CHAPTER 2

INTRODUCTION TO TELECOM INDUSTRY

2.0 Telecom Service Sector in India/Tamil Nadu

The Indian telecom industry has undergone significant structural transformation since its liberalization in the 1990’s. During the last fifteen years, the industry has evolved into a multi-segment, competitive market from a small supplier-dominated market having public sector monopoly (Preethi et al., 2009).

2.1 Structural Evolution of the Indian Telecom Industry

Government Telecom and Communication policies have played a crucial role in shaping the structure of this sector over the last fifteen years.

National Telecom Policy 1994 and 1999 has contributed to the overall development and growth of this industry segment.

2.1.1 Telecom Sector in the Pre-Liberalization Era (1980-1990)

Prior to the liberalization, the public sector enjoyed monopoly in telecom industry. The entire services operation in the country was carried out by the Department of Telecommunication (DoT), a public sector entity established in 1985. Before the entry of the private players, the telecom services were provided by three public entities viz. DoT, MTNL and VSNL. While MTNL primarily looked after the operation of basic telephony services in Delhi and Mumbai, VSNL provided international services in India. DoT looked after basic telephony operations in regions other than Delhi and Mumbai.
2.1.2 Telecom Sector in the Post-Liberalization Era

Private sector participation was made possible by NTP 94 and 99. Liberalization process began in 1992, with the unbundling of the domestic basic services and the domestic VAS. The National Telecom Policy (NTP) 1994, which endeavored to build a world-class telephone service infrastructure in India aimed at providing telephones on demand, enabled the entry of private players in the provision of basic services and was considered inevitable to bridge the resource gap.

The need for independent regulation had risen with the entry of private players. Also, to fulfill the commitments made when India joined the World Trade Organization (WTO) in 1995, the Telecom Regulatory Authority of India (TRAI) was established in 1997 to regulate telecom services including fixation/revision of tariffs. The establishment of TRAI was a positive step in terms of separation of regulations from policy making and operations, which continued to be under the purview of the DoT.

Further, in 1998, the Government also declared the policy for Internet Service Provision (ISP) by private operators and the Global Mobile Personal Communications by Satellite (GMPCS) was also opened up for the private players.

The private players had been allowed to participate in many segments and the results of privatization had not been entirely satisfactory. Thus, a New Telecom Policy (NTP-99) came into effect from April 1, 1999 which provided a major fillip to private sector participation in this industry but also laid down the path for significant development. The NTP-99 allowed operators providing cellular and basic service to migrate from a fixed license fee regime to a revenue sharing regime to make the operations financially viable. Another notable provision of the Act had been the entry of multiple operators in contrast to the policy of duopoly practiced earlier. This not only increased
competition but also assisted in attracting new investments and augments their subscriber base. The Act also made permitted interconnectivity and sharing of infrastructure among various service providers within same areas of operation, it allowed both voice and data traffic by service provider, it opened up national long distance (NLD) and international long distance (ILD) services to competition. Thus, the NTP 1999 can be viewed as the genesis of the cellular revolution being witnessed in India.

As a predecessor to corporatization, two new departments’ viz. Department of Telecom Services (DTS) and the Department of Telecom Operations, were carved out of DoT, to separate the service provision and operational functions of DoT. Later in 2000, DTS was corporatized and renamed as Bharat Sanchar Nigam Ltd (BSNL), and thus the functions of the incumbent service provider were separated from that of the policy maker. DoT is now responsible for policy-making, licensing and promoting private investments in both equipment manufacturing and services. Subsequently in 2002, even VSNL was privatized and its monopoly in ILD services was terminated (from March 31, 2002). The historical evolution of the industry is depicted in Figure 16.

