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Subject : TRAI Consultation Paper No. 1/2011 on “Issues related to Telecommunications Infrastructure Policy”

Dear Sir,

At the outset, we thank TRAI for the initiative taken by them for seeking comments for coming out with a consultation paper on a subject which is critical to the growth of the economy as such vis-à-vis the telecom industry.

Viom Networks Limited, having an IP-1 registration from Department of Telecommunications, is a leading provider of telecom infrastructure. Our response is enclosed. If there is any other contribution that you feel we can make in this direction, please do let us know.

Thanking you,

Very truly yours
for **Viom Networks Limited**

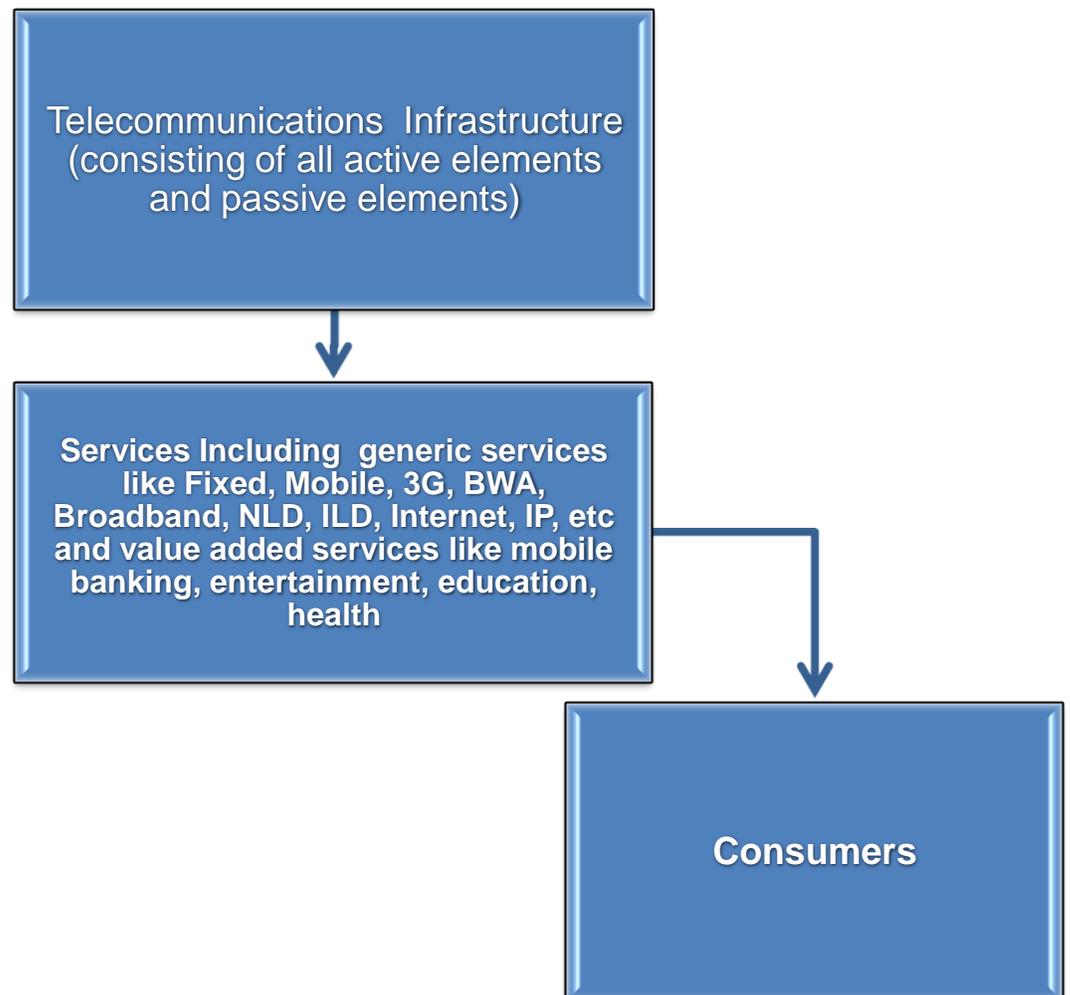
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Overview of Telecom Infrastructure

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.

No, the TRAI diagram does not reflect the fact that most players in India’s telecommunications services sector are integrated and use the same physical infrastructure to provide several services including fixed, mobile etc. In our view, TRAI must separate the elements thus:

TABLE 1



The above depiction highlights the centrality of infrastructure for all services. It divides the physical and logical part of the network as well as the fact consumers. It's a source which acts as an input service towards all telecom services – fixed, mobile, broadband, long distance and IP, and has no direct contact with the end consumers. Users experience the physical infrastructure through services deployed on it.

