Infrastructure Sharing in Telecom Industry: Growth of New Business Models & their Prospective Trends

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Abstract – The rationale of this paper is to study the growth and future prospects of the recent business model of infrastructure sharing in Indian telecom industry. It discusses the various forms of infrastructure sharing which include active, passive and backhaul sharing.

A study of the various passive infrastructure sharing companies in India is done. The various parameters of these industries in terms of tenancy ratio etc. are compared. A study of the various mergers and acquisitions taking place amongst the tower companies in India in past years is taken to understand the progressive trends and expected growth. The valuation of the deals over the years has been explored and the reasons for growth and slowdown are being evaluated. Conclusively various benefits of infrastructure sharing are discussed.

Keywords – passive infrastructure sharing

I. INTRODUCTION

The swift growth and development in telecommunication and mobile devices has made Indian telecom industry to expand their infrastructure. The industry has tried to keep up with the quality of services supplied with the required infrastructure development. However it has not been very easy for the telecos which has let to the emergence of new form of business models for fulfilling infrastructure requirement. Also even in the recessionary world the blooming telecom industry couldn't keep it away from the mergers and acquisitions for the betterment. There have been the biggest deals in past which have lead to vast development of the industry. The cases from Indian telecom industry reveal how the biggest of the mergers have led to immense development even during recession. A financial analysis of these companies reveals all.

II. LITERATURE REVIEW

Infrastructure is an utmost requirement to provide any service and the same goes true for telecommunication industry. The telecom companies in India generally had their own arrangements to fulfill their infrastructure needs until they realized huge investment in this sector. This lead to the emergence of new business model of infrastructure sharing in the Indian telecom industry known as the infrastructure sharing. There are various forms of such sharing which are used worldwide.

However such companies have emerged in India recently .The researches show how fast these companies have evolved in our country and the benefits they have provided to the telecom operators in form of reduced capex and opex. This also helps the operators to concentrate on their core business of attracting the customers. Earlier researches have also shown a great advantage the infrastructure sharing provides to the environment by implementing green technologies. The government thus provides financial incentives to promote such companies. The mode of accounting is different for different infrastructure models of sharing. However not all forms of infrastructure sharing are prevalent in India. Studies have shown a wide deployment of passive infrastructure sharing in India but not active. Also even during the recessionary period these companies have undergone the mergers, acquisitions and takeovers to attain more clients and enhance their business.

III. INFRASTRUCTURE SHARING IN TELECOM INDUSTRY

The telecom industry is following the trend of infrastructure sharing as a business process so as to keep their investments low and to compete for the economy of scale. There are mainly three kinds of infrastructure sharing possible and deployed worldwide.

1. Passive Infrastructure sharing is sharing non-electronic infrastructure at cell site. Passive Infrastructure is becoming popular in telecom industry worldwide. It includes the sharing of: Steel tower, BTS

shelter, Power supply, Generators, Batteries, Air-conditioners, Fire extinguishers

2. Active Infrastructure sharing is sharing electronic infrastructure.

This includes: Spectrum, Switches, Antenna, Transceivers, Microwave equipment

Spectrum-sharing concept is based on a lease model and is often termed spectrum trading. An operator can lease a part of its spectrum to another operator on commercial terms.

Frequency Sharing

Base station sharing is prospective while each operator maintains control over logical Node_B so that it will be able to operate the frequencies assigned to the carrier, fully independent from the partner operator and retains control over active base station equipment.

Radio_Network_Controller (RNC) sharing represents maintaining logical control over the RNC of each operator independently.

MSC and Routers sharing or *backbone* sharing includes sharing switches (MSC) and routers (SGSN) on the operator's fixed network.

Network Sharing where a network infrastructure is created expressly for the purpose of sharing resources.

Geographical Splitting

3. Backhaul Infrastructure Sharing

Core network elements such as switching centers, GPRS service nodes, transmission equipment and all links connecting elements of the core network.

IV. DIFFERENT PASSIVE INFRASTRUCTURE SHARING MODEL

To bring to your notice Indian telecom operators primarily use the passive infrastructure sharing. Thus in the following section shows the various models of passive infrastructure sharing deployed in telecom industry.

1. Telcos owned Tower Companies: This category consists of companies created by hiving off the tower portfolios of telcos into subsidiaries. Among operator-owned companies, while most are owned by a single telco,

Exp: Reliance Infratel and Bharti infratel

2. Independent Telecom Tower Companies jointly owned: This category consists of companies that are not owned or managed by telcos. These companies build, own and lease telecom towers to telcos. This is a fragmented segment with a large number of players. Exp: the joint venture, Indus Towers Limited (ITL), the shareholding in which is held by three telcos: Bharti Airtel Limited, the Vodafone group, and the Idea Cellular group.

3. Inter-operator tower sharing

Operators generally use bilateral arrangements to execute Inter-operator sharing of passive infrastructure. Typically, bilateral agreements are on an 'in-kind' basis, with no payments made between the parties. The two parties agree to install BTSs on each other's towers.