**Figure 16: History of Indian Telecom Industry**
2.1.3 Current Structure of the Indian Telecom Industry

Currently, both public and private sector players are actively catering to the rapidly growing telecommunication needs in India. Private participation is permitted in all segments, including ILD, DLD, basic cellular, internet, radio paging, et al. The broad structure of the telecom industry (in terms of service providers) is depicted in Figure 17 below:

![Figure 17: Structure of the Telecom Industry in India](image)

**Public Sector**

After the privatization of VSNL in 2002, only two government organizations, MTNL and BSNL operate in India and provide various services. As stated earlier, MTNL operates in Delhi and Mumbai and BSNL provides services in the rest of the country.

**Private Sector**

After liberalization, foreign companies entered India with collaboration to provide mobile telephony. They enhanced the retail presence with superior customer service, VAS and gained substantial market share. Private operators have played a very crucial role in the growth of the industry, primarily in the mobile services. After the introduction of NTP-99, the contribution of private players has witnessed rapid strides. While this sector is instrumental in providing both fixed line as well as wireless services, it is mainly active in the wireless segment.
**Change in Market Share**

The subscriber base of the public as well as private players has grown rapidly post-liberalization. The subscriber base (TRAI, 2011) grew from around 18.68 Million for the year ending in 1998 to 827 Million for the year ending in 2011 (Figure 18) and a significant proportion of this growth has emanated from the private segment. In addition to NTP-99, initiatives such as allotting third and fourth cellular licenses, shifting to a unified access licensing regime, execution of calling party pays (CPP) regime, making incoming calls free drew significant growth in the cellular subscriber base.

![Figure 18: Growth of Telecom Industry in India](image)

**2.2 Segments in the Telecommunication Industry**

The telecom services in India can be divided into two broad segments, wire line services and wireless services. The wire line segment, which accounted for a major share at the start of the current decade, has witnessed a decline in its subscriber base in the last 5 years. Other telecommunication services such as internet services, broadband services, VSAT, have also evolved gradually and have become an integral part of the Indian telecom industry.
The industry classification is as follows:

- Wire line services (Fixed line telephone and Broadband)
- Wireless service: [Mobile Phone - GSM (2G, 3G and 4G) and CDMA (1x and HSD – Wireless Data Cards)]
- Internet services
- Public Mobile Radio Trunked Services (PMRTS)
- Global Mobile Personal Communication by Satellite (GMPCS)
- Very Small Aperture Terminals (VSAT)
- Mobile Value Added Services

2.3 Challenges in the Telecommunication Industry in India

The industry is currently facing huge challenges owing to shortage of growth in traditional services. Emerging markets are also seeing decreasing growth rates and lower voice ARPU (Average revenue per customer). On the other hand mobile data is the new frontier, but while volumes of data and applications are exploding, revenues are decreasing and competition is increasing. Service providers need to find new revenue streams in VAS and enterprise services. There is an opportunity around cloud computing. The operators need to transform to attract customers and also take the benefit from the mobile Internet. With a move to 3G networks and a resulting simplification there is a future for vendors and Information Technology (IT) service providers. All this will positively impact the Indian economy.

The market in India is at an inflexion point following the arrival of 3G. The hyper-competitiveness is likely to flatten out in terms of subscriber growth over the next two
years. The proliferation of smart devices and availability of high speed data access will result in new service consumption patterns. Operators seeking to monetize this shift will need to support a broader application and services portfolio with better subscriber segmentation capabilities. We have to wait and see the impact of 3G on the Indian landscape.

With fierce competition and concentration of the subscribers and the network in the urban and semi urban markets, the mobile phone operators are going through a tough phase, lack of significant growth in the customer base, drop in revenue per subscriber, high cost of project rollout, high capital deployment, increase in cost of manpower and other inputs is leading to the low profit regime.

The cost of rolling out networks in rural areas which would expand the customer base significantly but would not provide for Return of Investment (ROI) in the short/medium term will be an impediment to meet the capital-debt repayment. The shortage of spectrum is yet another challenge to the existing operators. The license regime has favored a few and has resulted in imbalances. The auctioning of 3G licenses by the government has resulted in huge payouts by the operators for acquiring licenses. Lack of revenue streams from 3G rollout, cost of technology up-gradation, procurement of equipment has increased the cost of operations in terms of license fee, capital expenditure and operational expenses.

