

Re: Comments to Consultation Paper dated May 19, 2021, on “Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed”

From: Dua Consulting

Date: 10th June, 2021

I. Issues for consultation

There are few issues which one must address before responding to the questions for consultations

A number of national and international regulators categorise broadband connections according to upload and download speeds, stated in Mbps (megabits per second).

Term	Regulator(s)	Min Download Speed (Mbit/s)	Min Upload Speed (Mbit/s)
Full fibre / FFTP/H ¹	Ofcom	100	1
Gigabit ²	EU	1000	1
Ultrafast ³	Ofcom	300	1
Ultra-fast / Gfast ⁴	EU, UK Government	100	1
Fast ⁵	EU	30	

¹ <https://www.ispreview.co.uk/index.php/2017/04/brief-price-comparison-uk-ultrafast-ftp-broadband-isps.html>

² <https://op.europa.eu/webpub/eca/special-reports/broadband-12-2018/en/>

³ https://www.ofcom.org.uk/data/assets/pdf_file/0018/100755/UK-home-broadband-performance.-November-2016-Consumer-guide.pdf

⁴ <https://op.europa.eu/webpub/eca/special-reports/broadband-12-2018/en/>

⁵ <https://op.europa.eu/webpub/eca/special-reports/broadband-12-2018/en/>

Term	Regulator(s)	Min Download Speed (Mbit/s)	Min Upload Speed (Mbit/s)
Superfast ⁶	Ofcom	30	1
Superfast ⁷	UK Government	24	1
Broadband ⁸	FCC	25	3
Broadband ⁹	Ofcom	10	1
Broadband ¹⁰	CRTC	50	10

The aforesaid table portrays the possible broadband speeds in some of the developed economies, or, should one go by the definition and plans of National Digital Communications Policy, 2018 (NDCP 2018), which enunciates proliferation of Broadband as captioned below? Laudable as they are, perhaps, it requires introspection as to how, when, where would we achieve these unachievable targets going by the progress made so far?

National Digital Communications Policy 2018 contains goals to propel development of India with use of next generation technology through investment, the policy proposes goal to attract "*investments of USD 100 billion in the Digital Communications Sector*" by 2022. Some goals in the NDCP 2018 include- "*Provide Universal broadband coverage at 50 Mbps to every citizen; Provide 1 Gbps connectivity to all Gram Panchayats of India by 2020 and 10 Gbps by 2022*"¹¹.

In pursuit of that policy- Is there a study available of clusters, areas seeking Broadband connectivity, and at what speeds or are we to make generic assumption of Broadband connectivity for the hoi polloi regardless of any business case?

⁶https://www.whatdotheyknow.com/request/378588/response/924461/attach/3/296020%20Reply.pdf?cookie_passthrough=1

⁷https://www.whatdotheyknow.com/request/378588/response/924461/attach/3/296020%20Reply.pdf?cookie_passthrough=1

⁸<https://www.nbcnews.com/tech/internet/faster-internet-fcc-sets-new-definition-broadband-speeds-n296276>

⁹https://www.ofcom.org.uk/_data/assets/pdf_file/0024/108843/summary-report-connected-nations-2017.pdf

¹⁰<https://crtc.gc.ca/eng/internet/performance.htm>

¹¹ National Digital Communications Policy 2018, Connect India: Creating a Robust Digital Communication Infrastructure, 2022 Goals- <https://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf>

While some progress has been made by BSNL, but the private sectors initiatives appear to be nowhere near, both in terms of execution and bringing in that wishful US\$100 billion. All this could be attributed to policy and regulation, generically describing the licensing or taxing policy. Nothing appears to have been done to address this anomalous situation of the prime suspect Annual Adjusted Gross Revenue for calculation of the all-important license fee, spectrum charge and USOF. The government appears to enjoy taxing the success of industry in perpetuity, creating paucity of investible funds. Success must be ploughed into businesses, and government should learn to levy taxes in a cash neutral manner.

In terms of how to implement, there are some options, provided we become technology agnostic with a *LAKSHYA* of provisioning of Broadband for all. That is possible, if we apply all available technologies, and not get mired into licensing and policy hurdles.

