

CHAPTER 5: Summary of Issues for Consultation

CHAPTER 2: Broadband – Demand & Supply

5.1 What should be done to increase broadband demand?

(Reference Para 2.23)

- (a) Enforce multi lingual video based User Interface (UI) and content positioning on all e-governance applications web sites.>
- (b) Initiate rapid outsourcing of e-governance applications with governments only taking the ownership of relevance of essential data conforming to the policies.
- (c) Encourage English and vernacular virtual school, college and university class rooms being made accessible at homes on PC over TV through STB and RF remote as a phone and key board for those who work during day to earn bread for the family and could study from 8 pm to 11 pm to get the education degrees and enhance the Gross Enrollment Ratio. This must be organized by the Min of HRD even now wherever true Broadband access is available. This must go in parallel with physical build up of education infrastructure.
- (d) Encourage availability of English and vernacular multi specialty hospitals tele health care services of diagnostics, consultation and prescription to homes on PC over TV through STB and RF remote as a phone and key board. Min of Health should take the ownership of introducing this now wherever true Broadband access is available. This must go in parallel with physical build up of health care infrastructure.
- (e) Reduce the price of basic lap tops with enhanced battery life.
- (f) Issue a lap top at the scale of one per BPL family.
- (g) Provide free training on use of lap top for mail and Internet to one member of each BPL family by train the trainer method.

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

(Reference Para 2.23)

- (a) When they can sell their produce of crop, vegetables, milk etc directly to the whole sellers/retailers without the agents.
- (b) Their payments start coming automatically to the banks and they can do e- funds transfer through mobiles.
- (c) When they do not have to bribe the Police, Panchayat, SEB, Jal Board, patwari, tehsildars, rehri and patri license issuing authorities, ie Broadband paves the way for good e-governance.
- (d) The rural people can simply log in their complaints on vernacular e-governance web sites against money extortion by corrupt politicians and officials. Once the complaint is logged on the web sites, it would never go unattended.

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

(Reference Para 2.23)

Rapidly outsource all the applications under e-governance, no state control except to enunciate policy just like most embassies have outsourced visas except at the last and final stage.

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

(Reference Para 2.23)

- (a) Multi lingual UI and applications to be on open access platforms. DIT to have the implementation responsibility.
- (b) Apps providers must be welcomed with national e-governance apps store to be made open to all.

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

(Reference Para 2.35)

- (a) Futuristic BW requirements must be minimum 4 mbps to cater for tele – education and tele – health care.
- (b) The BW requirements would reach 100 mbps in metros and top 40 cities by 2015, 70 % geography by 2025 and 100 % geography by 2030.

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?

(Reference Para 2.35)

- (a) Follow the policy of separation of access network infrastructure from core network infrastructure.
- (b) Treat Broadband as an essential utility like power, water, sewerage and gas. Thus, encourage RWAs, Panchayats, real estate companies, all IP1 service providers, discoms etc to build, own and operate open access FTTP network which allows interconnection and access seeking UASPs, CMSPs and DTH service providers to have the POIs on non discriminatory mode and on revenue share basis.
- (c) There is no monopoly of any service provider unlike CATV where one is stuck with only one LCO as he uses his muscles not to allow others.

CHAPTER 3: National Broadband Network

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

(Reference Para 3.22)

- (a) No wireless alone can provide high speed Broadband access to a vast country like India. It is ok to start with and may be for first five to seven years, thus HSPA+, WiMAX and LTE would be good but need traffic off loads and great back haul of fiber.

(b) After about three years, femto cells can relieve the spectrum crunch to a large extent but these would also need fiber back haul. Thus, open access FTTP operators come in handy allowing customer premise femto cell back haul at a revenue share.

(c) The key is to enable the huge wireless traffic off loads through open access FTTP network. Thus, while UASPs and CMSPs continue their roll out for 2G, 2.5G, 3G, 3.5G, 4G services etc, high speed wireless Broadband traffic must be given a provision for localized off load arrangement. This is where open access FTTP providers come in handy. In their modified IP 1 license, they are allowed to become the wireless traffic off load partners/franchisees of UASPs and CMSPs at a revenue share.

