TTSL Responses to TRAI Consultation Paper on Delivering Broadband Quickly

Q1. What immediate measures are required to promote wireline technologies in access networks? What is the cost per line for various wireline technologies and how can this cost be minimised? Please reply separately for each technology.

Measures to promote the wireline technologies in access networks:

- Though already available in some form or the other, the regulatory authority should come up with further guidelines to promote unbundling and sharing of resources (Copper and Optical Fibre) in the access. The access model could be replicated for Optical Fibres in back Haul and Backbone. This could mutually benefit the service providers both in public and private sector.
- Exemption of 'Right of Way' (ROW) charges for laying optical fibre. The ROW charges for laying Optical fiber is very high in Metros & Tier 2 Cities where the generation & hosting of the content will be highest which makes it very difficult to provide high speed Internet to broadband users
- Fixed infrastructure of all types of all types including that for NFON etc. may not be restricted to only Government use and vice versa. This could help to drive Government social objectives as well as both social and commercial objectives of industry
- More and more the infrastructure available in both in Public and Private Domain would be used mutually; its full potential can be unleashed and gainfully exploited by both the government and private sector services.

Cost Minimization Steps for Wireline broadband access technologies:

- Reduce Customs duty and declare Customs Holiday for wireline broadband access infrastructure and CPE.
- Get Wireline Infra and CPE to be manufactured in India.
- Apart from the above suggested measures, Government can also incentivize TSPs in terms of lower license fee especially in rural India.
- Uniform/ Nil RoW for promotion of wireline based services

Q2. What are the impediments to the deployment of wireless technologies in the access network? How can these deployments be made faster? Please reply separately for each technology.

Key impediments in the deployment of Wireless access technologies:

Mobile Wireless Access: The release of additional spectrum from all sources, appropriate and logical distribution of available spectrum are well known impediments and need resolution expeditiously at most priority. Also, Government may appreciate that CDMA spectrum is one of the best options for efficient and broadband high speed systems.

Additionally spectrum efficiency of available bands has its own theoretical and in field limitations. It would be desirable to expedite additional spectrum as well as explore spectrum bands to be allocated to the industry both for voice and high data rate services.
Administrative bottlenecks and outdated processes such as 'import licence' and 'wireless operating licence', which are hindering the network planning and growth of telecom infrastructure, should be abolished for licensed service providers.

Need for further simplification of the process to have a single window clearance and timely approvals by SACFA.

Wi-Fi: Wi Fi is being used to support broadband connectivity to a wider group users in homes, offices and hotspots as also envisaged in Digital India Program. Wi fi gained popularity as it is operated in the Industrial, scientific and Medical (ISM) band of 2.4-2.4835 GHz as well as some bands in 5 Ghz. WiFi can provide Broadband at affordable costs and at high data speeds. This would also help in decongesting mobile band.There is further need for upgrading the speed of Speed of the Wi-Fi network beyond current levels. A larger portion of 135MHz to be released in the 5 Ghz spectrum band for promoting the Wi-Fi IEEE 802.11ac as a mean of providing high band width access.

Another band in the range of 63 Ghz or so could be made license free for very high speed. Govt should come out with revenue sharing model and resolution of long pending ROW issues to facilitate and encourage creating of quick Wi-Fi hotspot.

Wi-Max: Use of WiMax and Satellite and some related policies may be strongly considered by the Government for Social and other obligatory applications including those required for disaster management as supported by Broadband

Q3. The recommendations of the Authority on Microwave backhaul have been recently released. Are there any other issues which need to be addressed to ensure availability of sufficient Microwave backhaul capacity for the growth of broadband in the country?

Existing backhaul links will not be sufficient to cater the large data demand. Cost should be further reduced and more bands should be made available to TSP for MW links.

- 15 carriers are available in 15 GHz band for allocation to 7-8 operators per circle, a cap of max. 2 MWA carriers needs to be defined per operator in 15 GHz band.

- Excess spectrum especially in 15 GHz should be withdrawn immediately and should be distributed equally among all TSPs.

- MWB allocation should be done on exclusive basis and the charging for these carriers should continue to be on AGR i.e. circle basis.

