



Response to TRAI Consultation Paper No. 1/2011 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.

We agree with the classification of infrastructure elements described in this chapter of the Consultation paper. Additionally in our opinion, IP1 should also be permitted to install and operate active IT and telecom equipments. The frequencies of the existing one or more mobile operators can be used.

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?

In our opinion, to effectively route domestic IP traffic and considering the huge area of Indian states, it should be made mandatory for every state capital to have an internet exchange. This will help small Data Centers, ISPs and will encourage many entrepreneurs to start new businesses.

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 is an existing set up and many internet exchanges are already in operation. Such Internet Exchanges should be installed in each state capital. Guidelines should be issued to make it mandatory for all ISPs to interconnect with NIXI exchanges in the state capital and route all the domestic traffic through such exchanges. Penalties may be imposed if domestic traffic is not routed through NIXI node of the state.

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?

As stated in earlier questions, since NIXI is an existing set up, under which many internet exchanges are already in operation, no other operators should be allowed to set up IP exchange points. This will ensure maximum utilization of the NIXI nodes, which is carrying lower traffic due to lack of interconnections by ISPs.

Mobile Virtual Network Operator

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

We agree with the views raised in the consultation paper.



In- Building Solutions

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

The government should reserve 3 MHz spectrum for IBS in 900 MHz, 1800 MHz and CDMA bands.

This will help to reduce the load on the outdoor BTS capacity in urban areas.

Similar practices are followed in UK (low power GSM) and Netherlands.

Operators should be encouraged to use 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.

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?

As per the studies, it is clear that large number of calls are originating and/or terminating while the subscriber is inside building.

The mobile teledensity is increasing substantially every month and the macro network of the service provider is getting congested due to higher number of users. In our opinion, government should take immediate steps to ensure Quality of Service, especially considering the introduction of 3G services in the country.

1. Other Service Providers (OSP) should be given 3 MHz for IBS in 900 MHz / 1800 MHz / CDMA bands
2. The license fees should be low, (say Rs. 20Cr).
3. OSPs should share their infrastructure with Licensed Service Providers.
4. Local Administration, such as Municipal Corporation etc. to make it mandatory while issuing clearances for new buildings, such as multiplexes, malls, hotels etc. to have IBS infrastructure inbuilt.
5. Necessary incentives for OSPs for installing & operating IBS, linked with number of Service Providers shared the same.

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

The government should encourage OSPs to introduce IBS by way of :

1. Licensing at a nominal license fees and no spectrum usage charges should be levied.
2. Incentives should be given for sharing the infrastructure in each facility. The License fees may be levied as 100%, 80%, 60% and 40% for 1, 2, 3 and 4 or more service providers sharing such facility respectively.
3. Local Administration, such as Municipal Corporation etc. to make it mandatory while issuing clearances for new buildings, such as multiplexes, malls, hotels etc. to have IBS infrastructure inbuilt.



4. To avoid refusal of service to any specific service provider, the license conditions should stipulate mandatory sharing of infrastructure to all service providers, who request for such services.
5. Further, it should be mandatory for OSPs/Service Providers to use indigenously developed Indian products in their IBS infrastructure since the incentive is already provided as a lower license fees.

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?

We agree with the point raised in the consultation paper, that innovative technologies such as “Distributed Antenna System (DAS)” should be introduced in the urban and semi urban areas. The multiple service providers should share such cost effective, time efficient and environment friendly solutions.

For reducing number of towers, DAS or use of street furniture for providing cellular services may be helpful. However, it will not completely eliminate the use of towers due to issues restricting the use of DAS technology in countries like India.

A recommended solution is that locating antennas near the users (i.e., on the street furnitures) with low power transmitters. Use optical fiber to feed RF signal in optical signal from the centrally located BTS and reconvert to RF signal at the antenna site installed in the street furniture. This can be used for other services also, such as Broadband etc.

The possible advantages of planning a network with DAS are (1) possibility of allocation of centralized radio resources dynamically depending upon the available spectrum and traffic requirements, (2) coverage of hot spots & holes, (3) very low interference anticipated due to low power radiation and antenna installed at a low height. (4) Easy upgradation to new and future technologies (5) sharing of network for different wireless services by multiple service providers (6) Low Capex & Opex and (7) no apprehension of health hazard due to radiation of low power (less than 1 Watt) by BTS and Handsets.

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

- 1) 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.
- 2) 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.
- 3) 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.



4) 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, we agree, it should be done ASAP.

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

For urban and semi-urban, number of types of towers should be restricted to Six (6) (three roof top and three ground based towers).

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

In our opinion, the specifications should include the suitable height and number of antennas, which could carry maximum number of 2 sets of antennas in each frequency band licensed for wireless applications, namely 900MHz, 1800MHz, UMTS and 800 MHz CDMA.

Reducing Visual Impact of Towers

6.16 What is the likely cost of camouflaging the towers?

It cannot be a fixed amount, as it depends from type of sites and may be upto Rs. 50,000 per site.

6.17 Can camouflaging be made mandatory? If so, can this be made part of the design standards of the towers?

Yes, camouflaging should be made mandatory. However, since camouflaging will depend upon each site, it cannot be made part of tower design.

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 framework is not appropriate. The public health is compromised for mushrooming growth of telecom towers in the country.



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?

In our opinion, no separate agency is needed, It should be the responsibility of Civic bodies (such as Municipal Corporation) to give approval, as in the case of approving new building etc. 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?

- 1) In our opinion, the granting permission for installation of towers is the responsibility of civic / municipal bodies.
- 2) With regard to laying of optical fiber, following the best international practices, the civic body should get the ducts laid and allow the service providers to use on financial terms. However, In India, this has been opposed by incumbent operators.

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

In our opinion, it should be 30 days for both approval or rejection. In case of rejection, justification as per the bye-laws may be provided.

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?

In our opinion, Municipal Corporation should inspect and verify the approved structural engineer's certificate.

Infrastructure sharing

6.24 Should sharing of mobile towers be mandated?

We agree, 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. This will further reduce the capex & opex and 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 there is no need to take any action on the issues raised in this para as the recommendation is pending with the government.

IPTV

6.30 Should there be any restriction on ISPs for providing IPTV services?

In our opinion, no restrictions should be imposed to ISPs for providing IPTV services.

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.