RESPONSE TO TRAI CONSULTATION PAPER ON "ISSUES RELATED TO TELECOMMUNICATION INFRASTRUCTURE POLICY"

Overview of Telecom Infrastructure

6.1 Do you agree with the classification of infrastructure elements described in this chapter? Please indicate additions/modifications, if any, particularly where you feel that policy interventions are required.

Yes, but we suggest that all IP1 should be allowed to install & operate all kind of active telecom & IT equipment. As regard the transmission of freq, they should use only of any one or more mobile operators (who have the freq allocated by the licensor)

6.2 What measures can be taken to encourage more ILDOs and ISPs to set up cable landing stations?
No Comments

Internet Exchange Point

6.3 Do you perceive the need for effective Internet exchange point(s) in the country to efficiently route domestic IP traffic?
Yes, it should be made mandatory to have Internet Exchanges in each state capital. This will mean effective utilization of resources & simple routing. This will also be very helpful to small data centers & ISP service providers. This will also help many entrepreneurs to start new business. For country like ours, where each state is equal to countries of Europe, it is must.

6.4 If your answer to issue in 6.3 is in affirmative, please comment on the licensing framework of the entities for setting up Internet

NIXI under which the Internet exchanges are in operation in India, should be asked to open exchanges in each state capital. Also it should be made mandatory for all service providers of that state to interconnect with NIXI nodes to route the domestic traffic through it. There should be heavy penalties on those service providers, who do not connect or delay or interconnect with insufficient bandwidth.

Exchange Points in India.

6.5 Will it be desirable to permit those Unified licencees to setup IP exchange points in the country who have no vested interest in routing of the IP traffic?

No. There should not be any duplication & only NIXI should be supported. No other organization should be allowed to set up any IP Exchange.

Mobile Virtual Network Operator

6.6 Please give your comments on the changes proposed in para 3.5 of Section C of Chapter 3.

All Agreed

In- Building Solutions

6.7 What methods would you propose for reduction of the number of towers?

It is proposed to reserve 3MHz spectrum in 900 /1800 / CDMA bands for In-building applications to take out the load on outdoor BTSs capacity in urban and dense urban areas. This would reduce number of macro BTSs to large extent.

"In any case the private buildings are private & Government has not sold the radio waves in side those buildings to the mobile operators."

So this 3 Mhz spectrum should be for exclusive use in buildings & campuses etc etc.

This can be on the same lines as "LOW POWER GSM" in UK (3.3 Mhz) & Netherlands (5Mhz)

Encourage street furniture such as electric poles, walls of buildings for transmitting low power at low height. This would provide a good street level coverage without discontinuities.

The above will help in reducing the no of towers in city like Delhi by more than half.

6.8 In what ways do you think that IBS can be encouraged for better in building coverage, better QoS and reduction in level of radiated power from Macro cell sites?

It is a well-known fact that over 70 to 80% of the calls are made when a person is inside the building.

With over 20 million subscribers getting added every month, mainly from urban areas, the quality of service is going to get deteriorated and need for spectrum will only increase.

Subscribers have great expectations regarding third-generation services. With the introduction of 3G services in the country, it needs to be ensured that the new services are made available everywhere, where 2G services are already covered.

Notwithstanding, many 3G networks deployed to date have been designed primarily to provide good coverage in outdoor environments—not inside buildings

To encourage IBS for better in-building coverage, better QoS and reduction in level of radiated power from Macro cell sites, we propose that a 3 MHz spectrum in GSM/CDMA bands may be reserved for IBS.

Other Service Providers (OSPs), who will be given the spectrum for IBS, should be given the responsibility of IBS coverage inside the building/facility. Once the infrastructure is ready, they can offer their services to MNOs on infrastructure sharing basis.

OSPs should be given licenses for IBS for a sum of Rs. 20 CR (Nationwide) & it should include all services (NLD, ILD, ISP, wire line, IP telephony & 3 MHZ of non exclusive spectrum on the same technical terms as in UK) All "OSP" should pay the licenses fees & they should not be charged any spectrum usage charge, as this is shared spectrum & that too for low power.