4. Third-party tower companies

Independent companies assume responsibility for tower deployment and maintenance, entering agreements with operators that allow them to install their BTSs on the towers. In this model, the ownership of passive infrastructure equipment lies with the tower company. The decision to outsource tower operations to third-party tower companies typically involves a strategic shift to focus on service innovation and improving customer experiences. This aspect becomes critical in highly competitive telecom markets.

− *Contract approach:* Infrastructure built in accordance to the requirements of the company as signed in the contract

- *Anticipatory approach:* Tower companies build infrastructure and then lease it.

Exp GTL, QTIL, Essar telecom

Suitability

These business models have shown varying degrees of success. Regional operators need to evaluate their strategic direction to determine which of the two suits them best.

V. TOWER COMPANIES IN INDIA

The major passive infrastructure sharing tower companies in India are:

- *Viom Networks* is a joint venture between Tata Teleservices, which owns 54 percent, and a consortium led by the Srei group.

  It has over 40,000 mobile tower sites in India and a per tower tenancy ratio of 2.4,

- *GTL Infrastructure*, after acquiring Aircel's towers, had 32,650 towers and 41,700 tenants as on March 31, 2011. But it also has a debt of Rs 10,000 crore on its books. A merger will ensure scale and higher tenancies.

- *Indus Towers*, a joint venture among Bharti Airtel, Vodafone Essar and Idea Cellular, is the market leader with about 110,000 towers.

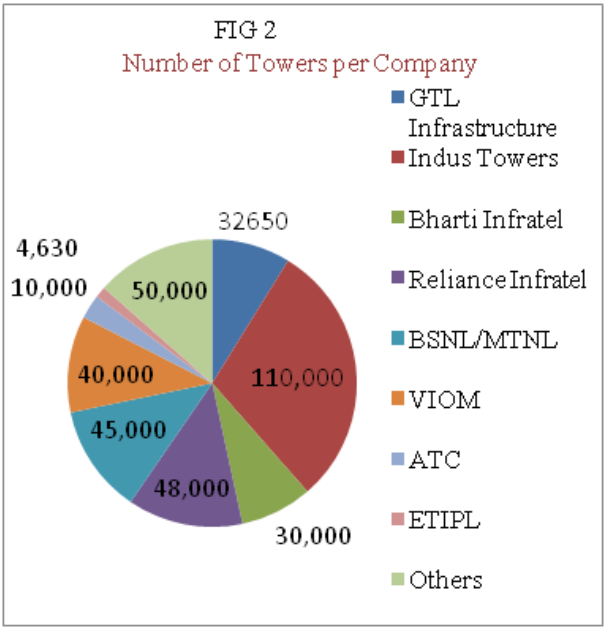
American Tower Corp. (ATC) ATC India owns or operates over 10,000 tower sites throughout the country, with an average of 1.8 tenants per tower. We have established relationships with major wireless service providers in India and now have a presence in all telecom circles in India.

TOWER COMPANY	TENANCY RATIO
GTL Infrastructure	1.2
Indus Towers	1.71
Bharti Infratel	1.5
Reliance Infratel	1.7
BSNL/MTNL	1.07
VIOM	2.4
ATC	1.8
ETIPL	1.9
Others	1.47
Total	1.63

Fig. 1

In the near future, we are also looking to provide customized collocation solutions through Distributed Antenna Systems (DAS), which support seamless in-building and outdoor wireless coverage. Globally, American Tower is a leading passive infrastructure provider in the Americas.

- *ETIPL* has a portfolio of 4,630 wireless communications tower sites, including a number of towers under construction. It has operations across 14 of the 23 telecom circles in India and has an industry leading tenancy ratio of 1.9x. TIL is an indirect wholly owned Indian subsidiary of American Tower Corporation, a leading independent owner and operator of more than 27,800 wireless and broadcast communication sites and distributed antenna systems globally.
- *Reliance Infratel*
- *Bharti Infratel*
- *Quippo Telecom Infrastructure Ltd*
- *Tower Vision*
- *Aster Infrastructure Ltd*
- *Indian Telecom Infrastructure Ltd*
- *KEC International*



Mergers and Acquisitions among the tower companies

The robust development of the telecom and mobile services in India has lead to the occurrence of various deals in the industry. Although the passive infrastructure sharing in India is very recent nevertheless there have been a significant number of deals taking place amongst the tower companies.

There have been a wide variety of deals in infrastructure industry which include deals of tower companies with other telecom operators, telecom solution providers, capital investment firms or banks etc. The following table FIG 3 enlists all the major deals of tower companies amongst them or with telecom operators

The below table entries show that a significant number of mergers and acquisition have taken place in india even during the recessionary period. This indicates the high returns are availed by the telecom operators as a result of sharing due to which there have been M & A in this sector for years now.

The number of deals was large during the years 2006 to 2010 but thereafter a slowdown has been observed in the mergers and acquisitions. The type of deal has been indicated showing a greater percentage of sales of infrastructure assets amongst the tower companies and operators. The deal between BSNL and Swan telecom was a roaming agreement.

Also the mergers have taken place between the independent tower companies which leads to an increase in the number of tenants.

For the sake of observation it can be made out from the table that in the year 2011 there were apparently no deal amongst the tower companies.