The organizations need to quickly see revenues flowing in on the 3G front - failing which many operators will see their margins falling and render its network expansion plans economically unviable. This will hurt growth of services in the rural markets and also shrinkage of the jobs.

The perceived crisis therefore can be classified as follows:

- Steep increase in license fee owing to 3G auctions
• High cost of capital deployment for roll out of new technologies and expansion in rural markets

• Cost of equipment are on the rise

• Revenue per subscriber is dropping significantly

• Incremental growth of subscribers not very significant

• Shortage of skilled and experience manpower to address the growth and technology needs

• Cost of Input including manpower cost is on the rise

• Too much competition owing to too many players resulting in crowding, price wars and hence lower revenues

• Expansion of highways and other road infrastructure is resulting in damaging to the telecom infrastructure that has been laid in terms of optical fiber cable (OFC) etc., resulting in network outages

• Broadband penetration in India is still very low when compared to the rest of the world, but catching up slowly in India and in Tamil Nadu in particular

• Education with specific focus is yet to gain prominence considering the fact that it has opened up to privatization in 1994. Shortage of skilled and trained manpower is a nightmare in some segments, resulting in the cost of training

Hopefully the NTP 2012 will augur well for the industry and for the subscriber at large. The industry contributes significantly to the job market, the GDP and the economy and hence must be categorized as an Infrastructure business for gaining special
status. By overcoming the perceived crisis, organizations will leap frog to the next level in the years to come.

2.4. Telecom Majors in the State of Tamil Nadu

- BSNL: Government owned – Public Sector Organization
- Bharti Airtel: Bharti Group in tie up with Singapore Telecom is a leading player in the country with pan India presence
- Reliance Communications: A Reliance Group entity enjoys a pan India presence
- Vodafone: Vodafone India is a subsidiary of Vodafone Group Plc and is a multinational company
- TATA Teleservices- Tata Communications is a wholly owned enterprise of the Tata Group and provides wire line services and Tata Group in partnership with Docomo Japan has an independent entity for providing wireless services
- Idea Cellular- Is an Aditya Birla Group company and is among the leading players
- Aircel: The majority stake holder of Aircel is the Maxis group from Malaysia
- MTS Mobile: Systema from Russia in partnership with Shyam telecom is a recent entrant in the market
- Videocon Telecom: An Indian business house with diverse interests has also joined the bandwagon recently for providing mobile telephone services in India
The current market share (TRAI, 2011) of the companies in India is depicted in Figure 19.

Figure 19: Pan India Market Share of Telcos as on March 2011

Tamil Nadu State was earlier classified under two licenses:

1. Chennai Metro
2. Rest of Tamil Nadu

Chennai as a metro enjoyed the same status as of Mumbai, Delhi and Kolkata. However, the Chennai was ranked third amongst the four metros on the basis of mobile phone penetration, size of network, and number of customers etc as per TRAI reports. Rest of Tamil Nadu on the contrary has grown in size and is ranked amongst the leading circles in terms of mobile phone penetration, customer base, revenue per subscriber etc as per TRAI reports. Subsequently, the licenses have been merged and now constitute a single license for the whole State. The Chennai metro and Rest of Tamil Nadu provides for more than 4200 direct employment and in excess of 10,000 indirect employees.

The subscriber base of all the operators put together in Chennai and ROTN would be approximately 90 million as on 1.12.2011 with combined revenue around Rs 100 Billion p.a. The State has progressed significantly over the years and the
manufacturing and services segment have been steadily expanding and contributing largely to the growth and success. This rapid growth has been possible due to various proactive and positive decisions of the Government and contribution has both by the public and the private sector. The rapid strides have been facilitated by liberal policies of the Government that provide easy market access for equipment and a fair regulatory framework for offering services to the consumers at affordable prices.

