Response to National Broadband Plan

5.1: What should be done to increase broadband demand?

Ans:

The overall demand of broadband will be mainly driven by the affordability factor, which means how affordable the services are to consumers. In case of mobility, demand increased when tariffs were brought down to the affordability level, end devices were economical and applications with local languages were made available. People saw enhancement in their business at mass level with security of connectivity and it was available for all the segments all the time.

The broadband experience will enable consumer to enjoy high download speeds and better service quality as compared to the existing services. The advantage of time to data will be a true broadband experience. Current broadband offerings, either wireless or wireline do not offer truly fast speed broadband where consumers can't enjoy even quality video streaming.

5.2: What, according to you, will improve the perceived utility of broadband among the masses?

Ans:

The Customer experience must be improved, which means more contents of local interest are to be developed and applications on faster access speeds with a better QoS. Local & economical end user devices are to be developed and energy efficient devices should be promoted. Current Broadband offers do not allow consumers to truly experience the advantages of fast speed Broadband as compared to other countries.

5.3: What measures should be taken to enhance the availability of useful applications for broadband?

Ans:

One of the very basic necessities today is to bring all the government departments and schemes have to be brought on a single IT platform. Today the biggest challenge faced by the government is that the schemes and initiatives taken by the government are not reaching the right people. With increased broadband penetration definitely there will be enhance the level of awareness amongst masses. It should be mandatory for all the government departments to create an electronic interface of the social schemes/projects (like court-cases settlement, records on-site, land records, medical services, educational services, etc.,) they are carrying out with the help of a centralized body like NIC. These centralized sources of information will also help the overall acceptance and growth of broadband in the country. Active participate from the private sector will be automatically seen with the rise of user base.

5.4: How can broadband be made more consumer friendly especially to those having limited knowledge of English and computer?

Ans:

Looking the diversity in India the choice of language is very important for any application. It will be more meaningful to create the applications in regional languages also which will help in faster acceptance of information. Once we reach a certain degree of maturity in terms of education level and overall growth then we can see more applications in English or 2-3 main languages.

5.5: Do you agree with projected broadband growth pattern and futuristic bandwidth requirements?

Ans:

Sterlite believes the growth pattern will be even steeper than current projections. While 8-10 Mbps seems to be sufficient for 2010 requirements by 2014 that those requirements may exceed 30 Mbps per household, and accordingly bring a higher load on the backbone networks

5.6: Do you agree that existing telecom infrastructure is inadequate to support broadband demand? If so what actions has to be taken to create an infrastructure capable to support futuristic broadband?

Ans:

Yes, Sterlite believes that the current backbone and access network are inadequate and need major upgrades.

Sterlite believes that fiber-rich networks are the true answer to meet broadband demand of today and the future. It is well-known that optical fibers offer the fastest speeds with best QoS criteria. Fiber-rich access networks will allow consumers to use today's and tomorrow's high-bandwidth applications, such as video streaming, video-telephony …etc.

In India due to difficulties in laying the cable, higher ROW charges, uncertain and long waiting time for ROW, no control on private ROW, the operators have restricted the usage of fiber network to the minimum and they use backhauling by microwaves. Backhauling using the wireless media is a short term solution in order to make the network live, but when we talk about quality of services it cannot be attained as compared to a bandwidth rich optical network.

Even though there are congestions the spectrum charges are same all across the country while ROW charges vary from Rs. Nil to Rs. 7000 per meter. This is one of the major concerns to provide reliable and higher BW services in this country. ROW's should be streamlined for faster availability and at no cost. There is no guideline on no. of fibers to be used while deploying and again and again digging takes place, causing concern with the local authority. Hence a guideline for minimum fiber count laying is required. The guideline will help in making the network scalable and hence future proof.

Chapter 3: National Broadband Network

5.7: What network topology do you perceive to support high speed broadband using evolving wireless technologies?

Ans:

National networks are mostly in ring with cable capacities up to 96F. Hence, upto towers, fiber should be connected in ring and the major nodes should be connected on ASON (Automatic Switched Optical Network) with multi-path protection. This will provide the reliable service to the end-customer which is must in case of Broadband services.

5.8: What actions are required to ensure optimal utilization of existing copper network used to provide wireline telephone connections?

Ans:

Sterlite does not believe that today's copper networks will be able to meet future's broadband requirements in India, in spite of the upgrades. It is a world-wide trend that operators invest in to fiber-access networks. Even those who have upgraded their copper networks with large amounts of investments to A-DSL or V-DSL type of copper access technologies, such as Deutsche Telekom, have announced plans to replace the last mile copper access with fiber access. The same trend is expectedly to be seen in India.

Sterlite believes that there will be limited investment in India to copper networks. All green field projects will have fibre deployment and gradually the existing copper networks will be replaced by fiber networks. Overall approach for all the telcos will be towards deployment of more fibre based network and even fibre reaching to end customer devices.

5.9: Do you see prominent role for fibre based technologies in access network in providing high speed broadband in next 5 years? What should be done to encourage such optical fibre to facilitate high speed broadband penetration?