Fig. 3

M & A AMONG THE TELECOM INFRASTRUCTURE SHARING COMPANIES IN INDIA

YEAR	TARGET/ SELLER	MERGER/ ACQUIRER	TYPE OF DEAL
2012	Indian Telecom Infrastructure Ltd	Ascend telecom Infrastructure Ltd	Merger
2010	Chennai Network Infrastructure Ltd	GTL Infrastructure Ltd	Merger
2010	Aircel Ltd	GTL Infrastructure Ltd	Sale of Assets
2009	Idea Cellular	Idea Cellular Infrastructure ltd	Sale of Assets
2009	Xcel telecom Private Ltd	ATC	Sale of Assets
2009	Reliance Communication	Reliance Infratel	Sale of Assets
2009	Viom Network	QTIL	Merger
2008	Tata Teleservices	21st Century Infratel Ltd	Sale of Assets
2008	Swan Telecom	BSNL	Agreement
2007	Idea Cellular Ltd	Vodafone Essar Tower Ltd	Sale of Assets
2007	GTL Ltd	France Telecom	Sale of Assets
2006	Reliance Communication	Reliance Infratel	Sale of Assets
2006	GTL Ltd	GTL Infrastructure Ltd	Sale of Assets

VI. KEY FINDINGS:

As the number of deals in the Indian infrastructure companies have varied over the years so have the deal amount of these mergers and takeovers.

The bar graph below shows the variations in the deal amount over last five years in the infrastructure sharing industry in India. The time from when these companies prevailed consistent deals have taken place. Taking an overlook:

In 2012 the merger between Chennai network infrastructure and GTL infrastructure was a non cash merger followed by an investment of 400 crores. There have been no significant deals in 2011 however. In 2010 there had been a boom in the deals and their amounts when GTL bought the towers of Aircel for 8400 crores.

In 2010, ATC bought the assets of Xcel telecom for 800 to 850 crores. Another big deal in the year 2009 was the merger of QTIL and Tata tele services which closed at 2367 crores.

From 3006 to 2008 there had been significant deals such as that between Idea cellular and Vodafone Essar Towers Ltd

It has to be observed that only the deals amongst the tower companies and between telecom operators and tower companies have been considered.

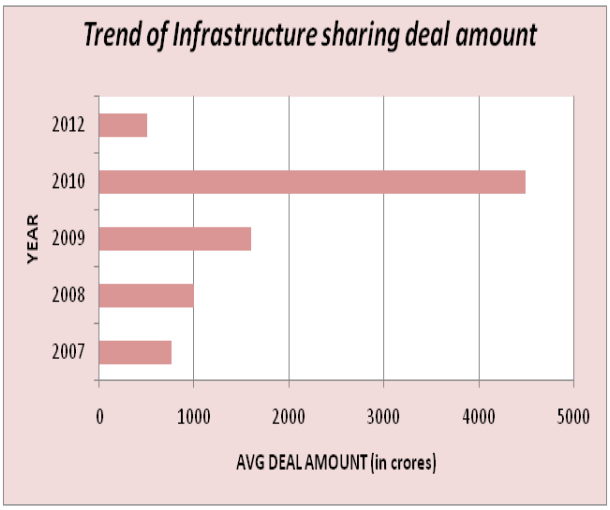


Fig. 4 : Comparison of the average amount of passive infrastructure sharing deals (only tower companies) over last five years

Benefits Of Passive Infrastructure Sharing

Reduced Capex

Telecom business is heavy on Capex, and as much as 40-60% of the Capex is utilized for setting up and managing the Telecom infrastructure By sharing infrastructure, Operators can optimize their Capex, and focus on providing new and innovative services to their subscribers.

Reduced Opex

By outsourcing the day-to-day management of your Telecom infrastructure to Infratel, your Opex costs are hugely reduced. The cost-savings can be used to provide innovative services, and improve customer satisfaction.

Reduced Time to Market

By leveraging existing Infrastructure that are deployed in active Telecom circles, a new operator can drastically cut down the time taken to begin operations. The resulting savings in Capex can then be diverted towards Marketing and promotional activities which are crucial in the initial months.

Increased Connectivity

Deployed tower infrastructure in rural and remote locations which are characterized by erratic power supply, poor access, difficult terrain and lack of adequate backup saved the hassle of operating in such conditions, and enables increase in penetration.

Highest uptime

The use of efficient processes and superior monitoring ensures minimum downtime for operators.

Cost and energy efficiencies

One of the most significant implications of towers sharing is that the reduced number of towers reduces the emissions and hence the diesel consumption. The concept of *green tower* has also come into existence.

VII. CONCLUSION

The paper clearly reflects the various kinds of infrastructure sharing worldwide and in India. Due to cost benefits attained by telecos due to sharing has lead to various mergers and acquisitions even during recession period. The *slowdown* in the deals after 2010 can be attributed to the 2G scam in the Indian telecom sector when the licences of the various telecom operators were cancelled by SC and many operators were facing trials. In spite of these hurdles the Indian telecom industry is yet to see many more such deals between the tower companies and also to avail the benefits of active infrastructure sharing which is only in nascent form in India today.

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