



Cellular Operators Association of India

***INFRASTRUCTURE SHARING IN
TELECOM SECTOR***

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INTRODUCTION

India has emerged as one of the fastest growing mobile markets of the world. Within 12 years of the introduction of mobile services in the country, the total mobile subscriber base crossed 200 million in August 2007. When GSM cellular services were first introduced in 1995 the total tele-density of the country was 0.8 per hundred persons (all mandated fixed lines and no mobiles). In twelve years since then, tele-density has grown exponentially to nearly 21 per hundred persons in August 2007.

The private sector has invested over Rs. 80,000 crores in setting up 136 state-of-the-art cellular mobile networks serving about 8,000 cities/towns and nearly 1 lakh villages all over the country. However, in spite of the aggressive rollouts and massive investments by the service providers, as stated above, even today 40% of the population and 60% geographical area is still not covered by mobile services.

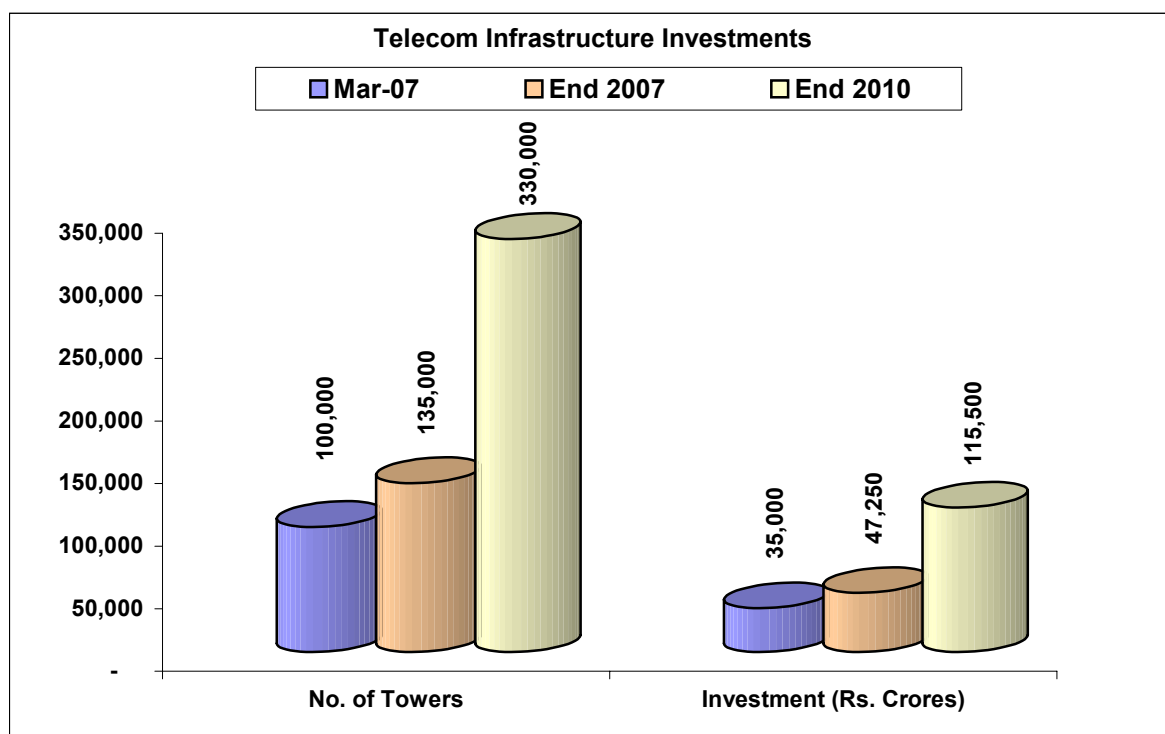
Therefore enhancing reach through creation of infrastructure is the need of the hour. To maintain increased growth levels, the Service Providers need to push out to rural and remote areas. However the capital costs for this are very formidable and are simply not addressable through the revenues currently generated. The ever falling tariffs and the resultant decline in ARPUs has become a serious area of concern for Service Providers. Declining ARPU leaves the Service Provider with lesser amount of re-investible funds for expansion of service – which otherwise could have been far more widespread by now.

