CHAPTER 4

THE INDIAN TELECOM INDUSTRY: STATUS ANALYSIS

This chapter presents a comprehensive note on the path of growth and trends and transitions in the Indian Telecommunication scenario. It begins with an overview of the service providers and the types of services provided by them. The chapter then moves on to examine the status of the Indian telecom industry by providing vital figures and statistics on various economic indicators in the telecom sector – pre and post privatization, the role of the private sector, and the government policies that had initiated the communication revolution in the country. Further it covers a section to analyze the growth of mobile telecom in India. It also presents a note on the Mobile Service Providers in Chennai, with a comprehensive picture of their respective strategic competencies.

4.1 INDIAN TELECOM INDUSTRY – AN OVERVIEW

There are two types of service providers in the Indian Telecom Industry:

1. Basic Service Providers
2. Value added Service Providers

4.1.1 Basic Service Providers

Basic service providers are those who provide mainly voice communication. The subscriber’s connection to the telecom network is called a Direct Exchange Line (DEL) and people use it for voice communication. Basic services can be differentiated as per call destination into domestic and international. Domestic calls, both local and long-distance are routed through cables/wireless links. International calls are routed overseas, mainly through satellite links. The
international carriers of various nations liaison with one-another to ensure smooth operations and efficient call transfer. Major global carriers, mainly private operators from the developed nations, determine international call tariffs. Revenue sharing agreements exist between various international carriers.

4.1.2 Value added Service Providers

Value added service providers are those who provide services, such as cellular telephony, paging, e-mail and VSAT network, which provide the subscriber greater ease of communication and enhance the utility of basic services network.

The following are the various types of services provided by both the service providers put together:-

- Telephone Services
- NSD / ISD Services
- Computerized Trunk Services
- Pay Phones
- National & International Leased Lines Circuits
- Telex
- Telegraph Services (Manual & Automatic)
- X-25 based Packet Switched Data Network (INET)
- Gateway Packet Switched Data Services (GPSS)
- Gateway Electronic Data Interchange Services (GEDIS)
- Gateway E-Mail and Store & Forward FAX Service (GEMS-400)
- Concert Packet Services (CPS)
- Satellite-based Remote Area Business Message Network
Electronic Mail
Voice Mail
Audio-Text
Radio Paging
Cellular Mobile Telephone
Public Mobile Radio Trunked Service
Video-Tex
Video Conferencing
V-SAT
Internet
ISDN
INMARSAT Mobile Service
INMARSAT Data Service
Home Country Direct Service
Intelligent Network (IN) Service

4.2 THE INDIAN TELECOM INDUSTRY: HISTORICAL PERSPECTIVE

The Indian Telecom industry has witnessed several events since the day on which the first operational landline was laid in 1851. For about 140 years afterwards nothing much happened in the industry to excite the world around, till the liberalization initiative in 1991, followed by telecom reforms that lead to the announcement of the Telecom policy in 1994. The Table 4.1 shows the important dates in the history of the Indian Telecom Sector.
Table 4.1 Important Dates and Events in the Indian Telecom Industry

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1851</td>
<td>First Telephones in India</td>
</tr>
<tr>
<td>1943</td>
<td>Nationalization of telephone companies</td>
</tr>
<tr>
<td>1985</td>
<td>DoT was created</td>
</tr>
<tr>
<td>1986</td>
<td>Creation of MTNL and VSNL</td>
</tr>
<tr>
<td>1991</td>
<td>Telecom equipment liberalized</td>
</tr>
<tr>
<td>1994</td>
<td>Licenses for paging</td>
</tr>
<tr>
<td>1994</td>
<td>Telecom Policy announced</td>
</tr>
<tr>
<td>September 1994</td>
<td>Guidelines for private sector participation in basic services</td>
</tr>
<tr>
<td>November 1994</td>
<td>Cellular licenses issued</td>
</tr>
<tr>
<td>January 1995</td>
<td>Issue of tenders for 2nd operator in basic services</td>
</tr>
<tr>
<td>August 1995</td>
<td>VSNL launches internet services</td>
</tr>
<tr>
<td>January 1996</td>
<td>TRAI formed</td>
</tr>
<tr>
<td>February 1996</td>
<td>Supreme court allows multiple players in Basic services</td>
</tr>
<tr>
<td>October 1999</td>
<td>New Telecom Policy announced</td>
</tr>
<tr>
<td>October 2000</td>
<td>BSNL formed</td>
</tr>
<tr>
<td>December 2001</td>
<td>33 Licences to private palyers in Basic services</td>
</tr>
<tr>
<td>February 2002</td>
<td>Disinvestment of VSNL</td>
</tr>
<tr>
<td>May 2002</td>
<td>Bharti offers ILD Services with sharp cuts in tariffs</td>
</tr>
<tr>
<td>September 2002</td>
<td>TRAI decides ‘forbear’ from regulating cellular tariffs</td>
</tr>
<tr>
<td>March 2006</td>
<td>WPC set subscriber thresholds for GSM and CDMA operators for spectrum allocation</td>
</tr>
<tr>
<td>March 2007</td>
<td>9 distintct operators had been allocated GSM spectrum. Out of these, only Bharti has pan-India presence</td>
</tr>
<tr>
<td>August 2007</td>
<td>Subscriber thresholds were revised by TRAI as operators could support more subscribers with lower spectrum as compared to WPC allocation</td>
</tr>
<tr>
<td>January 2008</td>
<td>Govt. of India allocated start-up spectrum to all prior licenses awaiting spectrum. These include Aircel (14 circles), Idea (2 circles), RComm (14 circles) and Vodafone (6 circles)</td>
</tr>
<tr>
<td>January 2009</td>
<td>TRAI plans to introduce MNP on a pan-India basis</td>
</tr>
<tr>
<td>January 2011</td>
<td>MNP implemented</td>
</tr>
</tbody>
</table>
4.3 GROWTH OF THE INDIAN TELECOM SECTOR