2.5 Telecom Policy Reforms in India

India, like many other countries of the world, has adopted a gradual approach to reforms through selective privatization and managed competition in different segments. To begin with, India introduced private competition in value-added services in 1992 followed by opening up of cellular and basic services private competition.

One way of looking at the welfare gains to subscribers is to study the trend in prices for the services. Countries do differ among themselves in respect of their economic structure, policies and technological changes. The Indian economy has undergone structural changes and is slated to grow at 8-9% in the next decade. The production of merchandise such as agriculture and manufactured products are contributing a smaller share of economic output, in comparison to the services segment. The service sector in India today accounts for more than 48% of economic activity and is likely to grow at the rate of 8% per annum.

A majority of employees are engaged in the creation, processing and distribution of information. It is very important for the country to make comprehensive and forward looking telecommunications policy which creates a suitable framework for development. The availability of infrastructure for electronically transferring and
accessing information is perceived as critical for hastening the realization of economic, social and cultural benefits as well as for conferring competitive advantage. The Government of India (GOI) has recognized that provision of world class telecommunications infrastructure and information is the key to rapid economic and social development of the country.

2.5.1 Key Issues of Policy
As stated above, the new policy provides the framework within which the sector in the country shall function and focuses on creating an environment, which enables continued attraction of investment and allows creation of a world class telecommunication infrastructure. The primary issues are listed as under:

- Interconnection
- Tariff Issues
- Convergence Issues
- Technology Issues (Radio Spectrum Allocation and Research and Development)
- Quality of Service
- Consumer Welfare
- Competition
- Regulatory Issues

2.5.2 Regulatory Framework
One characteristic of India's reforms - and cause of much of the problems attending it - is that major reform measures like private entry into services were attempted without having a well thought out overall strategy or even a bare road map as a guide.
Regulatory reform can be seen as a two-step process.

- The establishment of an independent regulator
- The regulatory authority implementing reform on the basis of its policy initiatives

Since its establishment, the regulator in India has taken a number of initiatives pertaining to tariffs, interconnection charge and revenue sharing, and has provided its recommendations on license conditions/license fee for certain service segments. TRAI has also been vested with powers to frame regulations necessary for its functioning, including for the levy of fees and charges for services. Licensing Powers remain with the Government apart from the policy making function.

The Telecom Regulatory Authority of India (TRAI) was set up in March 1997 as a regulator. The TRAI’s functions are recommendatory, regulatory and tariff setting in telecom sector. Telecom Disputes Settlement and Appellate Tribunal (TDSAT) came into existence in May, 2000 as an adjudicating authority.

2.5.3 Foreign Direct Investment Policy

Foreign Direct Investment (FDI) was permitted in this sector beginning with the manufacturing segment in 1991 - when India embarked on economic liberalization. The foreign direct investment was Rs 54 billion during the quarter ended June 30, 2011. The country has received a cumulative total of Rs 370 billion as FDI in telecom during the period April 2008 to June 2011 (FDI Policy). An attractive trade and investment policy and lucrative incentives for foreign collaborations have made India one of the world’s most attractive markets for the telecom equipment suppliers and service providers.
2.6 Telecom Sector in India: Path Forward

The process of change is often volatile and responsive to intervention and global circumstances impacting it. In such an inherently dynamic situation it is convenient to assume that cross-country experiences incubate the most recent seeds of change. This is because countries at various stages of development encapsulate developmental experiences that occur with the passage of time. The agents of change, as observed from international perspective, have been broadly categorized into economic structure, competition policy and technology. With the advancement and convergence of technology, customers would benefit substantially. The education, medical and the services sector will stand to gain by this revolution (Planning Commission of India, 2011).