Under these circumstances, the concept of Infrastructure Sharing between cellular operators assumes crucial importance. This will allow operators to leverage /ride on existing infrastructure to provide affordable services to rural consumers. In a low-income country like India, it is also undesirable for each cellular operator even if they were able to afford it, to replicate expensive telecom infrastructure to reach the subscribers in rural / remote areas.

Infrastructure Sharing is equally important in the urban areas where the presence of 6-8 operators and a rapidly increasing mobile subscriber base, is resulting in more and more cell-sites being put up by each operator to cater to higher traffic requirements. This not only results in separate individual high costs for each operator but also mars the landscape.

INVESTMENT REQUIREMENTS AND BENEFITS FROM INFRASTRUCTURE SHARING

TRAI in its Recommendations on Infrastructure Sharing has rightly noted that in order to achieve the national target of 250 million subscribers by December 2007 and 500 million subscriber by 2010, about 135,000 towers would be needed to be set up by 2007 and 330,000 by 2010 – as against 100,000 towers which exist as of now across the country. Assuming that a single tower costs around Rs 35 lakhs, the investments required to achieve the same would be to the tune of about Rs. 80,000 crores. Most of these would go into towers shelters, civil work, electrical power supply and optical fiber. **Therefore a huge amount of capital infusion would be required to achieve the targets set by the Government.**



Under these circumstances, **Infrastructure Sharing between cellular operators is an essential requirement**, especially for the achievement of National Telecom Objectives as it would not only help avoidance of duplication of resources but would also help Service Providers to achieve cost savings from reduced CAPEX & OPEX costs.

It is expected that advantage of such Infrastructure Sharing will eventually flow to the subscribers in terms of faster roll-out and greater affordability of services.

Benefits of Infrastructure Sharing

- a.** Infrastructure Sharing will cater to the multiple requirements of the growing Indian Telecom Sector and would facilitate better Quality of Service (QoS), faster network rollout, at reduced costs.
- b.** Moreover, Infrastructure Sharing checks proliferation of towers by percolating the benefits of technological innovations, which are environment friendly and aesthetic in nature
- c.** Another critical benefit of Infrastructure Sharing is to ensure ubiquitous coverage by ensuring deployment of cellsites in Critical/High Security Areas.
- d.** Infrastructure Sharing allows operators to leverage /ride on existing infrastructure and will thereby ensure optimal utilisation of infrastructure and spread of affordable services.
- e.** Infrastructure Sharing also ensures savings in both Capex and Opex for the operators, which in turn ensures availability of capital for expansion of service.

INITIATIVES TO ENCOURAGE INFRASTRUCTURE SHARING IN INDIA

In a major step to accelerate Infrastructure Sharing, TRAI recently concluded its Consultation Paper on Infrastructure Sharing and has sent its recommendations to the Department of Telecommunications.

Further, Universal Service Obligation (USO) fund Administrator has initiated a scheme to encourage Infrastructure Sharing in rural areas where-under financial incentives/subsidy, determined on the basis of Revenue Deficit (Net negative after adjusting for Capex, Opex against usage charges), is provided to the Service Providers for setting up of shared cellular towers in rural/remote areas.

While above is true, there are certain major issues which need to be addressed in expeditious manner to reap the potential benefits of Infrastructure Sharing. In this context, in the subsequent sections some of the major issues have been highlighted and measures to overcome the same have been recommended. These recommendations can be broadly classified as:

- Licencing/Policy initiatives
- Financial initiatives

In this section, we would discuss matters pertaining to Licensing and Policy initiatives required to boost Infrastructure Sharing.