Ans:

Sterlite truly believes that fiber based technologies offer the best long-term solution for access networks offering the highest connection speeds with the highest reliability and future-proof.

To encourage fiber based access networks firstly any new investment in copper networks shall be discouraged. Measures shall be taken to encourage replacement of current copper networks with fiber.

Operators shall be encouraged to look at different investment models such as co-sharing and co-investments to utilize the current duct spaces which are occupied by old copper networks. Those operators who are willing to invest in to fiber-based access networks could be offered priority on available Right of Ways.

One of the major issues for Operators is indoor cabling of newly constructed residential buildings. As per current data there are 3 to 4 million new households being constructed in India. Those households are all cabled with traditional copper indoor cables. Any service provider who plans a fiber based access network must do an over-lay of fiber cabling causing higher investments. Sterite suggests that there shall a new law enforcing fiber cabling of all newly built households instead of copper cabling. Examples can be seen in the world such as in France. Such a law would be a great enabler to encourage and accelerate investments for fiber-based access networks.

5.10: What changes do you perceive in existing licensing and regulatory framework to encourage Cable TV operators to upgrade their networks to provide broadband?

5.11: Is non-availability of optical fibre from districts/cities to villages one of the bottlenecks for effective backhaul connectivity and impacts roll out of broadband services in rural areas?

Ans:

Yes. It is very important for the nation to build a robust network nationwide. Today we see the connectivity on optical fibre cable is limited to districts or blocks. Hence the connectivity is very low in the rural areas and even if we have connectivity it is majorly through wireless backhaul. If we look at the Indian demography we have approx. 70% of the population lives in villages and hence we cannot ignore this part of the country when we talk about overall growth of the country. Creating a nationwide bandwidth grid will be of prime importance to the country in terms of the long term growth and sustainability of the infrastructure which is being planned. Today when talk about rural connectivity it is only mobile connectivity with no quality of services due to lack of proper backhaul. We should deploy fibre based network till the rural areas (panchayats) so that this base network can be used for broadband penetration and also work as a backhaul for GSM/WiMaX services. Looking at the bandwidth hungry applications and the number of users it becomes very important to create a robust optical fibre based network which is capable to cater the long term bandwidth requirement of the country. With the increase of rural wireless and wired connectivity there will be huge demand of bandwidth which can only be met by a robust optical fibre network. When we talk about applications and payments happening over internet then we need a more reliable and future proof network in terms of scalability from the user perspective.

5.12: If so, is there a need to create national optical fibre network extending upto villages?

Ans:

Yes.

5.13: In order to create National optical fibre core network extending upto villages, do you think a specialized agency can leverage on various government schemes as discussed in para B?

Ans:

5.14: Among the various options discussed in Para 3.35 to 3.37, what framework do you suggest for National Fibre Agency for creating optical fibre network extending upto village level and why?

Ans:

Segment the Broadband services geographically based on the BW requirements, education level, income, availability of existing fiber in vicinity, business, security using PPP model along with existing available resources and utilization of USO fund will make viable to create the national networks.

5.15: What precautions should be taken while planning and executing such optical fibre network extending upto villages so that such networks can be used as national resource in future? What is suitable time frame to rollout such project?

Ans:

The planning of the rural broadband network should be based on scalability of the network and the planning should be done from a long term perspective. Government will be spending huge amount of money for connecting the villages hence the planning shouid be done in a way that the network should be able to cater to the future high bandwidth requirements. High fibre count cabled should be used for connecting the villages so that if required in future the same network can be used by other governmental agencies like schools, hospitals etc. The segmentation of geographies should be done to avoid generalization.

Timeframe for roll-out would be 2 years for geographies where existing n/w is there within 10 Kms coverage. Timeframe for upto 50 Kms would be 3 years from existing and the balance 5 years.

Chapter 4: Regulatory Challenges and Future Approach

5.16: Is there a need to define fixed and mobile broadband separately? If yes, what should be important considerations for finalizing new definitions?

Ans:

Since technologies keep on developing for the BW enhancement, it is better left to the market sources. Only QoS need to be defined.

5.17: Is present broadband definition too conservative to support bandwidth intensive applications? If so, what should be the minimum speed of broadband connection?

Ans:

Yes, it is conservative.

Telemedicine, tele-education should be Government driven programs for masses. Hence the minimum b/w should atleast be 8-10 Mbps. However this should be reviewed every 2 years atleast depending on the technological developments, user behavior and cost of service.

5.18: What specific steps do you feel will ease grant of speedy ROW permission and ensure availability of ROW at affordable cost?