The study on the growth of the Indian telecom sector is presented under two heads:

1. Indian Telecom Industry – Pre privatization
2. Indian Telecom Industry – Post privatization

4.3.1 Indian Telecom Industry – Pre privatization

The Indian telecom sector like any other infrastructure sector was owned and controlled by the Government of India, since independence. The nationalization of the telecom companies to form Post, Telephone and Telegraphs in 1943 was an important milestone in the history of Indian telecommunications. There was a gradual growth during the five-year plans in the sector and the entire sector was brought under the control of the Department of Telecommunications (DoT) in 1985.

The status of the telecom sector for the period 1993-94, which is stated as the year of the monopoly reign, is as follows:

Table 4.2 Status of the Indian Telecom Industry in 1993-94

<table>
<thead>
<tr>
<th>Items</th>
<th>Unit</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipped Capacity</td>
<td>in ‘000s</td>
<td>9795.17</td>
</tr>
<tr>
<td>DELs*</td>
<td>in ‘000s</td>
<td>8025.6</td>
</tr>
<tr>
<td>Waiting List</td>
<td>in ‘000s</td>
<td>2496.8</td>
</tr>
<tr>
<td>Registered Demand</td>
<td>in ‘000s</td>
<td>10522.4</td>
</tr>
<tr>
<td>Metered Calls</td>
<td>In crores</td>
<td>4671.8</td>
</tr>
<tr>
<td>Call per DEL</td>
<td>in ‘000s</td>
<td>52.88</td>
</tr>
<tr>
<td>Faults Registered (Per hundred stations per month)</td>
<td>numbers</td>
<td>18.3</td>
</tr>
</tbody>
</table>

* DEL – Direct Exchange Lines
The telecom policy announced in 1994 significantly changed the Indian Telecom scenario. The Cellular Service providers broke the monopoly in the sector initially, with the government issuing licences to private players to take part in contributing towards linking the country through mobile network.

The sector started experiencing tremendous growth from this period onwards, not only in terms of number of lines provided, but also in terms of investments, revenue and employment. This period of transition is analyzed in detail in the following section.

4.3.2 Indian Telecom Industry – Post Privatization

India is perceived to have a special comparative advantage in IT and IT-enabled services. However, sustaining this advantage depends critically on high quality infrastructure. The telecom sector has witnessed the impact of major reforms since 1994, when the government liberalized the sector. The fast expansion of the telecom network is a consequence of friendlier economic environment created by positive policy thrust for promoting private investment, including foreign direct investment in private sector enterprises.

The Indian Government played a major role in effecting the transition in the telecom sector as an initiator of reforms. When the reformists saw a need for increased investment in the infrastructure sector for a comprehensive economic development, they thought it necessary for liberalizing the licensing structure and enabling the private entry into the sector, thus demonopolising the sector. The two major policy reform announcements made by the Government of India that lead to the development of communication infrastructure in the country are:

1. National Telecom Policy (NTP 1994)

2. New National Telecom Policy (NTP 1999)
National Telecom Policy (NTP 1994)

The liberalization reforms initiated in 1991, followed by Eighth Plan (1992-97), objectives to open value added services in the telecom sector for private sector, necessitated a need for a well-laid operating guidelines for the sector. This led to the announcement of National telecom Policy (NTP) 1994. This was one of the major initiatives on the part of the government, in support of the liberalization and privatization reforms for boosting private entry and foreign investment into the country. The following were some of the specific objectives of the NTP 1994 based on the broad objectives of providing affordable and accessible means of communication for all.

1. To achieve installation of 9.5 million additional Direct Exchange Lines (DEL) by 1997.
2. To achieve “Telephone on Demand” by 1997.
3. To achieve a target of 1 PCO (Public Call Office) for 500 units of population by 1999.
4. Every village to be provided by at least one PCO by 1999.

To focus on the objectives, the following were the policy decisions taken by the Government of India, on the licensing and operational front.

- The basic premise on which competition has been introduced is that every circle will have one private operator apart from the existing public sector service providers in the fixed line segment, and two private operators for cellular. The public sector players had the option to become the third cellular operator in the future.

- The private players were invited to operate in both basic and cellular telephony. To facilitate licensing, the nation was divided into 20 telecom circles for basic and 21 circles for cellular telephony.
As per the terms of license agreement, private operators have to provide a minimum of 10 percent Direct Exchange Lines (DELs) as Village Public Telephones (VPTs).