This makes Infrastructure a unique segment in the telecom sector. It is a key link in the telecom value chain, and supports implementation of several important other policies and programmes such as the Common Services Centers (CSC), e-Governance, e-Education & e-Health initiatives. It can support national security measures by facilitating surveillance. Similarly, the same infrastructure can be leveraged for a comprehensive system for providing timely warnings in case of disasters. Telecom infrastructure, especially in rural areas, can conveniently house banks branches, post offices, ATMs, etc. This can drastically reduce the cost of delivering several essential services which are otherwise difficult to provide in remote and rural areas.

It enables us to treat infrastructure holistically and allows us to see that catalyzing and incentivizing infrastructure creation helps all stakeholders which in turn, promotes economic growth.

Therefore, the Infrastructure Provider segment needs to be recognized and treated as a distinct segment from the traditional telecom services provisioning segments.

Internet Exchange Point

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

It's not licensing but access to technology agnostic Infrastructure which is vital for competitive environment that is, in turn, key to cheaper and higher quality services. Today IP-1 players can easily deliver neutral host platforms for all types of networks including IP based ones.

Globally, IXP services are provided, as far as possible, through neutral hosts, like IP-1 players. They will be imperative for India, since, in the coming days, data will become a progressively larger component of network traffic.

In- Building Solutions

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

Towers are key infrastructure. However, their proliferation raises some legitimate concerns about the cluttered skylines, excessive radiation etc. It is therefore desirable to remove redundancy and duplication of towers to minimize the potential risks.

This can be ensured if tower capacity is used to the full and by using towers for only those functions that cannot be performed economically without towers. **With this in mind, we propose the following:**

1. Use existing tower capacity effectively by offering incentives for sharing
2. Help reduce heights of towers, where possible, by use of technologies like IBS, DAS
3. Make towers less conspicuous by encouraging camouflage solutions
4. Permit new towers only if adequate capacity is unavailable in existing infrastructure
5. Facilitate, speed up, and subsidize, rights of way to connect more and more towers with fibre so as reduce dependence on towers.
6. Encourage and subsidize use of IBS and DAS solutions wherever possible
7. Expedite rollout of fibre backbone for broadband.
8. Proactively subsidize relocation of “problem” towers to designated areas where they could be deployed without loss of functionality as well as without risk to environment or skyline.

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?

In order to maximize bandwidths without increasing dependence on spectrum, it is important to encourage the use of IBS in all large structures with high usage of communications. Builders of any new Infrastructure should be required to implement IBS through IP-1 players. In new settlements, IBS be encouraged for all office/commercial/high footfall areas /residential townships, as a precondition for issuing “completion certificate” & for the existing ones, a strict timeline of 6/12 months may be given for its deployment.

Deployment of IBS solutions by single operator carries risk of anti-competitive practices including denying access to their competitors. Telecom Infrastructure companies on the other hand provide a neutral host platform. They should be rewarded with financial incentives if they provide proof of deployment of IBS.

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

TRAI can help by creating an enabling environment for deployment of IBS by IP-1 players only. This will ensure customers enjoy the benefits of competition in the market place, since IP-1 players allow access simultaneously to multiple mobile operators. TRAI should prevent deployment of IBS for exclusive use by one operator & it should also recommend financial incentives to meet the higher upfront costs for deploying IBS by neutral host providers-IP1.

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. DAS can help to reduce dependence on high towers. This is particularly relevant near airports, defence installations, monuments, and similar areas. Thus, DAS can enhance safety as well as aesthetics.

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

This is largely due to lack of financial incentive and absence of regulatory support. TRAI should recommend to the DoT to issue an enabling clarification.

DAS can work best if alternate connectivity options like optical fiber are available. Increasing the use of DAS solutions requires incentives to deploy new fiber and to access fiber that is already deployed.

Other impediments in adoption of DAS are as follows:

- a) Absence of processes with Electricity boards/MC for leasing of Power posts space to Telecom Infra companies.
- b) Lack of govt support for IP companies to install common BTS for sharing by all Operators.
- c) Tendency among builders to create single user platforms instead of neutral host solutions that expand consumer choice..

Standardization of Tower Design

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

The tower infrastructure companies practice self-regulation in adoption of designs suited to the specific features of various locations. Agencies such as TEC, SERC, CPRI and IITs, approve towers before their deployment.

The objective of the policy intervention should be to bring cost efficiencies through standardization of specifications. This will also aid agencies involved in approving towers as well as ensure that discussions and dialogue within civil society as well as in the media is better informed.