2.6.1 Economic Structure

It has been observed that growth in the number of new telephone subscribers has far exceeded the growth in the global economy in the last twenty years. This shows that aggregate growth alone does not determine expansion and there may be need to look at composition of growth as well. However, influence of economic structure on expansion (or for that matter on achievable level of tele-density) does not find explicit consideration in today’s literature on economics as much as the other two factors, i.e., competition and technology. The aggressive expansion of telecommunications infrastructure in far flunked territories and remote locations would unleash latent economic energies and market forces, which will erode the very foundation of perceived lack of profitability of rural investment among the private investors. Once this is achieved, a wealthier and more equal society full of creativity, innovation and competition will be established.
2.6.2 Telecom and IT
The vision of telecommunication is a vision of information society built on an edifice where IT and telecommunications merge. Rapid technological convergence has already implied a symbiotic overlap between the development strategies of IT and telecommunications that share a common hardware platform. Finally, development of human resources through IT education, training and skill development is fundamental to the whole process. More and more schools, colleges and universities must develop a curriculum to address the industry needs. Vocational skill development is necessary for providing an un-interrupted supply of skilled and trained manpower.

2.6.3 Competition with Privatization
World over, there is an observable trend of growing number of State-owned incumbents being privatized. It has been observed that countries with a privately owned incumbent operator account for 85 per cent of the revenue. Those with fully State-owned operators, in mobile as well as fixed lines, account for just two per cent. It has been suggested that privatization with competition works better than privatization without competition. Notwithstanding the merits of the above conclusions whatsoever, it can be argued that privatization of existing State-owned incumbent operator is not the only way to promote private investment.

2.6.4 Technology Trends
Broadly speaking, technologies of mobile telecommunications and Internet are going to set the contours of further technological progress in the future. The most recent initiative aims at convergence of voice and data received from multiple sources, both web based and real time video streams, in mobile handheld devices. The revolution will spread among the masses and will spur innovation, entrepreneurship and growth. The benefits will spread among all, the rich and the poor, the young and the old, the
men and the women, the organized and the unorganized and the government and the governed.

2.7 Perceived Job Opportunities at the Marketplace

The job trends in this industry have shown phenomenal growth in the last decade. With so many new entrants and existent players expanding their operations, the revolution in India has been quite exceptional and a big employment generator. The government has issued new licenses and allowed new companies to commence operations. This has led to more and more jobs being created in this domain.

With the mushrooming of the number of operators, we have witnessed significant growth in the infrastructure, subscriber base and the revenues over the past 5-8 years. There is a hiring spree, since the organizations had to quickly launch and roll out their services. Widespread job hopping for higher salary, bigger roles etc., was the buzz word until recently. Employee retention has become a very big challenge for the existing operators who have their operations running since 1996 or 2001.

This steep growth compelled with the entry of new organization in this space has created numerous job opportunities and the job hoppers had a free run by maximizing on the upward trends. With the entry of new operators, the existing skill shortage in the labor market resulted in steep increase in salaries to woo new employees or to hold on to existing ones. Organizations were taken to ransom in some situations when job hoppers threatened to leave organization without giving due consideration to their present job, position and commitments. Thus, the growth over the last decade has created more jobs and also pushed employees to keep
considering alternative job options at the market place. Therefore, it could be safe to assure that the pull factors outweighed the push factors over the last decade.

Since 2011, things have slowed down owing to the stagnation of the economy as a whole. The 2G scam and the possibility of NTP 2012 giving way for consolidation in the form of acquisition and merger, exit of small organizations since it is not becoming viable to expand operations etc. All these factors have resulted in the right sizing and downsizing of manpower to keep cost under check and also to improve the productivity of the workforce. This stress has resulted in the slowdown of hiring and preventing job hoppers from moving out in quick succession. The drop in revenue of the operators owing to the drop in ARPU has also hurt the working class, in terms of increasing their pay package and looking at accelerated growth prospects etc. The slowdown of the creation of jobs has resulted in the behavioral changes of job hoppers and their ability to generate alternate job options at regular intervals.