To set up an independent regulatory authority to monitor and regulate the operations of the players, based on the terms of licensing.

The following were the achievements in the Indian Telecom Sector as a result of the announcement of NTP 1994:

- An independent telecom regulator called TRAI (Telecom Regulatory Authority of India) was formed in January 1996.
- Eight licenses were issued for Cellular services initially in the 4 metro cities in 1994. Subsequently in 1995, 34 licenses were issued to 14 companies to operate in 18 circles. There were about 13.5 lakh cellular phones in the country on December 30, 1999.
- As on September 1999, the PCOs in the country were at a ratio of 1:453, on all India average bases.
- Out of 6 lakh villages in the country 3.4 lakh were provided with VPTs as on December 1999.

Though NTP 1994 was hailed as an initiator of privatization in the economy, it was criticized on the following grounds:

- It lacked focus, since it sought to achieve a huge task in minimum period of time and ended up not achieving the targets objected.
- There was utter confusion as to licensing in the basic services, with one bidder dominating the whole scene, subsequently saw the other players filing a case in the supreme court for recommending multiple entry.
• It was also affected by huge resource and finance crunch, due to improper planning and implementation.

• The powers of operation of the regulatory authority were not clearly defined, so DoT and TRAI ended up in legal disputes to be resolved by the court.

The above criticisms made it essential for the Indian Government to announce a new telecom policy with a better framework of licensing, regulatory and promotional operations to develop the Indian Telecom Sector. This paved way for the announcement of the New National Telecom Policy (NTP) in 1999. Better focused objectives of this policy accelerated the pace of growth of telecom network in the country, after 1999.

**New National Telecom Policy (NTP 1999)**

The New Telecom Policy (NTP) announced in 1999 modified the NTP 1994 to take into account the far-reaching technological developments taking place in the telecom sector globally and to implement the Government’s resolve to make India a global IT superpower. NTP 1999 also seeks to solve problems arising out of the implementation of NTP 1994.

The objectives of the NTP 1999 are

1. Access to telecommunications is of utmost importance for achievement of the country's social and economic goals. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the telecom policy.

2. Strive to provide a balance between the provision of universal service to all uncovered areas, including the rural areas, and the provision of high-level services capable of meeting the needs of the country’s economy.

3. Encourage development of telecommunication facilities in remote, hilly and tribal areas of the country.
4. Create a modern and efficient telecommunications infrastructure taking into account the convergence of IT, media, telecom and consumer electronics and thereby propel India into becoming an IT superpower.

5. Convert PCO’s, wherever justified, into Public Teleinfo Centers having multimedia capability like ISDN services, remote database access, government and community information systems etc.

6. Transform in a time bound manner, the telecommunications sector to a greater competitive environment in both urban and rural areas providing equal opportunities and level playing field for all players.

7. Strengthen research and development efforts in the country and provide an impetus to build world-class manufacturing capabilities.

8. Achieve efficiency and transparency in spectrum management.

9. Protect defense and security interests of the country.

10. Enable Indian Telecom Companies to become truly global players.

In order to achieve the above objectives, the following targets were fixed:

1. Make available telephone on demand by the year 2002 and sustain it thereafter so as to achieve a teledensity of 7 by the year 2005 and 15 by the year 2010.

2. Encourage development of telecom in rural areas making it more affordable by suitable tariff structure and making rural communication mandatory for all fixed service providers.

3. Increase rural teledensity from 0.4 (in 1999) to 4 by the year 2010 and provide reliable transmission media in all rural areas.

4. Achieve telecom coverage of all villages in the country and provide reliable media to all exchanges by the year 2002.

5. Provide Internet access to all district head quarters by the year 2000.
6. Provide high speed data and multimedia capability using technologies including ISDN to all towns with a population greater than 2 lakhs by the year 2002.

The following are the policy decisions advocated to achieve the above objectives and targets in a smooth way.

- In order to separate the service providing from the policy making function of the DoT, two separate departments were formed. Department of Telecom Services (DTS), to provide service and Department of Telecom Operations (DTO), to take care of operations. DoT would take care of the policies, treaties and agreements in the Telecom Sector. DTS and DTO were subsequently corporatised to form Bharat Sanchar Nigam Limited (BSNL), the presently functioning government sector service provider.

- In the basic services segment, multiple players were permitted to operate in a telecom circle, as per the Supreme Court recommendations and also met the investment requirements to achieve the set objectives.

- Telecom Regulatory Authority of India (TRAI) was given independent powers to act as a price fixer and regulator of licensing issues.

- A separate Telecom Dispute Settlement and Appellate Tribunal (TDSAT), was formed to adjudicate any dispute between the service providers, licensor and the user groups.

- Tariff rebalancing measures are taken to make communication affordable to all. This decision is taken to increase the volume of traffic and also the revenues.

- Opening National long Distance Service (NLDS) and International Long Distance Service (ILDS) to private players.
Creating a provision of Universal Service Fund (USF) under the Universal service Obligation (USO) for all the service providers to enable them to meet high costs of providing services to remote / hilly rural areas.

Implementing Unified Licensing System, whereby a service provider in the Telecom Sector, is permitted to provide a variety of services with a single license.