Any efforts for standardization must ensure that the standards only define optimal functional specifications. The safety is paramount, and specifications to that effect should be standardized vis-a-vis to the designs of the tower. Currently, the designs factor criteria specific to each geographical area such as wind speed, seismic activity, nature of soil, pollution, fire, etc.

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

As stated above, only functional specifications should be standardized. The functional classification should be broadly classified on the basis of Ground Based Towers (GBT) or Roof Top Towers (RTT). It is important to consider the scalability of the tower while standardizing the functional specifications. Four to six different types of standardized functional specifications may be sufficient. However, the advancement in tower functional specifications should be considered at a regular time period. This will enable the sector to benefit from innovation as well as competition.

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

In our opinion, innovation in designs can further enhance efficiencies and safety yet the important specifications can be – ability to withstand high wind speeds especially in cyclone prone areas, structural stability, nature of soil, pollution, fire, proper laying and shielding of cables, etc. However, these important specifications are already inherent in the current designs being used by telecom infrastructure companies.

It is however critical that world best practices are followed and that unorthodox approaches are avoided unless there is demonstrable value in moving away from the norm.

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

The crucial issue here is to have an agency of demonstrable competence, independence, transparency, and accountability that can work constructively with stakeholders. Any of the technically competent agencies such as Indian Institute of Technologies (IIT), Structural Engineering Research Centre (SERC), Central Power Research Institute (CPRI), State Electricity Regulatory Commissions (SERC), and Telecommunication Engineering Centre (TEC), and possibly, others, can perform the task.

Reducing Visual Impact of Towers

6.16 What is the likely cost of camouflaging the towers?

There is no accurate answer possible for question. Costs will depend on several factors including acceptable levels of camouflaging and the nature of solutions deployed. There could be a significant cost associated with the camouflaging of towers. From some similar experiences of camouflaging towers in other countries, we believe, the cost of such towers could be as high as two to three times that of regular telecom towers.

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

There could be special consideration made for camouflaging towers in and around certain specific urban areas having heritage or other architectural significance; It is important however to be conscious of cost-benefit issues in specifying nature and extent of camouflaging. Civic agencies and other related departments must work closely to ensure the cost-effectiveness of camouflaging exercise

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?

No this is far from adequate and needs urgent improvement. Currently, the Telecom Infrastructure industry faces challenges in expanding their reach because of multi-stage approval processes from various civil authorities such as municipalities, gram panchayats, forest officials, etc. These challenges further get accentuated as these procedures vary from state to state, and amongst the local authorities within the same state. Even getting permissions to lay down a fiber cable along a 'kachha road' entails long lead times and high costs. The land types & ROW for the deployment of telecommunication equipment is cumbersome, and

slow since multiple permissions are required. Agencies frequently demand arbitrary and often prohibitive fees.

Some treat infrastructure businesses at par with petty commercial undertakings, some look at infrastructure companies as a means to finance deficits etc. There is little agreement amongst authorities on any of the following key issues for infrastructure providers:

1. Parameters for approval
2. Registration charges
3. Access to power from electricity boards
4. Price for power
5. Number and sequence of approvals required
6. Waiting times for approval
7. One time and periodic fees
8. Role of civic authorities related to aesthetics, safety etc
9. Nature of enforcement and approach of concerned authorities

It is extremely important that the significance and criticality of this Industry is accepted and understood by Local Bodies through a specific mandate issued by Central Government and State Governments. Uniformity in the rules across country in providing right of way, levies and specifying other requirements of safety are crucial. Their absence has led authorities to take ad hoc decisions and cause wide scale harassment.

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?

Yes. There is an urgent need for such a body simplifying and harmonizing complex rules and processes so that unreasonable barriers do not impede rollout of infrastructure. Hence it is proposed that process is institutionalized through the creation of a central body, for infrastructure deployment. Local bodies must not control the process for telecom Infrastructure. Central government should take up the cause of creating a common set of rules for towers to avoid problems and misconceptions.

It would be best to set up a new independent agency comprising of Civic Authorities, Electrical Board, Pollution Board, DM office, RWAs, Revenue Department & land Department with a clear mandate, and one that functions transparently and consults regularly with stakeholders.

6.20 Is it feasible to have a uniform framework of guidelines including registration charges, period, 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?

Yes. Such a framework is feasible even if it faces some opposition. In those cases, where central government has no direct jurisdiction, it may be necessary to create a coordination mechanism after an appropriate centre-state consultative process during e.g. the Chief Ministers' conference.