RECOMMENDATIONS PERTAINING TO LICENCING AND POLICY

PASSIVE INFRASTRUCTURE SHARING

- a. Passive Infrastructure Sharing is already permitted as per existing licensing conditions of Unified Access Service Licence (UASL) and Cellular Mobile Telecom Service (CMTS) License.
- b. Passive Infrastructure Sharing to some extent is taking place based on the industry initiative. The private players have been sharing passive infrastructure on bilateral basis, wherever possible. Further, as per the TRAI Recommendations on Infrastructure Sharing about 25% sites are being shared among the operators.
- c. The task is to accelerate the pace of sharing and adoption of this pattern as the key strategy. This may be done by ensuring that Infrastructure Sharing amongst Service Providers is implemented on fair and equitable grounds.
- d. Presently there are large number of Infrastructure Providers Category I (IP-I). To ensure that Infrastructure Sharing happens in the telecom

sector, **it is important to encourage Independent Infrastructure Service Providers. It is imperative to ensure that the services provided by the Infrastructure Service Providers should be cost effective and financially attractive.**

- e. Although sharing of passive infrastructure should not be mandated across all regions / areas, same should be encouraged through various incentives.
- f. Also, TRAI in its recommendation to DoT on Infrastructure Sharing has suggested:

“There is urgency for passive infrastructure sharing. The existing provisions in the licenses of BSOs, CMSP, and UASL permit passive infrastructure sharing. The Authority is of the view that mandating passive infrastructure sharing at this stage is not required. Accordingly the Authority does not recommend any legislation/ amendment in the license conditions.”

UNIFORM POLICY/GUIDELINES FOR INSTALLATION OF CELLSITES

- g. No uniform policy guidelines have been issued by Civic Authorities for installation of cellsites across the country. Various Civic Authorities across India have varied policies/ guidelines for installation of cellsites. As a result, operators find it difficult to meet the cellsite rollout requirement hence sometimes find it difficult to maintain desired Quality of Service (QoS) in certain areas.
- h. To encourage Infrastructure Sharing it is highly recommended that telecom being a public utility service should be treated as a critical infrastructure. **Detailed and uniform policy guidelines should be issued by Government/Regulator so that the operators are able to install cellsites at all locations**, irrespective of whether a location is falling in Commercial or Residential Areas or Public Property, of course subject to meeting the structural and other technical criteria.

IDENTIFICATION OF CRITICAL INFRASTRUCTURE SITES

- i. At present there are areas like Lutyens Zone, Cantonments, Central Government and State Government office buildings, Designated Forest, Green Belts areas, Government Residential Colonies where the installation of the sites by individual operators is either difficult or is not permissible due to certain imposed restrictions pertaining to lack of policy/guidelines for installation of Cellsites in such locations, due to security and aesthetic concerns.

- j. One of the solutions to overcome this situation is to identify such areas and term them as Critical Infrastructure Sites (CIS) and mandate sharing.
- k. Joint Working Group (JWG) having representatives from Service Providers (COAI and AUSPI), BSNL, IP-I, Municipal Committees/Corporation, and Local Bodies etc should be constituted to identify such CIS.
- l. It is important to consider TRAI's recommendations in this regard:
 - I. ***It is necessary to identify and notify critical infrastructure sites to facilitate sharing of passive infrastructure in an expeditious manner. In order to identify and notify critical infrastructure sites, it is recommended that a Joint Working Groups (JWG) should be constituted with District Magistrate of that district as the Chairman and having representatives from all mobile service providers present in that service area, representatives of municipal corporation/ Body, and a representative of Military land and cantonment wing if area under consideration also covers cantonment areas. The committee shall hold its meeting when requested by any of the licensed service providers in that area and decision shall be taken in a time bound manner but preferably within three months time. All identified sites once approved by the committee will be notified as Critical infrastructure sites by the office of Chairman, Joint working committee (JWC).***
 - II. ***Municipal bodies/ Corporations/ Cantonment authorities shall grant permission to any service provider/ Infrastructure provider category I (IP I) to set up tower in such notified sites only when the service provider gives a commitment that the site would be shared by at least three service providers.***
 - III. ***In case of any disagreement among the service providers for sharing of critical site, the same will be first referred to the Joint Working Groups (JWG) to settle the issue before taking any other remedial action.***
- m. Further, it is recommended that various Government Bodies and concerned Civic Agencies should also have a definite plan to make available sites for shared roll out in these areas in a time bound manner so as to improve the coverage and also manage the higher capacity required in some of these areas.