(d) Fiber to each village is a must asap.

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

(Reference Para 3.22)

(a) Existing copper of BSNL is not fit to carry High Speed Internet (HSI) traffic except around 30 % or so.

(b) BSNL and MTNL must be privatized only then the copper can be fruitfully utilized by them only. Franchise arrangements would never work unless privatized.

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?

(Reference Para 3.22)

(a) Open access FTTP network must be allowed to be built by RWAs, Panchayats, real estate companies, IP 1 service providers, discoms etc as part of IP 1 license.

(b) ROW comes as defacto to them. No ROW charges are deposited with any one. These open access FTTP network owners re-instate the dug outs against a BG.

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?

(Reference Para 3.22)

(a) Urgent need to bring the MSOs/LCOs under license regime.

(b) The telcos can then get encouraged to sign them up as franchisees.

(c) Should there be any dispute, it is solved through TRAI/TDSAT route.

(d) The defaulting MSOs/LCOs stand to lose their license as do telcos currently as per their license terms.

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?

(Reference Para 3.39)

(a) The fiberization of at least 70 % villages must be done by 2020.

(b) Around 30 % villages may be difficult to fiberize or would take unduly long time. Thus, the

NBP should envisage to lease satellite capacity on O3b MEO satellites system from 2012 for a period of five years. This satellite capacity of IP trunking should be sub leased to operators who would interconnect their rural cell sites and provide high speed internet services.

(c) From 2020 onwards, around 90 % villages would be fiberized and thus around 10 % villages can remain on own high capacity satellite of ISRO.

5.12 If so, is there a need to create national optical fibre network extending upto villages? (Reference Para 3.39)

(a) There is an urgent need to create National Broadband Corporation of India (NBCI) on similar lines of DMRC.

(b) NBCI would take charge of entire ultra high capacity national and state back bone fiber networks.

(c) NBCI is a public private partnership autonomous corporation which maps all available fiber back bone on GIS, does the gap analysis and builds the national back bone as a national resource which is leased by the service providers on non discriminatory basis.

(d) NBCI would also lay down guide lines, coordinate and resolve any dispute arising out of UASPs, CMSPs and DTH Operators seeking open access and POIs from open access FTTP network operators ie IP 1 licensees.

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?

(Reference Para 3.39)

(a) There is no point in politicizing the most important ICT infrastructure body like NBCI which works under the PMO, takes its targets from the Plg Commission and has all the powers of ROW as defacto.

(b) Other government initiatives like NREGS etc have different aims and objectives which must not be mixed with a serious commitment of NBCI undertaking a time bound highest priority job to provide 100 mbps Ultra Fast Broadband (UFB) to 100 % citizens by 2030.

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?

(Reference Para 3.39)

(a) NBCI is like DMRC or NBN Co of Aus as both India and Aus are big in geography and should have similar roll out strategies.

(b) No private body can do this as the task is gigantic, investments are huge, ROI is slow, requires BW to be made available to service providers on non discriminatory basis.

(c) This is a serious national level commitment as it touches upon every sector of the economy. For NBCI to have the mandate, this must function under the office of the PM.

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?

(Reference Para 3.39)

- (a) The greatest difficulty experienced in the roll out of telecom infrastructure is associated with ROW. Rampant corruption for ROW in all municipalities, Police forces, DDA, PWDs, NHAI, SHAI etc has discouraged the telcos to roll out the fiber network.
- (b) Revolutionary changes must be made in this dreadful clearance of ROW. NBCI and all access providers must be given ROW in an automatic mode following GIS maps and the process should be outsourced just like all good countries have done for visa clearance. It takes not more than 72 hours to get visa to US and similar process must be in place for ROW.
- (c) NBCI should be mandated to provide unlimited capacity on fiber for 50 % geography by 2015, 75 % geography by 2020 and 100 % geography by 2025.
- (d) Open access FTTP should also be provided through multiple RWAs, Panchayats, real estate companies and IP 1 licensees in similar time plan as given in (c) above.