Also, all states have an IT ministry or IT department. There can be a framework whereby, a single window would provide solutions to problems related to telecom etc. In brief, this body should be focusing upon:

1. Uniformity in Policies for Right of way procedure for laying underground cables &
2. Rules and levies related to Telecom Infrastructure including Telecom Towers.

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

The telecom infrastructure industry operates based on standardized processes. While these companies could self-certify their towers, yet if permission is required, such as in sensitive areas such as defense cantonments, heritage sites, border areas, etc., the Nodal Agency should grant permission within such reasonable time, but not exceeding 30 days from the date of receipt of requests. Beyond 30 days, the application should be deemed to have been approved.

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?

This can be done by encouraging the setting up of a high-powered infrastructure agency described above. The agency must have the requisite economic, technical, and social skills and expertise to work towards creating a sustainable environment for infrastructure as well as the importance of and need to ensure fair competition.

Also, the same level of authority must be accorded as is available to other public utilities, by the local authorities in the context of granting Rights of Way (ROW).

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?

A Government certified structural/civil engineer is best suited to inspect the buildings and certify the structural strength of the buildings in case of roof based towers.

Infrastructure sharing

6.24 Should sharing of mobile towers be mandated?

Although the sharing of mobile towers should not be mandated, the Government needs to encourage the sharing of mobile towers especially, in all cases where there exists unused tower capacity and the proposed new tower offers no newer features. New towers should be permitted only if those that already exist in the area are unavailable for sharing. It should also propose a programme of incentives to upgrade all existing infrastructure to newer technologies e.g. DAS and IBS.

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

The sharing of active infrastructure is already allowed on behalf of the telecom service providers. Maximising shared infrastructure both ways is good for all stakeholders and helps reduce costs.

Use of USO for rural areas

6.26 Please comment on the issues raised in paragraph 5.6 of Section A of Chapter 5.

Infrastructure is a highly capital intensive business and its sharing benefits consumers as well as the economy. Infrastructure sharing is also the fastest way of reaching services to unconnected rural areas, which is USOF's urgent priority. USOF funds can make a critical difference in cases where otherwise business considerations would preclude creation of infrastructure. Therefore, USOF must be available to finance infrastructure players. Indeed, the latter must be the USOF's most important priority. This means support for creation, upgrade, and maintenance of infrastructure. Support for green solutions e.g. renewable energy options can make an important contribution to India's efforts to reduce carbon footprint. This could therefore be a win-win for all stakeholders.

General

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

As highlighted in answers to several questions above, a coherent and enabling policy for infrastructure will have far-reaching benefits for users of all types of telecommunications services. Steps that reduce the cost of creating and commissioning sharable infrastructure will support technology redundancy and promote investment. This requires promotion of infrastructure that enables consumers to enjoy the full potential of competition between India's service providers as well as the technologies in contention today as well as those that will be available in the coming years. Such an approach will prevent consumers being locked in choices that deny them the full potential of telecommunications in their lives and make them and India's economy less productive.

Therefore, decisions related to telecom infrastructure must reflect its role as a key/Critical utility especially in crisis and emergencies and help reduce the investments required for its creation. There is need to lay down a **National Telecom Critical Infrastructure Policy (NTCIP)**, as an important section in the new National Telecom Policy 2011, NTCIP should lay down uniform procedures for land acquisition, uniform taxation regime, applicable subsidies, promote optimum sharing. It must also suggest other measures for creating a conducive environment for creation of telecom infrastructure.

This requires that rules relating to infrastructure are made after due process involving key stakeholders from the community as well as industry. Approval process must be transparent and objective so as to avoid the huge costs that poor quality decisions can impose on the players as well as the community.

More so, **telecom infrastructure should be considered at par with other "infrastructure sectors" such as power, ports, natural gas distribution, etc.** Telecom Infrastructure companies should be provided similar incentives, as provided to other "infrastructure companies" in India.

- a. **Tax holiday:** Infrastructure is the backbone of an economy. Given the substantial capital investment required, it is imperative to promote private sector participation in infrastructure development. Tax incentives play a significant role in attracting these private sector investments. The Government of India (GoI) provides a tax holiday under section 80IA of the Income Tax Act, 1961 to infrastructure companies such as in the power sector, ports, natural gas distribution etc. A similar tax holiday should be extended to tower companies, which are a critical infrastructure. Such a step is expected to bolster the overall development of the telecom sector. In order to incentivize private sector participation in infrastructure projects, State Governments need to extend the exemption from state levies like VAT, Entry Tax and Stamp Duty etc. for these

projects. There is urgent need that authorities at Central and State level work in tandem to achieve the objective of overall telecom infrastructure development.