The NTP 1999 is clear in its objectives, comparing to NTP 1994. Built on these objectives is the phenomenal growth, the Indian Telecom Sector is witnessing today. The major achievements of NTP 1999 are:

- In November 2003, Unified Access Licensing is implemented with a conversion of 27 out of 31 licenses issued in the basic services, by adding the country into 23 Service Areas consisting of 19 Telecom Circle Service / Metro Service Areas for providing Unified Access Services (UAS).
- The Universal Service Fund of Rs.200 crore is distributed in 2003, for providing additional VPTs (Village Public Telephones) and also to improve the quality of service of the existing VPTs in rural and remote areas.

4.4 INDIAN TELECOM INDUSTRY: A COMPETITIVE ANALYSIS

The Indian Telecom Industry of the 21st century is witnessing competition due to liberalization, privatization and demopolization initiatives taken by the Government of India. While liberalization sowed the seeds for competition, it was privatization followed by disinvestment and demopolisation that led to a competitive environment in the sector.

Apart from the PSU (Public Sector Unit) service providers, licenses were given to several private players to provide a variety of communication services to
the people. Hence the monopoly in the sector is broken and the users are now given with a wide variety to choose in almost all the services starting from the basic voice services, value-added services to data and satellite services.

With the major policy governance as regards the pricing, spectrum usage, mobility, entry legislations and other licensing issues still at the hands of the government regulatory body, the competitive environment in the industry needs to be analyzed to have a clear understanding of the factors influencing the operations of the players.

In this section, the micro and macro environmental factors are analysed by the application of PEST analysis and Micael Porter’s Five Forces Competitive Advantage Model.

4.4.1 PEST Analysis


The PEST analysis is primarily a tool used to analyse the business environment and to understand the market growth or decline. PEST template encourages proactive thinking rather than relying on habitual or instinctive reactions. PEST analysis focuses on the understanding of each of the following four factors, viz.,

\[
\begin{align*}
P & \quad \text{Political Environment} \\
E & \quad \text{Economic Environment} \\
S & \quad \text{Social Environment} \\
T & \quad \text{Technological Environment}
\end{align*}
\]
**Analysis of Political Environment:** The political environment of the business, namely the government regulations and legal issues, which govern the operations of the firm or the industry are analyzed under this template. These include the ecological issues, current legislation, Government and trading policies, funding, grants and initiatives, and so on that are prevalent at a particular point of time. With reference to the Telecom industry, the analysis is on the TRAI regulatory and licensing procedures including tariff determination, spectrum allocation, and other policy issues as imposed and administered by the Government regulatory body from time to time.

**Analysis of Economic Environment:** Factors like the purchasing power of the potential customers, the demand and supply factors that affect the firms’ operations, the consumer surplus concept, the cost of capital of the firms operating are some of the micro economic issues analyzed under this heading. Macro issues like the impact of economic growth, interest rates, exchange rates, inflation rates etc are also analyzed with respect to the firm. In the Telecom industry, these may include demand for and supply of telecom sectors by various user groups, economic growth of the IT sector and its impact on the Telecom sector and so on.

**Analysis of Social Environment:** This includes the demographic and cultural aspects of the market in context. Factors like the demographic and psychographic profile of the customers, the groups that influence them in their purchase decisions etc are analyzed under this section. With reference to the Telecom Industry, the social analysis deals with the analysis of user profiles – both demographic and personality.

**Analysis of Technological Environment:** This concerns the technological factors that influence the operations of the business. Factors like R & D activity, automation, adoption of new technology for hard / soft processes within business etc are analyzed under this head. Variables like rate of change of technology and operational feasibilities also form an important part of this analysis. As regards the telecom industry, this deals with analyzing the technological changes and its
significant impact on the industry, since the industry is primarily categorized as a high-tech industry.

Thus PEST analysis enables better understanding of the present position and hence provides inputs for analyzing the future potential and directions for a business. PEST can be effectively used for marketing and business development and decision-making.

The scan of the Telecom Environment of India provides the following insights which enabled the researcher to understand the basic micro and macro environmental factors that influence the operations of the industry on a whole. The various factors that influence the telecom industry of India are categorized under the four heads of the PEST and summarized as under:

Summary of PEST analysis on Indian Telecom Industry

Political Factors

The political factors that influence the operations of the telecom players in India are:

- **Liberalized FDI**: For mobilizing Foreign Direct Investment (FDI) into the sector, the cap on investment holding is increased from 49% to 74%, this is a welcome move especially for private players, who depend on foreign capital.

- **Tariff Policy**: Tariff is determined by the government body and due to the tariff re-balancing measures adopted by the government; the Indian voice line users are charged the lowest call-rate in the world, this is promising wider avenues for development as the economy primarily comprises of low and middle income groups.

- **Licensing Policy**: Stringent licensing procedure adopted by TRAI, the government regulatory body, has led to restricting the number of
operators in the sector. The licensing policies act as an entry barrier for new entrants aspiring to venture into the sector.

- **Spectrum Allocation:** The limitations on spectrum sharing and policies pertaining revenue sharing are hampering the smooth flow of activities for service providers mainly the basic and internet service providers. The limited resource availability is acting as a barrier to entry.

