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Comments: Consultation Paper on Telecommunications Infrastructure Policy

*Internet Exchange Points*

6.3 Do you perceive the need for effective Internet exchange point(s) in the country to efficiently route domestic IP traffic?

Response: Yes, there is an urgent need for effective Internet exchanges through licensees, under the purview of the TRAI.

*In-Building Solutions*

6.7-6.11

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

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

6.9 How can sharing of IBS among service providers be encouraged?

Does TRAI need to issue any guidelines in this regard?

*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?

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

Response: The key is to consider the needs from a total systems perspective, and a coherent set of objectives.

1. There is a case for the ultimate goal being net societal benefits.

2. If this premise is accepted, the objectives could be:

a) For users: effective, efficient, low-cost service delivery anywhere in the country (within reason). "Users" include government agencies as well as corporations and individuals in civil society.

b) For service providers: profitable enterprises.

[It has been suggested that government revenues are a third (and equal?) objective. This is a misplaced notion, because if the criterion in a democracy is the public interest, presumably government collections should be no more than an adjunct, subordinate to societal benefits (in the form of user and provider benefits as stated in (a) and (b) above). This is because the government's legitimacy in a democratic society derives from its public mandate; government

has no feudal, imperial, or colonial rights. Therefore, it has no right to collections other than for society's benefit, i.e., the taxes that are applicable to all.

With this approach, comprehensive solutions can be worked out and implemented that cut across government departments for the needs of society (as against form a departmental/ministerial perspective: within the ambit of the DOT, the TRAI, etc.). E.g., the Rights of Way charges mentioned as one aspect of the problem, zoning laws, land taxes, etc.

A combination of remedial measures that are comprehensive and integrated, and with end-to-end linkages, are required to address all these issues, such as reducing the number of towers, the use of shared network resources including aspects such as DAS, ubiquitous access, reduced capital and operating costs, and an environmentally responsible approach (part of the next CP on Green Telecommunications). Addressed piecemeal, the outcomes are likely to be disjointed and suboptimal.

It would then be advisable for the TRAI to consider mandatory resource sharing, with a mechanism that compensates asset owners adequately for good infrastructure, for building and sustaining the development of a robust network going forward. The scope of resource sharing covers all resources including spectrum.

#### *Standardization of Tower Design*

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

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

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

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

Response: The requirement is an interdisciplinary, problem-solving approach to define the processes and agencies whose domain expertise is needed to develop systemic, integrated solutions. The TRAI can seek to initiate such a process, recognizing that it extends far beyond the remit of any ministry or agency. This applies to the following items on improving aesthetics, No. 6.16 and 6.17.

#### *Reducing Visual Impact of Towers*

*6.16 What is the likely cost of camouflaging the towers?*

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

#### *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?*

Response: The current framework is clearly inadequate as brought out in this note.

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?*

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?*

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

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?*

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?*

Response: Such issues are best addressed through an interdisciplinary group with the requisite competence to develop the process requirements and specify institutional needs as necessary, including the specification of new entities/agencies. There needs to be a problem-solving approach that is practicable (i.e., has stakeholder buy-in), given the situational and systemic realities here.

#### *Infrastructure sharing*

6.24 *Should sharing of mobile towers be mandated?*

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

Response: It would seem logical that emerging economies take an approach to essential infrastructure such as communications including broadband that conserves resources and maximizes service delivery. If it can be managed, this is best achieved by a system of infrastructure sharing in terms of capitalizing on available resources. A scenario of a shared core network and access networks must necessarily figure in an evaluation of possible alternatives. This applies to spectrum as well, because of the potential benefits from consolidating commercially available bands, instead of fragmenting it through exclusive allocation to separate operators.

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