We believe that the above suggested measures will ensure availability of sufficient MW backhaul for the growth of the broadband in the country.

Q4. The pricing of Domestic Leased Circuits (DLC) have been reviewed in July 2014. Apart from pricing, are there any other issues which can improve availability of DLC?

Govt should enforce the laying of pipes, conduits, while building the new highways, townships, last mile buildings etc. and facilitate right of way to be made available to TSPs

Q5. What are the specific reasons that ISPs are proactively not connecting with NIXI? What measures are required so that all ISPs are connected to the NIXI?

Despite the existence of NIXI, bulk of the domestic traffic continues to go out the country. There is strong case to make NIXI more effective.

Future growth of the internet will be from tier 2& 3 cities and it is very essential that this segment has internet access with acceptable QoS which will happen if the content providers are also connected to NIXI.NIXI should be brought under regulation in terms of QoS, tariff and infrastructure on hand.

95% of the internet traffic gets peered bilaterally and very little gets exchanged at NIXI nodes. Nixi nodes are not optimally located for ISP to reached .NIXI nodes must be interconnected and replicated across the country, to help the TSPs and ISPs buy transit cost effectively.

Content developed in India could be a good possibility in such a case.Content providers be allowed to connect with NIXI nodes.

Q6. Would the hosting of content within the country help in reduction of the cost of broadband to a subscriber? If yes, what measures are required to encourage content service providers to host content in the data centre situated within India?

Hosting of content within the country will help in reducing the cost of ISP and in turn cost of broadband to a subscriber. Govt could encourage local content developers and data centers by way of special purpose vehicle.

Content in regional languages is an important aspect. Data centres should be facilitated with quality certification to offer them secured data hosting to their customers.

Govt should improve the quality of the power provided to Data center. May explore setting data center Zones with specific power facility (Subsidize power and quality power)

Q7. Are PSUs ideal choices for implementing the National Optical Fibre Network (NOFN) project?

Rather, all TSPs should be integral part of such a project. Already laid network of fibre of TSPs can consider in NOFN project for faster completion of such requirements. Similarly, there could be meeting points at various levels of Public and private network, end to end

Q8. Should awarding of EPC turnkey contracts to private sector parties through International Competitive Bidding (ICB) be considered for the NOFN project?

If we interpret the question correctly, it is felt that awarding contract to only and purely national players in national interest.

The international bidding should only be allowed at the stage if in any case, the demands are not met by already available resources in the country.

Rather the existing TSPs capabilities should be fully used and exploited to its full potential as first priority for these type of projects.

Q9. Are there any ways in which infrastructure development costs can be reduced? Is it possible to piggyback on the existing private sector access networks so as to minimize costs in reaching remote rural locations?

Mobile wireless access is one of the best suited technology for providing broad band access to rural India as the mobile devices are already becoming available and becoming applicable

and smarter even for rural broadband. Government can also incentivize TSPs in terms of lower license fee especially in rural India.

Govt should make more spectrum available to Private Sector. This will make a viable business case to TSPs to offer their service in remote rural locations.

In any case, it is surely possible to piggyback on existing private sector access network by way of sharing infrastructure like fibre for immediate rollout and increase the penetration of broadband in a time bound manner.

Q10. What can the private sector do to reduce delivery costs? Please provide specific examples?

Sharing of recourses is the key. Between private and govt players should be encouraged. Optimum and maximized usage of unbundled resources and solving all the pending issues of simplified, single window and very low priced right of way end to end are very important aspects.

Q11. What are the major issues in obtaining right of way for laying optical fibre? What are the applicable charges/ constraints imposed by various bodies who grant permission of right of way? In your opinion what is the feasible solution?

As mentioned in above paragraphs, ROW clearance is major challenge in proliferation of OFC network in the country. The issues have been raised in all forums, various levels and repeatedly. Needless to see that different states, local bodies and Panchayats have different rules, criteria, cost, timeframe and conditions for ROW clearance.

There are issues in the last Mile connectivity regarding charges etc. The variation in prices from place to place and in different scenarios has been raised by the industry including implementation difficulties. The effort which Government is making for NFON should be made further more aggressive for all use cases and Scenarios.