**Economic Factors**

The economical factors influencing the industry are as follows:

- **Growth of Service Industry:** The growth of the service sector, especially IT and its consequent impact on the related sectors like Business Process Outsourcing (BPO) is promising a huge growth potential for the Telecom Sector, since telecom forms the life blood for operations of these sectors.

- **Favorable investment climate:** The decline in interest in favouring the investment climate to boom. With a promising all-round growth in the telecom sector, investors see it highly lucrative to invest in the sector.

- **Demand-Supply Gap:** Due to availability of telephone on demand, the demand-supply gap is getting narrowed over the period from 2000-2004.

- **Increased Disposable Income:** The booming IT sector has created high-paying jobs, due to which the consumers are left with higher disposable income.

- **Earning Sensitivity:** 16% of the villages are still unconnected through communication links, which promises a huge market potential for the high growth telecom market. But, the earning sensitivity issues pertaining to providing village telephones restricts the private players from actively participating in linking the villages through communication network.
Social Factors

The social factors influencing the industry are as follows:

- **Transforming lifestyles**: Due to demopolisation and privatization, there is transformation in the lifestyle of the people, which is moving westwards, as a result there is an increasing demand for a developed urban communication system, especially personal communication systems like mobile phones.

- **Changing Demographic Combination**: There is an increase in middle age group (30-40) in the population, which is decision-making population. This encourages the private players, since the group primarily comprises of innovators, achievers and makers.

- **Information revolution**: The IT and media boom is delivering information to the consumers at their doorsteps, due to which the consumers are adequately enlightened as regards the products and the competition.

- **Cultural Values**: India is being basically perceived as a country bound by family values. Generally, it is stated that the share of fixed-line phones will not be eaten up by the mobile phones in the long-run, unlike in developed economies of the west, where fixed-line users migrate to mobile phones.

Technological Factors

The technological factors influencing the industry are as follows:

- **Capital Intensive**: Telecom is a high capital and technology intensive sector. Huge investments are pumped into technology for providing and updating a variety of basic and value-added services. The players are required to keep pace with the developments in the
technology for gaining competitive edge. The very fact that the industry is technology intensive acts as an entry barrier.

- **Return on Investments (ROI) concerns**: The ROI on technology investments is a matter of concern for the telecom players because the technology innovations in any form have a very short life. So players operating on high economies of scale gain in the market, while others succumb to M&A (Mergers and Acquisition) motives.

**Impact of PEST on Indian Telecom Industry**

The Indian Telecom Industry post-liberalization is experiencing transformation on all fronts. In the political front the policies framed by the government regulatory body are conducive to development of telecom network of the country. In terms of licensing and other regulatory issues, a more transparent approach from the part of the regulator is expected to reap huge benefits for the development of communication infrastructure in the country.

As regards the economic issues confronting the telecom sector, the liberalized FDI policy has spurred the investment inflow and the existence of demand-supply gap throws a huge potential and favourable investment opportunities are luring foreign investors to venture into the telecom market.

The surge in incomes and employment levels and improving standard of living have changed the perceptions of the people, who have started looking at telecommunication services as an essential commodity for better living. This has created a huge demand for telephones especially the personal phones.

With respect to technological issues, the industry is catching up with the changes taking place in the rest of the world at a fast pace as a result innovations have a very short life. The investors are thus subjected to earning sensitivity and ROI issues. Due to highly favourable market condition and a huge growth potential posed by the sector, more and more investors are venturing into the telecom market, since it promises a long-term sustainability.
On the whole, there is an overall favourable climate as far as the political, economical, social and technological environment is concerned, despite certain challenges posed by the regulatory policies and ROI issues.

4.4.2 Michael Porter’s Five Forces Model

The five forces model is widely accepted as a yardstick for measuring the industry profitability. It analyzes the various forces influencing the industry’s competitive environment. This is a macro model concentrating on the external forces like rivalry between firms, bargaining power of the buyer, bargaining power of the supplier, availability of substitutes and entry barriers. In order to perform this analysis, the competitive forces in the industry need to be thoroughly understood, the attractiveness of and growth opportunities within, a new industry need to be assessed and the effective strategies to raise the profitability, power and competitive position in an industry need to be developed accordingly.

Following is the detailed description on the components of the Porter’s Model.

**Bargaining power of the buyers:** Buyers/customers are a moderate force in the industry. By virtue of the market becoming customer centric, the buyers have bargaining capacity and may demand better product features for the same price. Thus the buyers’ behaviour and their bargaining capacity impact the profitability of a firm. Their behaviour and power is dependent on the availability of alternatives, market awareness, preferences and so on.

**Rivalry between Firms:** Rivalry among competitors in the industry is powerful. Competitors may adopt under cutting and bring down the industry. Hence the rivalry between firms affects the industry to a major extent. This factor is dependent on price wars, corporate on price wars, corporate image, adoption of new technology, value added services, and so on.
Bargaining power of Suppliers: Suppliers are again a moderate force in the industry. But if the supplier is a monopoly, then his powers know no bound. This is dependent on the level of switching cost and the terms and conditions laid down by the suppliers.