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?

(Reference Para 4.18)

The mobile Broadband essentially is meant more for business applications than social and entertainment. Thus, the speed, availability and QoS are more stringent but due to spectrum dependencies, such definitions might be revised from time to time. As an example, London did a customer satisfaction (CSAT) survey for HSPA in 2008. Only one out of 10 subs was satisfied with the throughput. Thus, specs for spectrum dependent wireless services must be reviewed from time to time and not kept fixed for long.

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

(Reference Para 4.18)

These are not cast in stone and can be reviewed from time to time when usage starts increasing. However, minimum of 4 mbps must be provided in order to qualify for Broadband.

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

(Reference Para 4.30)

- (a) There is no question of any cost associated with ROW as the beneficiary does the fool proof re-instatement against a BG. The re-instatement is certified by non-governmental bodies like IITs, NITs, institution of engineers, IETE etc. No municipality in the country is equipped to use the ROW charges and get the re-instatement done as has been shown by the first 51 mm rain in Delhi on 12 Jul 2010 and almost all re-instatements have caved in throwing the capital life into disarray. Thus, professional re-instatement should be done by the beneficiaries of ROW only under the strict certification of the institutions as described above.
- (b) ROW must be only on GIS maps, automated like the visa clearance process available in 72

hours from the time application is made on the web.

(c) ROW is the most dreadful impediment. NBSI and all access providers get ROW automatically even if a legislation needs to be passed then so be it. A state Government did not give ROW to a private BSO when they launched services in 2002-2003 whereas others were given ROW. The BSO refused to succumb to illegitimate demands from the State. The player launched their BSOs services on back haul of skimpy MW whereas others launched their wireless services on luxurious fiber back haul. One of the most respected industrial houses in the world for the first time faced the shameful act of corruption in the country but did not succumb.

(d) TRAI would really do justice to the spread of true Broadband services just like what is happening in the case of 40 developed countries if and only if they can sort out the ROW procedure on similar lines of visa clearance.

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

(Reference Para 4.42)

(a) Make open access FTTP networks where interconnection and access is provided to all UASPs, CMSPs and DTH operators on non discriminatory basis.

(b) This helps subs to pick and choose their service providers rather than get stuck with only one after paying through their nose the hefty sum for CPEs for which the subs stay at ransom throughout the subscription period.

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?

(Reference Para 4.42)

(a) The moment open access is made and the subscriber is free to pick and choose the service provider may be for a minimum period of a quarter, the charges would all get stabilized.

(b) This is our experience with mob. If a sub does not like the service provider, he/she quickly changes it. Similar open access for true Broadband must be available then not very stringent regulations are required for QoS, tariffs etc.

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

(Reference Para 4.42)

Let this be decided by the buyers when they are able to pick and choose the service providers due to open access networks.

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

(Reference Para 4.42)

Not needed. What is needed is open access FTTP networks.

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

(Reference Para 4.42)

Lets do what is needed to be done ie allow equal access to all service providers which gives freedom to sub to dump the bad service provider and replace with a good one.

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

(Reference Para 4.42)

Just get abundance of international internet BW by NBCI joining a consortium and investing money to get rights to ultra high capacity under sea cables.

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.

(Reference Para 4.42)

Encourage giants like Google, Yahoo, banks etc to set up their huge data centers in India so that most of the time, 70 %, only domestic BW is utilized.

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

(Reference Para 4.48)

Make it available in abundance by investing in under sea cables.

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

(Reference Para 4.48)

Make the international internet BW providers also on open access by facilitating the service providers to pick and choose them.

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?

(Reference Para 4.59)

First of all lets put in place the NBCI and open access providers as IP 1 licensees, every thing would follow automatically with minimum regulations.