- b. **Accelerated depreciation:** The telecom infrastructure is a highly capital intensive sector and benefits of accelerated depreciation would encourage further investments in expanding the telecom infrastructure to rural areas. The advent of newer technologies, such as IBS, DAS, use of greener solutions, etc., would amount to significant increase in the overall capital investments. As an incentive to the industry to adopt such newer technologies, the Government needs to provide accelerated depreciation of equipment to tower companies. The accelerated depreciation of equipment scheme could address the current infrastructure deficiency such as low rural teledensity and adoption of newer technology.
- c. **Lower import duties and excise exemption:** The market size for wireless infrastructure equipment is estimated to be INR36,000 to INR45,000 crore and equipment worth INR19,000 crore was imported last year. As the telecom sector is highly dependent on imports, it is necessary to levy the lowest import duties. Exemption of excise duties on telecom equipment in India would also help in boosting the local manufacturing, and reducing the cost of telecom infrastructure.
- d. **Civic Taxes and levies:** Today, there is a wider appreciation in the minds of policy planners, regulators and industry stakeholders on the role that a healthy telecom sector plays in the overall socio-economic growth of our country. Unfortunately, this appreciation seems to be missing in the actions of several state and local authorities. There are numerous civic taxes and levies that get charged and many of these are enhanced in a very arbitrary manner. These are barriers to ubiquitous access of telecom services. There is a serious lack of consistency and uniformity around these from state to state, and within a state as well. There is therefore an urgent need to streamline policies and guidelines across the country to rationalize these civic taxes and levies. We suggest that all such civic taxes and levies be charged once at the time of new tower setup or new right of way; and the recurring charges should be done away with.
- e. **Service Tax:** Currently infrastructure Providers charge Infrastructure provisioning fee (IP fee) for the providing space and power infrastructure to the Telecom Operator. They charge power & fuel charges from different Operators who are sharing sites as reimbursement for the actual power and fuel expenses. Service Tax is being levied on Power & Fuel Charges. Power & Fuel Charges spent in a site are proportioned to all operators sharing the site and are passed through in nature. Telecom Ministry is requested to take up with finance Ministry to exempt this tax on pass through Power & Fuel charges billed.
- f. **Utility Power Connection: Priority and Tariff thereof** Availability of adequate power supply is crucial for delivery as well as consumption of Telecom services. With growth of wireless services, it is particularly important for spread of Telecom Services in Rural areas. In large parts of India the power is either unavailable or erratic. Currently the Tariff category for the power connection to

Telecom towers is treated as a commercial establishment and thus highest Tariff is applied to Telecom site infrastructure.

The Telecom towers should be treated as a public utility service across all states and qualify for “industrial” category for purposes of determining applicable tariff. The state electricity boards should process the utility connection applications from Telecom Infrastructure service provider on priority and treat these connections as Industrial connections. GOI should take up the matter with Forum of Electricity Regulators (FoER). Till a decision is received; the electricity connection priority and Industrial Tariff for Rural areas should be enforced through intervention of DoT with Ministry of Power and Regulating Body (CERC).

Communication facility should be considered as an emergency service which should run 24x7. Electricity companies should be responsible for providing electricity to these Telecom Infra and tower sites within a specified time limit & penalized for failing to do so in a reasonable time. This will act as a stimulus for electricity companies to provide electricity in rural areas as well.

Leveraging India's Telecommunications Infrastructure

Telecom Infrastructure providers can be **one-stop-shop** for optimum utilisation of resources required for expeditious deployment of much needed broadband access in the country. More so, the tower related structure & services could also be used to offer a host of subsidiary services at cheaper rates.

The roadmap for accelerating inclusive, equitable and sustainable growth of broadband in India depends on creation of broadband infrastructure that can be accessed equitably by all. Government and IP-1 can partner to use funds from the Universal Services Obligation (USO) fund to enable this. This partnership won't remain limited to just “Broadband connectivity but extend to the last mile. For instance, CSC can be conveniently collocated with Telecom Tower Infra to enhance the quality of life by deploying useful and critical applications such as e-governance, e-education and e-health and accordingly, Government will be able to complete its 27 NeGP mission mode projects in a phased and time-bound manner”.

The excess renewable energy at Telecom Towers can be used for community purposes like street lighting in urban areas and water boring, charging lanterns etc. in rural areas. This can promote a cleaner and more sustainable solution, beneficial to all in line with the stated policy of the Ministry of New Renewable Energy (MNRE). Similarly services such as Surveillance, Weather forecasting, ATMs etc. can be provided cost effectively through use of Telecom Infrastructure/Towers.