/we-beat-cities-children-future-country-life-germany> (last accessed on June 2, 2021).

<sup>23</sup> Please see <https://acceleran.com/553/> (last accessed on June 2, 2021).

<sup>24</sup> Please see <https://www.5gcity.eu/2019/07/04/ubiwhere-accelleran-league-finals/> (last accessed on June 2, 2021).

<sup>25</sup> Please see <https://seoulz.com/a-comprehensive-guide-to-5g-in-south-korea-outlook-for-2021/> (last accessed on June 2, 2021).

- 4.4. However, while the deployment of street furniture provides a promising alternative to investments in fixed line infrastructure, there are several operational hurdles which could hinder rollout. As the TRAI rightly acknowledges, one of the key challenges to the roll-out of street furniture is the heterogeneity of each State/city's public system in the country. Therefore, the system of granting access to utilise street furniture is likely to vary from city to city. In fact, noting similar challenge, a group of researchers recommended the need for a holistic national framework to the United Kingdom's telecom regulator.<sup>26</sup>
- 4.5. One prominent example of a national level policy for a similarly heterogenous set of local systems, is the Motor Vehicle Aggregator Guidelines 2020 published by the Ministry of Road Transport and Highways in November 2020.<sup>27</sup> These guidelines set out recommendations for a licensing regime for aggregators, regulation of fares, safety measures, etc. which are non-binding and may be implemented by individual State Governments.
- 4.6. **Recommendations:**
- (a) The Government should work towards formulating a national-level policy framework for the installation of street furniture. A central agency may be established to coordinate communications between different government departments and stakeholders. Such initiatives would help bring a certain degree of uniformity and ease processes to adopt street furniture.**
  - (b) The Government can also consider earmarking certain public infrastructure (municipality buildings, post offices, bus, and railway stations, etc.) to have dedicated spaces that allow service providers to deploy small-scale architecture. Similar to the Japanese and South Korean models, traffic signals, metro lines, etc. can be identified as effective street furniture in regions where they are concentrated such as metropolitan areas.**
  - (c) The Government may also consider expanding the scope of the IP-I Category Registration to include sharing of active infrastructure to non-licensed service providers who deploy small-scale architecture in these infrastructure elements.**

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<sup>26</sup> Available at <https://www.kcl.ac.uk/policy-institute/assets/5g-innovation.pdf> (last accessed on June 2, 2021)

<sup>27</sup> Available at [https://morth.nic.in/sites/default/files/notifications\\_document/Motor%20Vehicle%20Aggregators27112020150046.pdf](https://morth.nic.in/sites/default/files/notifications_document/Motor%20Vehicle%20Aggregators27112020150046.pdf) (last accessed on June 2, 2021).