

VTL/Reg/TRAI/1410/4289
October 20, 2014

Sh. Arvind Kumar
Advisor (NSL),
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan,
Jawahar Lal Nehru Marg (Old Minto Road)
New Delhi — 110 002

Subject: VTL Response on Consultation Paper on " Delivering Broadband Quickly: What do we need to do?"

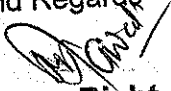
Ref: TRAI Consultation Paper No. 12/2014 dated 24th September, 2014

Respected Sir:

Videocon Telecommunications Limited welcomes the opportunity to give our comments to TRAI's consultation Paper on "Delivering Broadband Quickly: What do we need to do?". Please find attached herewith our response on the same.

This is for your information and kind consideration please.

Kind Regards



Meena Bisht
Regulatory Affairs
Mobile #: 9310225538

Encl.: as above



Videocon Telecommunications Limited

Response to the TRAI Consultation Paper on “Delivering Broadband Quickly: What do we need to do?”

Videocon Telecommunications Limited supports TRAI's vision to achieve accelerated, affordable & ubiquitous broadband access across the length and the breadth of the country. We strongly believe that broadband connectivity should reach all citizens of India in urban and rural areas. This consultation paper provides an opportunity to discuss possible ways to improve the proliferation of broadband as envisaged in National Telecom Policy 2012.

As rightly mentioned in the Consultation Paper, Broadband plays a critical role in the economy and contributes significantly to the development and social progress in a developing country like India.

Issues for Consultation:

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.

Ans: Wireline technologies used for delivering broadband are mainly Digital Subscriber Line(DSL),ADSL,Copper Loop, Cable TV (CATV) and Fibre to the premises or Fibre to the Home (FTTH). Functioning of DSL/ADSL are highly sensitive to the quality of the copper loops and the distance in the last mile. There are around 30 millions fix line connections in the country and majority of these being with the PSUs. Nearly half of this number is the wired broadband connections working in the country. The Wireline subscriber base is continuously declining as maintaining the quality of copper pair suitable for broadband operation is a costly and time consuming process.

Therefore, we foresee that DSL has a limited future in the country. Thus it is not possible to keep DSL technology on wireline as major contributor in achieving the BB targets set in NTP-2012.

Internet Access on Cable TV Network:

As we are aware that the Cable TV network at present is an uncontrolled market as there is limited changeover/migration to the Digital Cable Modems in the country via Set Top box. The Cable TV network is mostly unorganized and uncontrolled market inspite of the fact that Ministry of Information and Broadcasting is trying hard to control this market by digitization of the network. The services currently provided over the cable network by some of the organized players are limited to certain areas only. There are many factors due to which it is limited like this sector is unorganized,



Videocon Telecommunications Limited

unlicensed and deployment of access equipments requires huge investments comparable to the requirement for video delivery. For delivering internet it is necessary to have good back bone connectivity with the upstream providers and robust last mile connectivity through underground or overhead systems.As digital systems are prone to be affected by the mode in which they travel, therefore the delivery via the secure ducting is a challenge for the cable TV operators.Right now most of the cable operators carry the cable by tying with Electric Poles,trees and some extensions of houses etc.It caters to the Video upto some extent but delivering the internet with committed speeds and QOS would be a challenge.

Therefore, it is suggested that inorder to encourage the cable TV proliferation for the internet services there is immense need to bring cable operators into the licensing regime so that there is better control on the committed speeds/costs and the QOS.Thus only a serious player can enter into this domain and if required this may be incentivized by providing them exemptions for the customs duties and other levies to reduce deployment costs. Also the major roadblock for the cable TV is the ROW issues and various municipalities and RWAs are asking for the exhorbant charges for providing the ROW permissions to their complexes/localities etc. As a start, Govt may make all the local bodies and local bulding permission authorities to mandate all the new constructions to provide the access free of cost to all the service providers by providing termination facilities in their buildings and complexes.

Internet on other wired BB access networks using technologies like Ethernet based LANs and BB over powerline (BPL) are hardly in use in India. Hence, realization of broadband on the above infrastructure is worth exploring, as huge Ethernet and power line infrastructure exist in the country.

An excellent penetrated wireline network will definitely complement the wireless network as in some parts it can ease out the shortage of spectrum and reduce load on spectrum.

Cost Per Line :-

As per our own calculations as we are providing limited services in some of the geographies/localities in the country the costs are mentioned below with the impendiments inherent which limiting its further growth:-

S. No	Technology	Installed Capacity Basis (INR)	Utilization Capacity Basis(INR)	How to minimize cost
1	ADSL	11800	18493	Reduction of basic import duty for optical equipment to ZERO %.
2	VDSL	25027	34438	
3	FTTH	15815	20025	



Videocon Telecommunications Limited

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.