Availability of Substitutes: A substitute product is a product similar to the relevant product but is not identical to it. Substitute products are a very weak force in the industry. Substitute products restrict industry profitability by limiting the selling price companies in the industry can charge. In the Telecom industry, this is determined by availability of very close substitutes and low customer loyalty.

Entry Barriers: New entrants are potential competitors. New entrants are a weak force in the industry. The lesser the entry barriers, easier it is for new companies to enter the industry and hence, greater the competition in the industry. New entrants will often attempt to break into the industry with low prices, innovative products, or new features and benefits. When the barriers are strong, the threat of new entrants is low.

Applicability of Porter’s Competitive Model to Indian Telecom Industry

Thanks to privatization and subsequent restructuring of the economy, the entry of private players in the sector, has made the environment get transformed from its previous monopoly state to its present competitive state. All the parameters of the five forces model see their due presence in the Indian Telecom Scenario. An analysis performed on the competitive scenario of the sector reveals adequately and precisely the relevance and adaptability to present a picture of the Indian Telecom Industry of today.

The model analyzes the competitive environment in the Telecom Industry of India in Figure:
**ENTRY BARRIERS**
- Pricing
- Earning Sensitivity Issues
- Consolidation
- Capital – Intensive
- Technology Investments
- Licensing & Operating Regulations

**SUPPLIER POWER**
- Spectrum Issues
- Infrastructure Issues
- Monopoly Supplier
- High Switching Cost
- Licensing Issues
- Fixed Pricing

**RIVALRY BETWEEN FIRMS**
- Price Wars
- Quick Adapters
- Economies of Scale
- Differentiated Services
- Disputes – Legal / Operational
- Betting on Technology
- Corporate Image

**BUYER POWER**
- Availability of alternatives
- Low Switching Costs
- Market Awareness
- Standard of Living

**AVAILABILITY OF SUBSTITUTES**
- Close substitutes
- Undifferentiated Pricing
- Differentiated Services
- Substitute Performance
- Low-loyalty levels
- VAS Preferences

Figure 4.1 Michael Porter’s Five Forces Model
Summary of the Five-Forces impacting Indian Telecom Industry

1. **Buyer Power:** There are several factors leading to increase in the buyer bargaining power in the telecom industry. As a result of privatization and competition, the buyers are provided a variety of alternatives to choose from, which was unavailable during the pre-privatization period. Due to falling prices the switching costs are reduced and the development of IT and increasing incomes has resulted in change in the standard of living of the consumers.

2. **Rivalry between firms:** As a result of increasing competition, there are stiff price wars and innovations have a very short life. The firms operating on economies of scale enjoy a competitive advantage with respect to their earning sensitivity. Another form of rivalry is the legal and operational disputes that arise between firms as a way to capture the market. There are a good number of players who have their corporate image working to their advantage.

3. **Supplier Power:** The supplier comes in the form of government regulator, which has impact on the operations of the players. The spectrum sharing and infrastructure issues are governed by the regulatory body, which is the monopoly supplier to the telecom industry. As regards the instruments, there are a few suppliers, and the switching cost is very high. The suppliers follow a uniform pricing structure and it is fixed pricing in the case of government supplier.

4. **Availability of Substitutes:** There is availability of close substitutes, since there is no differentiation in terms of the basic services delivered to the customers. The differentiation comes in the form of value added services. Since VAS forms the major differentiator, the players attract the customers of other service providers; hence there are very low loyalty levels. Due to increasing market awareness, the customer preferences towards value added services have also increased.
5. **Entry Barriers:** The entry barriers are in the form of earning sensitivity issues and technology investments, which make the industry feasible to operate only for cash-rich companies. The licensing and operating regulations adopted by the government also form the entry barriers. The picture of consolidation and capital intensive nature of the industry are the other factors that function as entry barriers for the new aspirants to the industry.

The competitive analysis of the Indian telecom industry and the exhaustive insights derived through the application of PEST templates and Porter’s Five Forces Models, thus throws light on the external factors that influence the operations of service providers in the telecom sector.

4.5 **INDIAN MOBILE SECTOR**

Mobile communications systems revolutionized the way people communicate, joining together communications and mobility. A long way in a remarkably short time has been achieved in the history of wireless. Evolution of wireless access technologies is about to reach its fourth generation (4G). Looking past, wireless access technologies have followed different evolutionary paths aimed at unified target: performance and efficiency in high mobile environment. The first generation (1G) has fulfilled the basic mobile voice, while the second generation (2G) has introduced capacity and coverage. This is followed by the third generation (3G), which has quest for data at higher speeds to open the gates for truly “mobile broadband” experience, which will be further realized by the fourth generation (4G).

The Fourth generation (4G) will provide access to wide range of telecommunication services, including advanced mobile services, supported by mobile and fixed networks, which are increasingly packet based, along with a support for low to high mobility applications and wide range of data rates, in accordance with service demands in multiuser environment.
The last few years have witnessed a phenomenal growth in the wireless industry, both in terms of mobile technology and its subscribers. There has been a clear shift from fixed to mobile cellular telephony, especially since the turn of the century. By the end of 2010, there were over four times more mobile cellular subscriptions than fixed telephone lines.

Both the mobile network operators and vendors have felt the importance of efficient networks with equally efficient design.