Government should also consider giving incentives linked with number of operators sharing the IBS in a particular facility.

Local administration should make it mandatory while approving/clearing the construction of new facilities, such as multiplexes, malls, hotels, and recreational facilities etc. to facilitate IBS inside the facility and take an undertaking from identified OSPs to ensure execution of IBS in such facilities

6.9 How can sharing of IBS among service providers be encouraged? Does TRAI need to issue any guidelines in this regard?

As stated in 6.8 above, the government should encourage Other Service Providers (OSPs) to own or operate a transmission facility, to offer telecommunication services to the public in identified facilities. They should be given licenses for IBS in lesser license fees and other flexible terms.

Government should also consider incentives linked with number of operators sharing the IBS in a particular facility. (reduction in licenses fees) for example :_

		License Fees
A	One operator	100%
B	Two operators	80%
C	Three Operators	60%
D	Four Operators or more	40%

Local administration should make it mandatory while approving/clearing the construction of new facilities, such as multiplexes, malls, hotels, and recreational facilities etc. to facilitate IBS inside the facility and take an undertaking from identified OSPs to ensure execution of IBS in such facilities

The OSPs will be required to cover enterprises, malls, airports, hotspots etc. Whenever an existing subscriber roams into the network of OSP, he would be using the infrastructure (radio resource) of OSP thereby decongesting the MNO's macro-network.

The arrangement between MNOs and OSPs should also be regulated (as any other interconnect). It Should be based on the principles of cost and TRAI/DOT will have to make this mandatory.

To offer a level playing field, the license condition should stipulate that the OSP licensee shall not refuse connectivity to any licensed MNO. TRAI may issue guide lines with respect to rent/ revenue share, QOS etc.

Since such shared IBS systems will be required in large numbers, such OSPs / MNOs may be mandated to use "Indian Products" only.

This would also encourage indigenous manufacturing in the country.

Distributed Antennae Systems

6.10 Do you agree that innovative technologies such as 'Distributed Antenna System' (DAS) can be effectively utilised to reduce number of towers and migrate towards tower-less cities?

Yes, the innovative technologies such as "Distributed Antenna System (DAS)" should be introduced in the urban and semi urban areas. There is a need to have a cost effective, time efficient, environment sensitive solution to be shared by multiple operators.

DAS or use of street furniture for providing cellular services can be effective way for reducing number of towers, but may not eliminate the use of towers. There are issues restricting the use of this technology, specifically in India.

One such solution could be:

a) Locating antennas near the users, i.e. on the electricity poles/ bus stops/ other govt infrastructures in/ nearby the streets

b) Low power transmission (Radiation) from the antennas, since located near the users.

c) Feed RF signal over optical fibre in the form of optical signal from a centrally located BTS and reconvert back into RF at the antenna site for radiation.

d) The same infrastructure can be used for wireless broad band services.

The advantage of planning a network with distributed antenna system is:

i.   Possibility of allocation of centralized radio resources dynamically depending upon the availability of spectrum and traffic.

ii. Easy network extension- coverage of hot spots and holes

iii. Good system performance. Since the antennae will be installed at a lower height, with low power radiation, the interference will be very low.

iv. Easy future up-gradation and introduction of new technologies.

v.   The network can be shared by multiple operators for different wireless services.

vi. It is expected that the capital and operating cost will be lower by about 15-40%.

vii. Since BTS and handsets will be radiating low power of less than 1 watt, the apprehension of health hazard will not be there to the users.

6.11 What are the impediment in adoption of new technologies such as DAS and how can these be removed?

The adoption of DAS type of technology requires a disciplined coordination between all private and public departments while digging, repairing, laying pipes, cables and widening roads.

Apart from above, there are several licensed service providers and each can not be permitted to lay a separate cable and install separate active & passive infrastructure on the street furniture, else it will be much worse than the towers. This can be overcome by mandating shared infrastructure.

Supply of power to each antenna system is another major issue, for which copper pair will have to be laid along with OFC which may need higher maintenance efforts.