SACFA CLEARANCES

- n. Another impediment for faster growth of wireless services is SACFA clearance procedures. The procedure for the SACFA clearance requires site coordinates, allocated frequency spectrum and carrier frequency allocation for backhaul link. It is serious bottleneck since SACFA clearance is given only to CMSP/UASL Licencees and Infrastructure Providers Category-I (IP-I) cannot apply for SACFA clearance.
- o. It is highly recommended that Infrastructure Providers (IP) Category-I should be allowed to seek SACFA clearance if they have at least one agreement with existing wireless service providers for leasing infrastructure. This would enable Infrastructure Providers Category-I (IP-I) to proactively start the erection of towers and offer facilities to CMSP/UASL for sharing.
- p. Also, it is essential that SACFA clearance be given in a stipulated time frame, say 30 days. If no communication is received in the prescribed time frame, the request should be deemed to be approved.
- q. TRAI in this context has recommended:

"SACFA clearance needs to be given in a stipulated time frame. If no communication is received in the prescribed time frame, the request may be deemed to be approved. Infrastructure Providers (IP) Category-I may also be allowed to seek SACFA clearance if they have at least one agreement with existing wireless service providers for leasing infrastructure."

ACTIVE INFRASTRUCTURE SHARING

- r. Active Infrastructure Sharing means sharing of Active Equipments such as Antenna Systems, Cables, Filters, Node B, Allocated Frequency Spectrum, Transmission System, etc by more than one operator.
- s. It is pertinent to mention that the present Licensing Regime does not provide for Active Infrastructure Sharing as per Clause 33 of UASL and Clause 34 of CMTS license. As per the license conditions, resale or sharing of bandwidth is not permitted.

The respective Clauses of Licensing conditions read as: -

I. Clause 33 of UASL License:

- i. Sharing of "passive" infrastructure viz. building, tower, dark fiber etc. is permitted,*
- ii. Provision of point to point bandwidth from their own infrastructure within their Service Area to other licensed telecom service providers for their own use (resale not to be permitted) is also permitted.*

iii. *Sharing of switch by the LICENSEE for providing other licensed services is permitted.*

II. Clause 34 of CMTS License:

ii. *Sharing of "passive" infrastructure viz., building, tower, dark fiber etc. is permitted.*

iii. *Provision of point to point bandwidth from their own infrastructure within their Service Area to other licensed telecom service providers for their own use (resale not to be permitted) is also permitted.*

t. This policy at initial stage was justified to promote creation of infrastructure by various new Service Providers. This also contributed to creation of wide spread and a robust telecom backbone. Now, the country has fairly widespread telecom infrastructure. The market is also competitive. **Therefore Active Infrastructure Sharing for mobile networks needs a re-look in the existing scenario.**

u. Non-availability of Backhaul, especially in rural areas, has been a major concern. As the traffic in such areas is likely to be low in the initial stages; there is an obvious advantage of sharing such backhaul to carry traffic from Base Transceiver Station (BTS) to Base Station Controller (BSC). Such Backhaul Sharing can also help to reduce the load of the backhaul antennae on the tower reducing the cost to setup such towers and increase the possibility of sharing same tower by more operators.