Another major hurdle is the Right of Way- for digging roads and access to electricity poles etc for installation of so called “Street Furniture”. Although these issues were addressed in 2015, but continue to be in a suspended animation without much progress. There is really no clear national level policy to share the spoils, which is the reason no one wants to share or pay for their real estate.

Suggestion like exemption of License Fee on the revenues earned from fixed line broadband (*Para 1.9 of the Consultation paper*) is nothing but another step towards adding confusion to the already messy and murky AGR definition. The astute accountants will find a way of arbitraging revenues to low license fee heads to save payments of license fees, spectrum charges, and not a penny would be passed to the consumers in tariff reductions. The second option is to pass benefit to the consumer directly, as practiced in the case of LPG Cylinder.

Before proceeding to offer a solution, it is prudent to have an inventory of supply side, like fibre network all across, access cables of all service providers or any other terrestrial network in a granular grid format. Focus to cover the unconnected or un-connectable by application of various technology solutions without being hung to one approach, depending upon requirements of customers in terms of bandwidth, latency, time frame and location.

Similarly, there has to be a consolidated document of real demand by proper studies, depending upon requirements of customers in terms of bandwidth, latency, time frame and location. Perhaps, a study of the migration pattern of present day cellular broadband users wanting to migrate to higher bandwidths is not possible in the 4 G environment.

The possibilities are as below:

- Create fountain heads of Points of Presence (POPs) of Fibre, there is plenty of fibre connectivity, if one aggregates the assets of RailTel, Power Grid, and Gail; in addition to the network of private sector. It is time one has complete inventory of the fibre assets in the country.
- Create Satellite hubs (POPs) to create bandwidth,
- To distribute bandwidth by either Fixed Wireless Access (FWA) in a radius of say 10 to 15 kilometres, or GPON or hybrid coax cables, or even conditioned copper pairs depending on speeds and distances from these two types of POPs.
- Allow direct satellite connectivity, best served by GSO satellites to anywhere and everywhere, for applications wherein latency is not an issue for example entertainment or shop floors not requiring real time interactions.
- There are options of Intermediate Circular Orbit Satellites, Low Earth Orbit satellites, and Medium Earth Orbit Satellites. They can be used for low latency requirements, and up to some 50MB/s speeds. It must be kept in mind that systems other than GSOs will require multiple stations with antennae farm depending upon the orbit and number of planes they are in for 24x7 coverage.
- Of course, strengthen the 4G network to global standards of delivery of plus 20 mbps or more before venturing into yet unproven 5G. The ubiquitous nature of the cellular network is an option going forward for the higher speed and capacity requirements in the interim.
- As corollary to the above, encourage dongles for fixed applications where cellular networks have penetrated.

If my memory serves me right there were around 45 to 50 million fixed lines at one time, what happened to those. There was also a recommendation to unbundle local lines of MTNL and BSNL. What progress if any has been made?

In addition, it would be prudent to have a costing model, for fixing tariffs uniformly all across the board. Questions about benchmarking rebates and subsidy are best addressed with costing and tariffing information. It may also be relevant to see how subsidy schemes in Broadband policies in developed countries have been formulated in order to get an insight in planning the Indian Policy. Some research in this regard has been appended in **Part III**, of this document.

With this introduction, an attempt has been made to address various issues for consultations.

II. The Responses to issues in the Consultation Paper

Q.1 What should be the approach for incentivising the proliferation of fixed-line broadband networks? Should it be indirect incentives in the form of exemption of license fee on revenues earned from fixed line broadband services, or direct incentives based on an indisputable metric?

Response: **Incentivising the proliferation of fixed-line broadband networks could be direct incentives based on an indisputable metric directly to the consumer as is the case of LPG cylinders. In no way, should there be indirect incentives in the form of exemption of license fee on revenues earned from fixed line broadband services.**

If the idea behind exemption of license fee, or indirect incentives is to proliferate fixed-line broadband by making it less expensive, it must be noted that it is highly unlikely that the service provider would pass on the benefits to the consumers in the proportion that they receive waivers. Granting a subsidy to the consumers would be a solution for increasing the demand, and gradual market penetration.

Q2. If indirect incentives in the form of exemption of license fee on revenues earned from fixed-line broadband services are to be considered then should this license fee exemption be limited to broadband revenue alone or it should be on complete revenue earned from services delivered through fixed-line networks?