Govt should come up with uniform policy applicable PAN India on ROW issues for service providers not just limited to NFON.

Q12. Should the Government consider framing guidelines to mandate compulsory deployment of duct space for fibre/ telecommunications cables and space for telecommunication towers in all major physical infrastructure construction projects such as building or upgrading highways, inner-city metros, railways or sewer networks?

Government should strongly consider framing guidelines to mandate deployment of duct space for fibre/telecommunication cables and space for telecommunication towers when any new residential/commercial project starts. Creating telecom infrastructure after completion of the project cause efforts and cost. Such points have been raised and brought out to Government's knowledge from to time at all levels and repeatedly

Q13. What are the impediments to the provision of Broadband by Cable operators? Please suggest measures (including policy changes) to be taken for promoting broadband through the cable network.

Poor quality of the broad band offered and unstructured infrastructure by Cable operators is the key impediment.

They should be brought under similar regulation regime like TSPs to be further mandated by QoS parameters.

Q14. What measures are required to reduce the cost and create a proper eco system for deployment of FTTH in the access network?

- Connecting homes directly by technologies GPON in the access / upto street corners,/ near buildings / to the building entry points and also at possible places in Backhaul with back bone of Optical fibers can enables enormous improvements in the bandwidth that can be provided to consumers.

- Further, as cable modem and DSL providers are struggling to squeeze increments of higher bandwidth out of their technologies, ongoing improvements in fiber optic equipment are constantly increasing available bandwidth without having to change the fiber.

- The fiber networks are said to be future proof and can offer higher speeds based on demand.

- Duct laid for the purpose may be shared by the TSP as per rules laid down. To incentivize the sharing Right of way" may be prescribed.

- Duct space to be made mandatory in new projects. ROW as described in above Paragraphs.

Q15. Are there any regulatory issues in providing internet facility through Wi-Fi Hotspots? What are the reasons that installation of Wi-Fi hotspots has not picked up in the country? What type of business model needs to be adopted to create more Wi-Fi hotspots?

- Security, safety, ownership and RoW are the key issues which are impeding the growth of Wi-Fi hotspots at the public places in the country.
- Govt should come out with certain guidlines which ensure the safety of the devices put up for Hot Spots.
- Rather such devices should be owned by civic agencies as the way street lights are owned.
- Business Model: Hotspot should be developed at the public places such as hospitals, ISBT on revenue sharing model.

Q16. What are other spectrum bands which can be unlicensed for usage of Wi-Fi technology or any other technology for provision of broadband?

De-licensing and subsequent provisioning of newer bands like 60 GHz for deploying WIFi access shall aid faster broadband deployment.

Q17. How much spectrum will be required in the immediate future and in the long term to meet the target of broadband penetration? What initiatives are required to make available the required spectrum?

Spectrum requirement to meet the target of broadband penetration:

- All Major operators are expected to have at the least 25 to 35% of the existing 2G/3G subscribers with Smart phone adoption and they constitute the potential Mobile BB subscribers with expectations of better grade of service at higher speeds supporting Video clip capable downloads.

- Also in a country with highest Subs density per Sq.km ,Highest Concrete Density per Sq.Km and highest vegetation density per Sq km ,each TSP should have at the least 2 carriers of 4G Spectrum of 10 MHz Channel width and 2 Carriers of 3G with 5Mhz Channel width and that too preferably in sub Ghz bands for better indoor coverage.

- This requires to be complemented by Inter-Band Carrier Aggregation technology for wide scale adoption and thus Telcos need at the least one 10 MHz carrier or two 5 MHz carrier s from 2.6 GHz and 1800 MHz bands .

About 200 to 250 MHz would be desirable for a true Digital India and Wireless BB India.

Initiatives are required to make available the required spectrum:

- Shift non commercial Agencies other than Telecom Service Providers from 900 MHz and 1800 MHz and make available requisite spectrum to TSPs.
- Ensure the Availability of entire spectrum as identified for IMT Bands for commercial usage by TSPS in each band i.e. 800/900/1800/2100 MHz.