v. It is strongly felt that in case Active Infrastructure Sharing is permitted, it would further reduce Capex and Opex to very great extent still permitting Service Providers to maintain their own spectrum and service quality. This will enable the operators to provide more capacity at the same cost and hence cheaper services to customers.

w. Thus, it **is highly recommended that Active Infrastructure Sharing must be introduced by making necessary amendments in the licensing conditions.**

x. Further, the Regulator must ensure that sharing policies are transparent, non-discriminatory and must be in accordance with a given framework. Any part of network i.e Antenna, Feeder Cable, Node B, Backhaul, etc should be permitted for sharing based on commercial terms.

y. It may be advisable to consider and implement the following TRAI Recommendations for encouraging sharing of Active Infrastructure.

I. The licence conditions of UASL/CMSP should be suitably amended to allow active infrastructure sharing limited to

antenna, feeder cable, Node B, Radio Access network (RAN) and transmission system only. Sharing of the allocated spectrum is not permitted.

- II. The active infrastructure sharing arrangements may be left to service providers based on mutual agreements.**
- III. Considering the importance of backhaul sharing for provision of mobile services in rural and far flung areas, licensing conditions of UASL clause no 33 (ii) and CMTS clause no 34 (ii) should be amended to allow service providers to share their backhaul from BTS to BSC only. Such sharing is permitted on optical fiber as well as Radio medium at port size E1 and multiple there of (nxE1). No sharing of spectrum at access network side is permitted.**

FINANCIAL AND ECONOMIC INITIATIVES

In this section we highlight some of the financial and economic incentives required to encourage infrastructure sharing among the Service Providers.

FIXED INCENTIVE

- a. A fixed amount per tower should be considered as an incentive which could be given to Service Providers which opt for sharing of infrastructure, especially in the urban and semi-urban areas.
- b. The fixed one time incentive could be adjusted against the License Fee payment which is due every quarter. This will act as an incentive for Service Providers to offer passive infrastructure for sharing.
- c. This fixed amount should be provided even when a tower / cellsite is shared between two operators.
- d. The fixed incentive can be arrived at through mutual consultation/ draft guidelines after consultation with all telecom operators as well as IP-I Service Providers.

EXCLUSION FROM AGR OF INCOME FROM SHARING OF INFRASTRUCTURE

- e. Income earned from sharing of infrastructure should not be included in Adjusted Gross Revenue (AGR). At present, the income earned by the Cellular Mobile Service Providers (CMSPs) from sharing of infrastructure is included in the AGR and hence Licence Fee is levied on the same.
- f. Even under the present scheme, IP-1 Service Providers set up and offer passive infrastructure for sharing and no Licence Fee is paid there on by these companies. This acts as an incentive and enables faster growth of telecom infrastructure in the country.
- g. In light of the above, we would like to submit that, in order to give a boost to Infrastructure Sharing in the telecom industry, the income earned by Cellular Mobile Service Providers (CMSPs) from sharing of infrastructure should not be included in AGR. **This policy initiative will act as a very big incentive for Service Providers to share infrastructure and will thus enable faster spread of affordable services to far-flung areas of the country.**

INCOME TAX INCENTIVES TO IP-1s

- h.** Tax incentives should be provided to Independent Infrastructure Service Providers so as to ensure that the service provided by them is attractive. The Tax benefits which are available to Access Service Providers should be extended to Independent Infrastructure Service Providers. The following measures are proposed:
- i. To extend Income Tax benefits under Section 80-IA to Independent Infrastructure Service Providers.**
 - ii. Granting Infrastructure status under Section 10-23(G) to Independent Telecom Infrastructure Service Providers as a separate entry under Section 80-I A (4).**
- i.** The Income Tax Act under Sec. 80-I A (4) extends Income Tax benefits to the telecom operators who are developing their own telecom infrastructure. This benefit should also be extended to the Independent Infrastructure Service Providers as well. Moreover, this benefit is available to developers of other infrastructure like roads, ports highways, water supply projects. The above incentives shall lower the cost of services offered by Independent Infrastructure Service Providers and would thus help in achieving the Government's goal of providing affordable telephony.
- j.** Income Tax rules allow each operator to claim depreciation benefits on their capital expenditure. Common network on shared basis would reduce overall depreciation benefits claimed by the Service Providers.
- k.** These proposals will give a thrust to Infrastructure Sharing in telecom sector and would thus go a long way in enabling faster roll-out of service in rural and remote areas.