Response: The entire gamut of license needs to be revisited with accepted economic principles of cash neutrality and not taxing success of industry in perpetuity, leaving less investable. One can't continue to milk the cash cows endlessly. These band aid solutions are best avoided; either overhauls the entire system or Direct Benefit Transfer (**DBT**) to consumers only. Indirect incentives would not offer a long term solution. We need to revisit the entire set of definitions in a more scientific and transparent manner, based on sound economic principles, not remain left to interpretations of some with blinkers on-with a sole purpose of revenue maximisation.

Q3. In case of converged wireless and fixed-line products or converged services delivered using the fixed-line networks, how to unambiguously arrive at the revenue on which license fee exemption could be claimed by the licensees?

Response: In view of the above two responses, the question from our perspective is irrelevant.

Q4. What should be the time period for license fee exemption? Whether this exemption may be gradually reduced or tapered off with each passing year?

Response: Taper of DBT say in 5 years. However, one needs an across industry approach of tariffs like the cylinder price in matrix of Bandwidth, Latency and distance parameters to fix a starting reference point.

Q5. Is there a likelihood of misuse by the licensees through misappropriation of revenues due to the proposed exemption of the License Fee on the revenues earned from fixed-line broadband services? If yes, then how to prevent such misuse? From the revenue assurance perspective, what could be the other areas of concern?

Response: Of course, there is a likelihood of misuse by the licensees through misappropriation of revenues due to the proposed exemption of the License Fee on the revenues earned from both purely fixed-line broadband services, and a mix of Fibre, coax, copper plus wireless. Just don't do it except DBT. This could invite a new set of problems.

Q6. How the system to ascertain revenue from fixed-line broadband services needs to be designed to ensure proper verification of operator's revenue from this stream and secure an effective check on the assessment, collection, and proper allocation and accounting of revenue. Further, what measures are required to be put in place to ensure that revenue earned from the other services is not mixed up with revenues earned from fixed-line broadband services in order to claim higher amount of incentive/exemption.

Response: We are not in favour of the convoluted approach of revenue segregation from fixed-line broadband services. The approach is flawed for both service provider, and government. Most importantly, if the idea is to proliferate broadband by making it less expensive, why not DBT to the consumer directly? Highly unlikely that service provider would pass on the benefits to the consumers in the proportion that they receive waivers. Why also increase their book keeping requirements, when it serves/benefits no one.

If at all services providers are to be let of by lowering License fees for broadband services, let them truthfully submit the list of consumers at the tariffs at which the service is provided, with if and buts. Simple number of Broadband consumers, revenue against each to be netted from the revenues. A simple statement of number of consumers multiplied by tariff per unit.

As stated in our introduction, broadband speeds by some universal definitions can be delivered for fixed application by using dongles, should not those be encouraged or only resort to hardwired broadband connectivity?

Q7. Is there any indisputable metric possible to provide direct incentive for proliferation of fixed-line broadband networks? What would be that indisputable metric? How to ensure that such direct incentives will not be misused by the licensees?

Response: The metric or matrix can be created once the costing model, the tariffs based on that model are arrived at uniformly across the industry. Once that information is available, a rebate equivalent to cost plus model is possible. To speak in terms of percentages is a folly at this stage.

**Q8. What are key issues and challenges in getting access to public places and street furniture for installation of small cells? Kindly provide the State/ City wise details.
and**

Q9. How to permit use of public places and street furniture for the effective rollout of 5G networks? Kindly suggest a uniform, simple, and efficient process which can be used by States/ Local-Bodies for granting access to public places and street furniture for installing small cells. Kindly justify your comments.

Responses: Let us be upfront, we as a nation regret our inability to provide state wise details. Having said that, it is a no brainer of turf protection of state properties without sharing the spoils with them. Despite various TRAI recommendations, central diktat, there is very little or no progress. One possible approach could be to have inter-state empowered body of IT secretaries, revenue secretaries of all states to discuss the various issues holding up, and affecting them. Ideally, they would be interested in the central government sharing revenues earned because of use of their properties on the same bases as say GST. This is a serious roadblock and has to be tackled in a realistic proactive manner by Government of India. After all, some states are installing and executing their own “Vahaanis”, State Wide Area Network (SWAN), named GSWAN in Gujarat and Andhra Pradesh State FibreNet Limited (APSFL). There could be others states as well.