The biggest impediment for the deployment of wireless technologies in the access network for provision of broadband is the paucity of right spectrum. Considering the vastness of the country and the imperative of providing broadband predominantly through wireless technologies, it is important to choose the spectrum which would provide both capacity and reach. There is an immediate need to get all present and future IMT bands cleared from all the government agencies and harmonize all current commercial assignments so that each operator gets large chunks of contiguous blocks of spectrum in the most efficient bands. There is also a need to define the roadmap, including quantum, broad timelines for availability and tentative auction time for all the bands of spectrum to be used for mobile broadband. This should be the prerequisite for the commencement of any auction in the Telecom sector along with regulatory certainty as well as financial sustainability.

Impediments in deployment of Wireless Broadband:-

1. Restriction by Government and Municipalities for putting wireless sites/towers in non-commercial areas/residential is further restricting the speed of deployment.
2. Release of any other unlicensed bands
3. The Government must look at various issues related to RoW.

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?

Ans: The recommendation of authority is very proactive and timely in the case of Microwave Backhaul, we submit that the increased proliferation of LTE base stations would require allocation of specific spots in the V-band & E-band to minimize the interference. With the LTE poised to be the technology for provision of broadband, link-by-link allotment in the V-Band & E-band will make the use of this spectrum inefficient and the interference management would become a nightmare for the Service Providers.

Recommendation:-

Therefore it is strongly recommended that the allocation on circle wise may continue and the charging shall be AGR based instead of reverting to link base.



Videocon Telecommunications Limited

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?

Ans: There are no other issue required to be addressed as the DLC market is working fine with large number of service providers in the strong market place.

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?

Ans: As on today there are many reasons why the connectivity of the upstream service providers are not beneficial to most of the bigger players as 90% of the contents are hosted in USA. Right now unless there is sufficient content available in India then only it may be possible that the upstream ad bigger service providers get conneted to the NIXI and the end cutomers gets benefit of exchanging the traffic in India. Thus only small content providers are available in India therefore only very insignificance termination is there with the NIXI for the exchange of traffic. There are many limitations in India for creating infrastructures of hosting contents in India due the limited data centres capacity is available in India. In future if more Data Centers and Govt Policies if mandate all the major content providers to host their services in India then only it will be a good proposition for connecting with NIXI.

It is also important to finalize the IP interconnection between different service providers, which would synergies the carriage of IP traffic for Internet as well as Inter operator traffic.

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?

- Yes, definitely it will help in reduction of the cost of broadband to subscribers because charges for ISP bandwidth will be reduced considerably as there will be significant reduction in the cost of International bandwidth.
- Sufficient incentives may be provided to all the Data Center Facility providers so that all the content providers can host their servers in India or creat mirror images in India.
- Govt need to create a special Task force for creation of the data center facilities in all the states Zila Hqs/State HQs and central HQs so that all the content in the country can be shared in India. Although lot of work has been done but still our education institutions, like universities, IITs IIMs R&D labs Govt institutions required to integrated with the industry so that everybody is connected to one platform through a facility like NIXI or any other means. Thus, it will creat hugh content in India and so our end users get more economical bandwidth and required contents hosted in India in their own regional or local languages also.



Videocon Telecommunications Limited

- Caching servers – to be provided by ISPs in India selling International bandwidth, resulting 30-40% bandwidth cost reduction.
- The content elsewhere.. reflecting culture and uniqueness of the different states is hosted, there will be considerable increase in the interest of the people to access those content
- Content development in Indian regional languages in the contry required to be harnessed.

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

&

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

&

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?

&

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

- We believe that a nationwide, professionally implemented national backbone network can surely act as a great catalyst for broadband penetration in the country. However, it is important that NOFN needs to be more holistic and comprehensive to take this project to next level.
- Many analysts have clearly noted that the NOFN project would build a strong middle mile, but for a sustainable and scalable ecosystem with viable and profitable business models around the relevant e-services for the rural masses, the core and last miles would also need to be taken care of. The biggest hurdle in the taking off of the NOFN project is that there is no focus on the core and the last mile connectivity.
- Until and unless a strong business case is built including designing of the services, provisioning of these services to the customers, hosting and tariff option, etc., there will be no takers for this connectivity at the block level. There is need for a favorable policy environment to be in place in order to develop sustainable business models for the takers of this connectivity
- Secondly there is huge optical fiber already laid by the pvt sector players across the country and they are successful in catering to the demand of the enterprise customers besides their own demands plus the demand of many of the service providers across the country. There are spare capacities available with all the service providers in most of the geographies in the country or there are only some incremental additions of some trunk routes are required to be laid to reach the designated destinations, up to which NOFN is mandated to reach.



Videocon Telecommunications Limited

- Hence, the focus of the Government should be to make this fiber usable. Thus, there is a need to review the entire scheme and take corrective measures at this very stage. The NOFN needs to approach the potential customers like the private telecom operators, ISPs, etc. to get their requirements and then plan the network. The basic need is to align the requirements with business and then build this network so as to optimize its usage. This would require collaboration between the government and private sector enterprises to work out access strategies that make this social business viable for all stakeholders.

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?