Driven by wireless revolution, the Indian telecommunications industry is one of the fastest growing in the world. Government policies and regulatory framework implemented by Telecom Regulatory Authority of India (TRAI) have provided a conducive environment for service providers. This has made the sector more competitive, while enhancing the accessibility of telecommunication services at affordable tariffs to the consumers.

According to TRAI's report 'Telecom Sector in India: A Decadal Profile', the tele-density has increased from 4.3 in March 2002 to 78.1 in February 2012, wherein the rural areas registered an increase from 1.2 in March 2002 to 38.5 in February 2012. Also, the share of telecommunication services (excluding postal and miscellaneous services), as per cent of the total gross domestic product (GDP), has increased from 0.96 in 2000-01 to 3.78 in 2009-10.

According to the same report, international comparisons (among 222 countries) show that India has the second largest number of telephone subscribers in the world accounting for 12 per cent of the world's total telephone subscribers.

Key Statistics

- In its recent statement issued, TRAI has revealed that the country's mobile subscriber base has reached 951.3 million wherein the operators added 8 million subscribers in March 2012.
The overall tele-density in India reached 78.66. The urban tele-density was recorded to be 169.55, while rural tele-density stood at 39.22.

Total broadband subscriber base increased from 13.54 million in February 2012 to 13.79 million in March 2012, registering a growth of 1.86 per cent.

4.6 KEY TRENDS IN INDIAN TELECOM

- The wireless segment in India is much larger than the wire line segment and is growing steadily due to the convenience and utility it offers.
- Wireless services hold a major market share of 94.6 per cent.
- The subscriber base of the wire line segment is decreasing due to its limited usage.
- Rural markets are expected to be the next key growth drivers for the Indian telecom sector, given rural India’s growing population and disposable income.
- The subscriber base in the rural market has improved significantly in 2009–2010, with rural tele-density at 26.4 per cent as of June 2010.
- By 2012, the rural subscriber base is expected to account for nearly half of the total subscriber base, thereby fuelling sector growth.
- Bharti Airtel has the largest market share in the GSM segment. As of June 2011, Bharti accounted for 25.9 per cent of the GSM market, followed by Vodafone, with a 20.7 per cent market share.
- Private players accounted for approximately 86.4 per cent, while public sector operators (BSNL and MTNL) accounted for the remaining share (13.6 per cent).
• Reliance Communications dominates the Indian CDMA mobile services segment with a market share of 52.4 per cent as of June 2011.

• India is expected to feature among the top 10 broadband markets by 2013.

• The total number of Internet subscribers grew from 14.1 million subscribers in June 2010 to 16.7 million subscribers in June 2011.

• BSNL is the biggest player in this market with 9.7 million subscribers, followed by MTNL, Bharti Airtel, Reliance and Hathway Cable & Datacom.

• Digital subscriber line (DSL) is the most preferred technology among service providers to provide broadband services. DSL constitutes 86.6 per cent of total broadband subscribers.

• In India, growth in the subscriber base, which contributes to healthy revenue growth, mitigates the reduction in average revenue per user (ARPU). In addition, high MOUs compensate for declining tariffs.

• Operators are reducing operating costs and hiving off infrastructure elements such as towers into separate entities, thus inviting significant investments.

• Passive infrastructure sharing has benefitted the Indian mobile industry and its customers, reducing the cost burden of each operator and speeding the rollout of mobile services.

• In recent years, initiatives such as network cost optimisation, outsourcing of non-core activities, as well as low-cost business models have been focus areas.

• Every telecom service provider is looking beyond basic voice services by offering a wide range of bundled offerings. For example, nearly all leading operators, including incumbents, are in the testing
phase to launch commercial IPTV services. Indian operators are still new in terms of offering —using existing network infrastructure for data, voice, video and basic communication services.

- Consumers can get all these services from the same telecom operator, and enterprises can also access virtual private networks (VPNs), video-conferencing, enterprise solutions, mobility and fixed telephony.

4.7 DETAILS OF MOBILE SERVICE PROVIDERS CONSIDERED FOR THE STUDY

This section gives the details of the mobile service providers used for the study.

4.7.1 Bharti Airtel

Bharti Airtel Limited, commonly known as Airtel, is an Indian Telecommunications company that operates in 20 countries across South Asia, Africa and the Channel Islands. It operates a GSM network in all countries, providing 2G, 3G and 4G services depending upon the country of operation. Airtel is the world's third-largest mobile telecommunications company with over 261 million subscribers across 20 countries as of August 2012. It is the largest cellular service provider in India, with 200 million subscribers as of August 2012. Airtel is the third largest in-country mobile operator by subscriber base, behind China Mobile and China Unicom.

Airtel is the largest provider of mobile telephony and second largest provider of fixed telephony in India, and is also a provider of broadband and subscription television services. It offers its telecom services under the airtel brand, and is headed by Sunil Bharti Mittal. Bharti Airtel is the first Indian telecom service provider to achieve Cisco Gold Certification. It also acts as a carrier for national and international long distance communication services. The company has a submarine
It is known for being the first mobile phone company in the world to outsource all of its business operations except marketing, sales and finance. Its network—base stations, microwave links, etc.—is maintained by Ericsson, Nokia Siemens Network and Huawei, business support is provided by IBM and transmission towers are maintained by another company (Bharti Infratel Ltd. in India). On May 2012, Bharti Airtel awarded the three year contract to Alcatel-Lucent for setting up an Internet Protocol across the country. This would help consumers access internet at faster speed and high quality internet browsing on mobile handsets.