INCENTIVES BY CIVIC AUTHORITIES

- l.** In order to facilitate Infrastructure Sharing it is recommended that Civic Authority in each state/ telecom circle should encourage Infrastructure Sharing.
- m.** However, various Civic Authorities levy very high charges while permitting the installation of new tower sites. In this regard, it is submitted that charges levied by Civic Authorities, if any, be limited to recover cost of administration and should not be driven with the objective to finance their budget deficits.

- n. Further, there is a pressing need to rationalize the taxes and levies imposed by Civic Authorities to give permission to set up sites as these levies add to the cost of services apart from the fact that the amount levied has no relation to the services performed by local bodies. It is strongly recommended that the total taxes and levies applicable to setting up of a site be considered for a reduction in case the site is shared. This will help to minimize the required number of towers and thereby improve the aesthetics of the city.
- o. It is to be noted that some Civic Authorities are charging similar taxes and levies from Service Providers even if they are sharing one single tower. In order to encourage Service Providers to share the tower, it is felt that Civic Authorities should be requested through DoT to charge such amounts from all Service Providers sharing infrastructure so that total amount charged per tower should not be more than 1.2 times of the amount being charged from individual Service Providers when tower is not shared.
- p. In this regard it is suggested that the Government and TRAI may also advise / direct all Civic Authorities across the country to **promote Infrastructure Sharing by providing incentives** to telecom operators and IP I Service Providers **by way of reduced Permission Fee and NIL levies** in cases of multiple operators sharing a site.
- q. TRAI's recommendations pertaining to above should be considered and implemented for ensuring uniform policy guidelines for all Civic Authorities in the country. TRAI recommendation states:

"Civic bodies may be requested through DOT to charge such amounts from all service providers sharing infrastructure so that total amount charged per tower should not be more than 1.2 times of the amount being charged from individual service providers when tower is not shared, instead of charging same amount of processing fee and other charges from all the operators sharing a site. Incentives in the form of processing fee and other charges will encourage passive infrastructure sharing."

OTHER INITIATIVES AND INCENTIVES FOR USING NON-CONVENTIONAL ENERGY SOURCES

- a. Government/DoT should also consider providing a subsidy by way of Service Tax reduction to those Service Providers who are sharing the infrastructure.
- b. Stamp Duties and other levies such as Permission Fee etc., should be waived off in case the site is set up by Independent Infrastructure Service Provider for sharing by multiple Access Service Providers.
- c. Also, there should be no limit on the number of operators sharing the site, and depending upon the structural safety, maximum amount of sharing should be encouraged.
- d. Another way to boost infrastructure development and sharing is by the way of promoting use of Non-Conventional sources of energy. This has also been recognized by TRAI in its following Recommendations:

The Authority recommends:

- i. ***Department of Non-conventional Energy Resources may be approached by DoT to evolve a pro-active policy framework to encourage use of environment friendly non conventional energy sources. Some of the specific measures in this regard are given below :***
 - a. ***To device a policy to promote the use of solar power and alternative fuel specifically for Telecom sector.***
 - b. ***To provide Telecom specific Advisories on available equipments, costs, sources for procurement etc to service providers.***
 - c. ***To maximize subsidies for Telecom operators considering potential of high use of such devices in telecom sector.***
 - d. ***To examine possibilities of use of other non-conventional environment friendly energy sources.***
- ii. ***DOT may evolve a scheme of subsidy per site to service providers using non conventional energy sources.***