They must be convinced of benefits at both state and national level in terms of economic growth and prosperity by employment generation

Q10. Which all type of channels of communication should be standardised to establish uniform, transparent, and customer friendly mechanisms for publicising provisioning of service and registration of demand by Licensees?

Response: After fixing tariffs and rebates, best left to service providers to market their wares. TRAI and/or Government authorities need to intervene in case of deviations in the policy guidelines. There could be mail shots and advertisements in the print and visual media of steps being taken, but day to day marketing is the domain and responsibility of service providers.

Q11. Whether proliferation of fixed-line broadband services can be better promoted by providing Direct Benefit Transfer (DBT) to subscribers of fixed-line broadband services? If no, elucidate the reasons.

Response: The response to this is an empathic yes to resort to DBT to subscribers of fixed-line broadband services. The approach is non-intrusive, tried and tested in the case of cooking gas cylinders. It is elegant, easy to implement, independent of service providers, transparent as well as uniform across the board and saves the discretionary powers of the government. DBT is not dependent on the small mercies of the service providers.

Q12. If answer to Q11 is affirmative, then:

i. Should DBT scheme be made applicable to all or a particular segment of fixed-line broadband subscribers? Kindly justify your comments.

Response: DBT scheme should be made applicable to all not restricted to a particular segment of fixed-line broadband subscribers. After all what is being debated and discussed is the proliferation of broadband services, and not how these are provided? It would add to confusion in the minds of consumers that if they choose a technology they might stand to lose largesse. Therefore, the best is subsidy for a broad band consumer, no matter how he gets the service. Such an approach also does not put additional burden on service provider to be wedded to a technology. He can provider service in an agnostic manner. It is pertinent to apply technology to serve consumers promptly.

ii. If you recommend supporting a particular segment of fixed-line broadband subscribers, how to identify such segment of the subscribers?

Response: We do not recommend supporting a particular segment of fixed-line broadband subscribers. It should be across the board as detailed above please.

iii. How to administer this scheme?

Response: Follow the LPG solution, already tried and tested.

iv. What should be the amount of DBT for each connection?

Response: The amount of DBT for each connection of a 25 mbps line could be equal to cost difference between rack rate and cost of service provision.

v. What should be the period of offer within which individuals need to register their demand with the service providers?

Response: Say three years to assess demand and implement solutions.

vi. What should be the maximum duration of subsidy for each eligible fixed-line broadband connection?

Response: Not exceeding five years or achieving the target of NDCP, whichever is earlier. It is expected that by that time the economic equation/theory of demand supply might pan out, resulting in stabilised and affordable tariffs. Please see Part III below

Q13. Any other related issue

Response: The most important aspects which have been lost sight of are both on demand and supply side. Why do we say that? On the supply side, it is emerging that fibre will play an important part to achieve the goals. There are broadly three agencies providing fibre in government sector, BSNL, Power Grid, Railways and Gail (insignificant though). In addition there are private sector companies like Reliance (using generic name) Bharti, Tata etc. Then we also have some state governments doing their bit. First and foremost, is there a central list of the inventory availability of the fibre in a grid form? Is there a grid map of fibre of various agencies to be able to study the gaps?

Similar is the case of the demand side, is there a study which clearly indicates requirement down the road to provide a glide path for implementation or one has to go by guess work, in terms of numbers and speeds. There has to be demand maps in a glandular form. We can't just continue to throw numbers on the basis of hunches. We are sorry, but the present document or the past documents don't give a clear idea about the two.

How open are we to become technologically agnostic, i.e. provide a service to the consumer in cost and time effective manner, meeting his technical requirement of bandwidth and latency, as per his time frame? Technology agnostic approach requires drastic changes in the policy and regulation. That requires a change in the mind-set of the authorities across the board.

In order to address the issues of ROW, access to resources in cities and towns owned by Civic bodies, a way has to be found to reimburse them either for USOF or out of the proceeds of License fee. The spoils can't be the centre takes it all attitude.