The VIP / Lutyens areas are the best where DAS type of technology could be used

Standardization of Tower Design

6.12 Would you agree that the design of towers can and should be standardised?

Yes, it should be done immediately.

6.13 If yes, how many different types of towers need to be standardised?

Not more than 6 types of towers for Urban & Semi Urban areas. (Three GBT & Three RTT)

6.14 What are the important specifications that need to be included in these standards?

Important specifications include the height of the tower and maximum of two sets of antennas for each Freq band. Which means the following:-

I   900 Mhz

Ii   1800 Mhz

Iii   UMTS

Iv   800 Mhz CDMA

6.15 Which is the best Agency to standardise the tower design?

No Comments

Reducing Visual Impact of Towers

6.16 What is the likely cost of camouflaging the towers?
It depends from site to site & can not fixed. It may be from 10,000 to 50,000 Rs per site.

6.17 Can camouflaging be made mandatory? If so, can this be made part of the design standards of the towers?
Yes, it should be made mandatory. It can not be made part of the tower design, because the camouflaging will depend on each site.

Clearances From Local Authorities

6.18 Do you consider that the existing framework of different civic authorities to grant permission for telecom towers is adequate and supportive for growth of telecom infrastructure?

The existing frame work is not suitable.

The mushrooming growth of telecom towers in India is at the cost of public health.

6.19 Is there a need to set-up a single agency for approval and certification of towers? Is there an existing agency that can do this work? If a new agency is proposed, what should be its composition and framework?

No need for a single agency. It should be the responsibility of the Municipal Corporation, to give approvals in the same way, as they approve the building plans. In fact in many states the law prohibits, any structure (pole or tower) of more than 5 meter height from the height of building approved.

6.20 Is it feasible to have a uniform framework of guidelines including registration charges, time frame, single window clearance etc for granting permission for installation of telecom towers and laying of optical fibre cables? If so, can it be prescribed by the Licensor or the Regulator?

These are two different issues, for Tower the responsibility should be of the local civic bodies. (Municipal Corporation)

As regard the laying of fiber, the Municipal corporation them self should get the ducts laid & sell the ducts to any interested party, this is the model used in all developed countries.

In India this has been opposed by the incumbent operators to ensure there "oligopoly" on the fiber.

6.21 What can be an appropriate time frame for grant of permission for erection of towers?

Maximum 30 days, for approval or rejection. Rejection should be, with a clear reason, as per the bylaws.

6.22 How can a level playing field be ensured for telecom service providers vis-à-vis other utility service providers especially in reference to tower erection?
Not clear?

6.23 Which agency is best suited to inspect the buildings and certify the structural strength of the buildings in case of roof based towers?

Municipal Corporation should verify the approved structural engineer's certificate.

Infrastructure sharing

6.24 Should sharing of mobile towers be mandated?

Infrastructure sharing should be made mandatory,.

6.25 Should sharing of active infrastructure, created by themselves or infrastructure providers, be allowed?

Yes, sharing of active infrastructure should be permitted, which will further reduce the capex & opex which will benefit both the operators and the subscribers (by way of low tariff). This will also reduce Forex outflow, since lesser number of equipments will be imported.

Use of USO for rural areas

6.26 Please comment on the issues raised in paragraph 5.6 of Section A of Chapter 5.
We agree, that no action should be taken by Government on the recommendations made on 19th March 2009.

IPV6

6.27 What measures are required to encourage the deployment and adoption of IPv6 in the country?
No Comments

6.28 In your opinion, what should be the timeframe for migration to IPv6 in the country?
No Comments

IPTV

6.29 What measures do you suggest to enhance provision of IPTV services by various service providers?
No Comments

6.30 Should there be any restriction on ISPs for providing IPTV services?
No restrictions, should be imposed.

General

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

For the proliferation of the Broadband, government should de-license additional frequency bands i.e., about 150 MHz in 3 GHz (2900-3050 Mhz and about 200 MHz in 5 Ghz (5070- 5150 MHz) bands.