Ans:

ROW plays a very important role both in terms of project timeline and the cost of the project. Since making broadband available for the rural India will be a project with very high importance to the nation hence the government should look into waiving off the ROW charges (except restoration). Also central agencies like Railways, BRO, NHAI, National forest etc can be issued with guidelines on ROW for time and cost. Railways, PGCIL Electric poles should be leveraged for faster coverage reach. PGCIL, NTPC etc can influence state electricity boards to use their poles. This way deployment will be faster and much more economical. The central agencies should also work on the standardization of ROW process in terms of the maximum timeline to be fixed for attaining ROW from different agencies. ROW's should be streamlined (like spectrum charges) for faster availability and at no cost. Guidelines for minimum no. of fiber count laying is required to avoid repeated digging thereby reducing ROW charges and overall cost of the project.

5.19: Does the broadband sector lack competition? If so, how can competition be enhanced in broadband sector?

5.20: Do you think high broadband usage charge is hindrance in growth of broadband? If yes, what steps do you suggest to make it more affordable?

Ans:

Yes. The evolution will come when the charges are within the affordability level.

Steps for suggestions:

1. Back ground – success of present mobile in India and broadband in some countries.
2. Cost parameters (Content, Passive Network, Active Network, IPLC, End user device, Energy savings etc analysis and reduction/optimisation points on both Capex and Opex.
3. QoS parameters tracking and control – Video streaming etc services need better availability of network as well as larger capacities (no choking). KPIs and SLAs to be defined for back haul to encourage better network.
4. Customer perception – what broad band can offer, offering in other countries, segmentation of services to match their needs, benefits reaped (eg, security, education, health, entertainments, business enhancement etc with clarity – detailed survey required).
5. Operators' benefits – mobile saturating, think out of box on how to market new services, Govt initiatives of helping in first covering community services to convince customers of benefits, policy on sharing available assets, lower cost of network, lower & faster ROW availability etc.

5.21: Do you think simple and flat monthly broadband tariff plans will enhance broadband acceptability and usage?

Ans:

It should be market driven based on the demand supply situation.

5.22: Should broadband tariff be regulated in view of low competition in this sector as present?

5.23: What should be the basis for calculation of tariff for broadband, if it is to be regulated?

5.24: How can utilization of International Internet bandwidth be made more efficient in present situation?

5.25 How can use of domestic and international internet bandwidth be segregated? Will it have direct impact on broadband affordability? If so, quantify the likely impact.

5.26 What steps should be taken to bring down the cost of international internet bandwidth in India?

5.27 How can competition be enhanced in the International bandwidth sector?

5.28: QoS of broadband, availability of bandwidth, adherence to given contention ratio, affordability, availability and spread are some intricately linked parameters. In your opinion what should be done to ensure good quality broadband to subscribers?

Ans:

For providing good quality broadband, the fiber-rich networks needs to be created at optimum cost by leveraging existing resources and laying higher fiber count thus reducing ROW charges and reducing time to market.

5.29: Do you think that bad quality of broadband connection is impacting the performance of bandwidth hungry applications and hence crippling the broadband growth? If so, please suggest remedial actions.

Ans:

Bad quality is because of non-availability of standard fiber-rich networks. Poor quality copper networks and limited wireless bandwidth is available. The solution is to create fiber-rich networks both on back-bone and access for more bandwidth and better quality of service for the end consumer.

5.30: Is there a need to define new/redefine existing quality of service parameters considering future bandwidth hungry applications, time sensitivity of applications and user expectation? What should be such parameters including their suggestive value and should such parameters be mandated?

Ans:

Yes. Consolidation of operation with defined QoS parameters is to be worked out to reduce opex drastically. Today no parameter is assigned to control quality. The back hauling is done on MW with limited BWs. For BB the QoS cannot be ensured as bandwidth requirements will be higher. Presently Spectrum charges for back hauling on MW are same all across while in case of Fiber the ROW charges vary a lot. This discourages Fiber connectivity. This point of spectrum charges as per segmentation (ROW variation – normally higher in bigger cities where demand is also high) on this ground to discourage lower QoS on MW for BB services and fiber connectivity will be done. The parameters to be tracked are

- Latency : 40 ms within country
- No. of cuts: 3 per 1000 Km per month
- Bulk failure due to fiber cuts: Maximum 1000 customers in each case
- End-Of-Life for cable replacement: 0.27 dB/Km @ 1550 nm in link or 2 cuts in 1 Km
- Availability of n/w: Backbone 99.999 %, Access to customer 99.99% on monthly basis
- Repeat failures: 2 per month
- Time to restore: Ring – 60 minutes, ASON – 5 minutes
- Ring size: Backbone – 1000 Kms, Access – 30 Kms

5.31: What measures do you propose to make Customer Premises Equipment affordable for common masses? Elaborate your reply giving various options.

Ans:

Local R&D should be promoted to design and produce the low cost devices as per Indian requirements with various segmentation of the products similar to mobile sets.

5.32 What measures are required to encourage development of content in Indian vernacular languages?

5.33: Do you perceive need for any regulatory or licensing change to boost broadband penetration?

Ans:

Yes. The need is for regulation of ROW across the country, Public utility services, USO fund.

5.34 Are there any specific competition and market related issues that are hindering growth of broadband?

5.35 What other fiscal/non-fiscal measures should be considered to boost broadband penetration?