Ans : Following are the major constraints for getting ROW permissions :

1. Need to coordinate and handle different types of govt. bodies involved in granting permissions i.e. Municipal corporation/Councils, BRO, Mandi Board, PWD, Forest Deptt, NHAI, Railways etc and all have different processes to be followed.
2. ROW files moves at different levels of officials instead of single window resulting in delay.
3. Marking & verification guidelines differs at each level to process the files which makes the process very slow, hectic and time consuming.
4. Once the files are verified Joint route surveys / BT bill Quotations to be provided, are delayed.
5. In cases where forest deptt is involved for ROW, the files moves to the office of ministry of forests and normally takes 2-3 months to get approval.
6. Recently , the local bodies like MC's (for example in Jalandhar) are imposing heavy BT bills i.e. Rs. 500/- per mtr for trenchless technique, Rs. 10,000/- per pit.

Feasible Solution :

- a) There is an urgent need for a centralized and common procedure for RoW permissions and charges, therefore, it is suggested that the Central Government should issue guidelines on RoW under the Section 7 of the Indian Telegraph Act.
- b) Stipulated time frame with accountability for RoW clearances at reasonable charges (which should not be beyond the cost of maintenance and repair of the road) will enable timely implementation of telecom networks. The Central/ State Government / Local bodies | Ministry of Surface Transport etc. should take necessary steps to provide the necessary directives.
- c) There should be a process of one time charges (OTC) with specified time period as ROW permission
- d) BT bill charges levied by the local bodies should be made uniform.



Videocon Telecommunications Limited

12. 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?

Ans.: Yes, It is strongly recommended to have spare duct policy across all major National Highways and State Highways including all Rollout work done by any Govt/PVT agencies. All the state Govts or the State Highway authority or National Highway Authority may be mandated to lay or construct ducts along the state Highways or on National Highways for such Infrastructure projects without levying any costs to the operators.

All buildings/towers should be provisioned with vertical conduits for carrying out last mile building wiring for FTTH services.

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.

As cable operators are in the unorganized and basically working on low investments with no control on the quality of service. They need to be brought under the Telecomme Licensing regime before providing any further incentives and support to the cable industry for the proliferation of the Broadband. Although the cable operators have got access to unconnected places but since for provisioning the Broadband on the existing analog network may not be possible and the networks are required to be upgraded to the digital network which requires lots of investment. Thus it is a question mark whether in such a poor condition the cable industry can afford to transform into the digital technology unless some of the serious players enter into the market with deep pockets to cater to both the video TV and the Broadband market under the licensed category.

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

Ans:

- Propriety interface between FTTH network equipment i.e. OLT (Optical Line Terminal) and CPE i.e. ONT (Optical Network Terminal) to be made universal as in case of other access technologies.
- Reduction of basic import duty for optical equipment to ZERO %.

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?



Videocon Telecommunications Limited

Ans: Adequate un-licensed band is not available for large scale deployment of Wi-Fi, commensurate with the requirement for Wi-Fi capacity.

Implementation of lawful interception and simple user authentication would need significant investments. Business model for Wi-Fi hotspots is not currently available and ROI is concern area for private operators. Business model where local authorities promotes Hot Spots deployment in lieu of which they offer advertisement rights or promotional schemes to Wi-Fi operators.

Security and interference are the two main issues while using the unlicensed bands for Wi-Fi. Wi-Fi is generally not deployed as a commercial local access network; and is mostly used to redistribute a broadband connection to a wider group of users in homes, offices and hotspots.

The number of Wi-Fi hotspots in non-residential areas like airports, shopping malls are expected to grow rapidly over next few years. With proliferation of non-residential usage of Wi-Fi Hotspots, new business models will emerge.

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

Ans: 2.4/5.8 GHz band is already unlicensed.

Complete bandwidth in the unlicensed 5GHz band should be released as is being done in the other countries. Globally new networks are being planned in the 60Ghz for WFi deployment. This band will deliver high bandwidths in the indoor WFI deployments. In US and Japan already the echo system around this band is being built for 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?

Ans: Requirement of additional spectrum is already well projected in NTP-2012. Coordination to get the IMT bands vacated from other users (mostly govt. agencies) is a must to make available the additional spectrum.

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

Ans: Various spectrum bands identified for IMT services so far are given in table 2.9 of this consultation paper. There is an urgent need of coordinated efforts at Govt. level to vacate maximum spectrum for IMT use in order to promote wireless broadband.

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



Videocon Telecommunications Limited

Ans: Best international practices needs to be adopted to spare maximum spectrum in IMT bands. Wireless broadband will obviously be the major contributor to broadband growth. Govt. may have to compensate different govt. agencies holding spectrum in IMT bands as done in case of Defense.

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

Ans: Spectrum policy of the Govt. is fundamental to the successful rollout of wireless broadband in the country. 700 MHz auction is already delayed. Next one year should be the timeframe for auctioning 700 MHz band.

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.

Ans: Consumer awareness and general education/ familiarity with the use of PCs, computer penetration, rural kiosks and other public access points, availability of vernacular contents, more applications encouraging use of BB, training of people in ICT applications and capacity building, business models and rural entrepreneurship, availability of bandwidth in all villages etc. are the issues on demand side which are adequately covered in the paper.

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

Ans: No specific comments at this stage.