Q18. Are there any other spectrum bands apart from the ones mentioned in Chapter-2 to be identified for provision of wireless broadband services?

In order to meet the requirements of mobile broadband in the country, the following bands should be made available for allocation in the near future:

- 470-698 MHz – This band is already having a co-primary allocation to the mobile service in the Asia Pacific region. This band is essential to provide widespread mobile broadband access, especially inside buildings and in rural areas.
- 2.6 GHz – Presently this band is used by Department of space for satellite uplink however the same is being done in some pockets and rest of the spectrum can be made available for broadband use.
- 3400-3600 MHz – This band has already been identified for IMT in India as well as by few other major countries in the Asia Pacific region. This is a good spectrum for areas of high population density.

Q19. What are the measures required to encourage Government agencies to surrender spectrum occupied by them in IMT bands?

- India is a signatory to WRC recommendations and ITU recommendations. Thus it is imperative for DoT to make every effort to comply to Global harmonized Band Allocations as per IMT Spectrum bands and make the full spectrum available for Cellular Industry.
- DoT to pursue with the MoD to move on to 3 Ghz + bands and free up the entire sub Ghz bands and the entire 2+Ghz bands from strategic use and make them available for Cellular industry .

- DoS with all its proven, recognized and reputed R&D capabilities should also design, and produce Satellite Communication terminals and migrate to Global Standards for making Tablet form factor Satellite terminals for Defence forces usage. This band could be refarmed for TSPs usage.Thus the entire 2.6 GHz Spectrum which is the most popular band in all the countries in USA/Europe /APAC/Africa & Middle-East and South America for 4G technology should be made available to Cellular industry.

- MIB should also enable the release of the entire 700 MHz band which is conformant to Global harmonized Spectrum band allocations as this is the most popular techno-economical spectrum band for Mobile BB Service delivery.

These points have been elaborated in many forums.

Q20. What should be the time frame for auctioning the spectrum in 700 MHz band?

We understand that 700 MHz band is particularly well suited for provisioning of mobile broadband services as it has good propagation characteristics. In India, this band has been identified for IMT services and India has also adopted the APT 700 model for using this band in FDD model .It is estimated that multiple band affordable devices may be available by 2016-17, so that could be the appropriate time.

Q21. Do you agree with the demand side issues discussed in Chapter 5 and Chapter 6? How these issues can be addressed? Please also indicate any other demand side issues which are not covered in the CP.

- We totally agree with the demand side issues discussed in chapter 5 and chapter 6. Govt will have to play vital role in addressing these issues.
- As mentioned in our response to previous question, Govt should promote the content development in vernacular.
- Govt could also advise Corporate to spend part of their CSR budget to increase Digital Literacy rate of Indians so that they can use broad band applications.
- Regional content and the same in regional languages is extremely important.
- Steps, to make smart phones available at affordable costs as well as user friendly applications and operations are important

Q22. Please give your comments on any related matter, not covered

Creation of Broadband Fund: We would further like to suggest that a special Broadband Fund may be set up to specifically meet the national broadband objectives of the Government. A part of earnings from the spectrum auction say 1% from those auctions should be transferred to the National Broadband Fund to support national level broadband activities.

Rationalization of Levies and Duties on the Sector

- The Indian mobile industry is burdened with a very high cost structure and also subject to multiple duties and levies, both at the central as well as the state level which hamper expansion of affordable service.
- There is a need to reduce and rationalize the cost structure of the sector to bring it in line with comparable regimes so that affordability of services can be improved further. With respect to provisioning of broadband, it is essential that these levies are rationalized as this will not only serve to increase take up of service but will also improve usage.
- Permit this to be amortizable for tax computation purposes during the tenure for spectrum usage rights.
- Companies providing Internet and broadband connectivity be exempt from income tax for ten years under section 35 (A) of Income Tax Act.
- Lowering of customs duty on broadband network deployment products & user devices.
- Tax relief in terms of custom duty, import duty should be considered in order to reduce the cost of CPE imported for broadband in the country.
- 100% depreciation should be allowed on capital expenditure on Information technology and telecom/ broadband equipment.