In view of the above, employees are now currently looking at job security ahead of all other factors owing to the changed scenario. Wide spread downsizing by the operators i.e., in-voluntary turnover trends in the last 2-3 years is not part of the study and hence not being discussed further. In fact, there is a dearth of suitable talent in this field that has been the major reason for high salaries. The experts believe that talent crunch will push salaries even further. With newer technologies such as 3G and 4G being launched, there is a demand for qualified, experienced and skilled professionals with knowledge and technical know-how in these domains. Thus, the sector is on a look out for talent to suit its ever growing demand.

The new players are looking for experienced hands to set up their businesses and the old players are trying to retain their best talent to be able to prosper well. This tussle has borne good fruit for the job seekers in this domain that are getting
unbelievable compensation packages with just a few years of experience under their belt.

Telecom companies have well tapped the potential of the urban and are now targeting the rural markets where the potential is high. With customized packages and competitive prices, companies are falling over each other to gain foothold in the rural markets too. With this, the demand for manpower is set to go even higher. The new players are trying to attract talent at 30-40% higher salaries. This has also led to poaching of talent at middle and top levels while robust hiring by the employers at the entry level. There has been considerable campus hiring by companies to recruit freshers for jobs.

The talent crunch is felt in the Sales and Marketing functions and also in the areas of Technology including in HR, Finance and Customer Service and there is a shortage of talent and organizations are finding it difficult to hire the right kind of people. Thus, telecom jobs are the buzzword in the Indian economy today. From being monopolized by the government a few years ago, to opening it up to private players, the telecom story of India has come a long way. Telephone, whether fixed landline or mobile, has become a necessity today instead of a luxury as it was considered a few years ago.

2.8 Attrition in the Indian Telecom Industry

The industry has been expanding and jobs mushrooming by the minute and hence it has all boiled down to attracting, managing and retention of talent. There is a scarcity of qualified and trained manpower to meet the growing needs.

The Indian economy has been growing at a sturdy pace of 8% annually and has surely placed an enormous strain on the existing talent pool in terms of various job
opportunities. Conducive business environment, favorable demographic outlook and the political stability enjoyed by the country have contributed to the growth, resulting in the increase in job options (Slideshow, 2011).

Shortage of skilled manpower has caused deep concerns in this space and with increasing workforce complexity the challenges have been mounting. The game changer, attrition in an organization seems to decide outcomes. The changing paradigms, the cost of employee turnover, employee perspectives and new retention methodologies are worth studying for any practicing HR manager. Liberalization, Globalization and Privatization in the telecom space has provided job hoppers with multiple options.

With more and more players at the marketplace, the pressure in terms of attracting and retaining the right talent is a challenge. The employment scenario is very promising and is creating employment opportunities and adding more and more people to its workforce. There is a huge demand for trained and qualified engineers and other professionals.

Figure 20: Possible Reasons for Attrition
The trends indicate the attrition rates of 20 to 30 percent and hence the HR’s primary strategic function is to retain the talent and focus on employee engagement. With the launch of 3G and 4G projects, the organizations are going for high skill recruitments. There is a huge demand for new projects, setting up of new services, expansion of coverage areas, network installations, maintenance etc., are providing more and more employment opportunities. Job hoppers are cashing in the current scenario. Figure 20 depicts the current trends and reasons for attrition.

This period that witnessed such phenomenal growth also saw the alarming trend of employee turnover assume disturbing proportions and job hopping become a common phenomenon. These high growth sunrise industries were more affected by attrition because they were largely in the knowledge economy and the people are the primary resources in this scenario. High employee turnover not only meant increased cost of operation but also increased recruitment and training cost on the employees. When an employee leaves the organization, the turnover cost can start from the termination to vacancy, re-hiring and training costs. The loss of talent and stability has its own repercussions for organizations.

Today, the increasing number of job opportunities and dearth of quality talent has opened up plenty of opportunities for talented professionals. This has made it easier for people to quit one job and join another without much trouble. Experts observe that job hopping is quite prevalent at the junior and mid-level professionals as the desire for better profile and better compensation is higher at these levels. Many consider that moving from one firm to another is the easiest way to grow up in career.