It is also expected that satellites are going to play an important role in achieving these targets. Therefore, the Satellite Communications Policy needs to be finalised quickly with an open mind to procure capacities from other than ISRO. This also could be reached by entering into a collaborative arrangement, so everyone is an owner as well as beneficiary.

III. Broadband subsidy schemes followed in other countries

1. UK

- a) **The Better Broadband Subsidy Scheme** had been developed by the UK government¹² to provide access to a subsidised broadband installation at homes and businesses that are unable to access a broadband service with a download speed of at least 2 Mb per second and who will not benefit from the superfast broadband roll out. The Better Broadband Subsidy Scheme was incorporated to ensure that no household or business would need to pay more than £400 to access a basic broadband service over a 12 month period.

Households and businesses can take advantage of the Scheme if they meet the following three criteria.

- Your home or business is not currently able to access a broadband download speed of at least 2Mb per second.
- There are no alternative affordable broadband services available to you, which would provide a download speed of at least 2Mb per second.
- There are no plans to provide superfast broadband to your location within 6 to 12 months of your application.

The Better Broadband subsidy scheme is no longer in use and the application was available till 2017, after which it was removed. The pandemic times have brought consumers campaigning, asking the UK government to bring back the scheme, stating that a good internet is not a luxury but a necessity. This campaign was started demanding the Government to do more than funding dongles and routers to for kids that live in areas where the equipment just won't work because of poor mobile coverage and to reinstate the supplier neutral Better Broadband Subsidy Scheme funding in England to enable any alternative broadband suppliers across the country to get kids online.¹³

¹² https://ec.europa.eu/competition/state_aid/cases/243212/243212_1387832_172_1.pdf.

¹³ <https://www.simrush.com/bring-back-better-broadband-subsidy-scheme/>

- b) Another Policy on UK, **The Gigabit Infrastructure Subsidy**¹⁴ laid out a vision for a full fibre and 5G future for the UK highlighting the considerable potential benefits to the UK, and insights out of the proliferation of broadband in India, some of which are:
- work commissioned by the UK's National Infrastructure Commission (NIC) estimated net benefits from investment in FTTP with 100% coverage of up to £28 billion (in present value terms) by 2050. This is before taking account of the potential for FTTP to deliver wider economic benefits, for example, improvements in productivity;
 - a study commissioned by Ofcom found that investment in broadband has had significant benefits to the UK economy and that increased connectivity has a positive relationship with economic growth and productivity;
 - a study undertaken for Cityfibre had predicted that the total economic impact of deploying 'full fibre' (FTTP) broadband networks across 100 distinct UK city and towns, could reach £120 billion over a 15-year period;
 - evaluation of the NBS 2012 found that making superfast broadband speeds available also appeared to raise the productivity of firms. It is estimated that the programme led to a net increase in national economic output (GVA) of £690m by June 2016.

2. USA

The Emergency Broadband Benefit is an FCC¹⁵ (US scheme) program was introduced to help families and households struggling to afford internet service during the COVID-19 pandemic. This new benefit shall connect eligible households to jobs, critical healthcare services, virtual classrooms, etc. The Emergency Broadband Benefit shall provide a discount of up to \$50 per month towards broadband service for eligible households and up to \$75 per month for households on qualifying Tribal lands.

A household is eligible if a member of the household meets one of the criteria below:

- Has an income that is at or below 135% of the Federal Poverty Guidelines or participates in certain assistance programs, such as SNAP, Medicaid, or Lifeline;
- Is approved to receive benefits under the free and reduced-price school lunch program or the school breakfast program, including through the USDA Community Eligibility Provision in the 2019-2020 or 2020-2021 school year;
- Has received a Federal Pell Grant during the current award year;

¹⁴https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/990516/Gigabit_Infrastructure_Detailed_Overview_v0.6.pdf

¹⁵ Emergency Broadband Benefit, <https://www.fcc.gov/broadbandbenefit>.

- Experienced a substantial loss of income due to job loss or furlough since February 29, 2020 and the household had a total income in 2020 at or below \$99,000 for single filers and \$198,000 for joint filers; or
- Meets the eligibility criteria for a participating provider's existing low-income or COVID-19 program.