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.

(Reference Para 4.59)

As subscriber is not in a position to change his service provider thus all problems start. The moment we have open access, these would be solved as the subscriber is free to change the service provider after about a quarter.

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?

(Reference Para 4.59)

The moment a subscriber has the ability to pick and choose the service provider, all service providers would improve.

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

(Reference Para 4.64)

If we can put in place a system wherein the subscriber is in a position to change the service provider, even the CPEs are also taken care of.

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

(Reference Para 4.68)

Make available the data formats for multiple e-governance applications and then by rapid outsourcing to multiple apps developers and providers, the roll out of e-governance services would be in an auto pilot mode and lead to India being the least corrupt country one day.

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

(Reference Para 4.71)

Make IP 1 open access license, no license fee and no ROW charges except re-instatement against a BG with a fool proof and speedy validation procedure through professional bodies and not municipalities.

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

(Reference Para 4.71)

Monopoly of access networks only with UASPs or CMSPs must be broken. IP 1 licensees for open access operators must be liberally encouraged then India would see a similar rapid but organized mushrooming of FTTP open access networks just like CATV has multiplied to 130 million homes in about 20 years.

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

(Reference Para 4.71)

Make Right To Broadband (RTB) as a fundamental right to be embodied in the constitution so that Govt, NBCI and open access providers can continue unhindered.

Summary of Recommendations of KTMT on TRAI Consultation Paper on National Broadband Plan (NBP)

Unfortunately, India has missed all the important buses of basic infrastructure so far in our 63 years of independence with regard to roads, ports, airports, rail, metro rail, power, education, health and governance. Under no circumstances, we can afford to miss the most important bus of the century ie true broadband for all.

The summary of the key recommendations appearing in the above analysis at different points is given below :-

- (a) Make IP 1 as an open access license.
- (b) No license fee for IP 1 open access license.
- (c) ROW as de-facto with IP 1 open access license.
- (d) No ROW charges.
- (e) Reinstatement by the licensee against a BG duly certified only by professional bodies like Institution of Engineers, IITs, IETE etc.
- (f) Set up an independent National Broadband Corporation of India (NBCI) with a seed capital only from the Min of Fin, functioning under the PMO, take targets from the Plg Commission and run it as a board managed public private partnership company generating funds to keep it going up to 2030 at least.
- (g) Award IP 1 open access license to RWAs, Panchayats and real estate companies apart from NBCI/UASPs/CMSPs/BSOs.
- (h) NBCI to coordinate all IP 1 licensees.
- (i) Open access providers to be wireless traffic off loading partners of USAPs/CMSPs/3G/BWA licensees.
- (j) Bring LCOs/MSOs under the license regime.
- (k) Make Right To Broadband (RTB) as a fundamental and legal right and embody it in the constitution so that it is binding on every government of the day.
- (l) To enable MSOs/LCOs high capacity BW access networks and telcos/CMSPs very powerful core and edge as also back end set up of OSS/BSS/CRM/IN/Real Time Charging/Billing/Service Delivery Platform/Contact Center to interconnect as a B2B2C business and technical models, lay down a cap on revenue split between the two.

Example could be the share of MSOs/LCOs revenue as follows :-

- (i) HFC based HPNA - 30 %
- (ii) DOCSIS 3.0 - 31 %
- (iii) xDSL- 32 %

(iV) FTTP - 33 %

(m) Plan for leasing IP trunking services on O3b MEO system for 30 % of villages from 2012 to 2017 to sub lease the same to operators who would interconnect their cell sites and provide high speed internet through BWA or LTE.

(n) Plan to deploy femto cells both for private and public radio access. Femto cells are expected to double the number of macro cells by 2016.

(o) Considering that we may have around 1 b femto cells by 2020, India should encourage the design, development and production of femto cells indigenously to prevent the out flow of royalty. The country has missed the development of macro and pico cells but lets not miss out the opportunity of femto cells.