4.7.2 Aircel

Aircel group is an Indian mobile network operator headquartered in Chennai, that provides wireless voice, messaging and data services in India. It is a joint venture between Maxis Communications Berhad of Malaysia and Sindya Securities & Investments Private Limited, whose current shareholders are the Reddy family of Apollo Hospitals Group of India, with Maxis Communications holding a majority stake of 74%. Aircel commenced operations in 1999 and today the leading mobile operator in Tamil Nadu, Assam and North-East.

It is India’s fifth largest GSM mobile service provider & seventh largest mobile service provider (both GSM and CDMA) with a subscriber base of over 51.83 million, as of January 31, 2011. It has a market share of 6.72% among the GSM operators in the country. Additionally, Aircel has also obtained permission from Department of Telecommunications (DoT) to provide International Long Distance (ILD) and National Long Distance (NLD) telephony services. It also has the largest service in Tamil Nadu.
4.7.3 Idea Cellular

In 2000, Tata Cellular was a company providing mobile services in Andhra Pradesh. When Birla-AT&T brought Maharashtra and Gujarat to the table, the merger of these two entities was a reality. Thus Birla-Tata-AT&T, popularly known as Batata, was born and was later rebranded as IDEA.

Then Idea set sights on RPG’s operations in Madhya Pradesh which was successfully acquired, helping Batata have a million subscribers, and the licence to be the fourth operator in Delhi was clinched. In 2004, Idea (the company had by then been rechristened) bought over the Escorts group’s Escotel gaining Haryana, Uttar Pradesh (West) and Kerala — and licences for three more — UP (East), Rajasthan and Himachal Pradesh. By the end of that year, four million Indians were on the company’s network. In 2005, AT&T sold its investment in Idea, and the year after Tatas also bid good bye to pursue an independent telecom business. And Idea was left only with one promoter, the AV Birla group. Rs 2,700 crore adding Punjab and Karnataka circles. Modi’s joint venture partner, Telekom Malaysia, invested Rs 7,000 crore for a 14.99% stake in Idea. Just around then, Idea’s subsidiary, Aditya Birla Telecom sold a 20% stake to US-based Providence Equity Partners for over Rs 2,0000 crore.

4.7.4 Vodafone

Vodafone India, formerly Vodafone Essar and Hutchison Essar, is the second largest mobile network operator in India after Airtel. It is based in Mumbai, Maharashtra and which operates nationally. It has approximately 146.84 million customers as of November 2011.

On July 2011, Vodafone Group agreed terms for the buy-out of its partner Essar from its Indian mobile phone business. The UK firm paid $5.46 billion to its Indian counterpart to take Essar out of its 33% stake in the Indian subsidiary. It will leave Vodafone owning 74% of the Indian business, while the other 26% will be owned by Indian investors, in compliance with Indian law. On 11 February, 2007,
Vodafone agreed to acquire the controlling interest of 67% held by Li Ka Shing Holdings in Hutch-Essar for US$11.1 billion, pipping Reliance Communications, Hinduja Group, and Essar Group, which is the owner of the remaining 33%. The whole company was valued at USD 18.8 billion. The transaction closed on 8 May, 2007. It offers both prepaid and postpaid GSM cellular phone coverage throughout India with good presence in the metros.

Vodafone India provides 2.75G services based on 900 MHz and 1800 MHz digital GSM technology. Vodafone India launched 3G services in the country in the January-March quarter of 2011 and plans to spend up to $500 million within two years on its 3G networks.

4.7.5 BSNL

Bharat Sanchar Nigam Limited (abbreviated BSNL) is an Indian state-owned telecommunications company headquartered in New Delhi, India. It is the largest provider of fixed telephony and fourth largest mobile telephony provider in India, and is also a provider of broadband services. However, in recent years the company's revenue and market share plunged into heavy losses due to intense competition in Indian telecommunications sector.

BSNL is India's oldest and largest communication service provider (CSP). It had a customer base of 95 million as of June 2011. It has footprints throughout India except for the metropolitan cities of Mumbai and New Delhi, which are managed by Mahanagar Telephone Nigam (MTNL).

4.7.6 Reliance Communications

Reliance Communications Ltd. (commonly called RCOM) is an Indian broadband and telecommunications company headquartered in Navi Mumbai, India. RCOM is the world's 15th largest mobile phone operator with over 150 million subscribers and India's 2nd largest telecom operator in India, only after Bharti Airtel. Established on 2004, a subsidiary of the Reliance Group. The company has five segments: Wireless segment includes wireless operations of the company;
broadband segment includes broadband operations of the company; Global segment include national long distance and international long distance operations of the company and the wholesale operations of its subsidiaries; Investment segment includes investment activities of the Group companies, and Other segment consists of the customer care activities and direct-to-home (DTH) activities.

4.8 SUMMARY

The chapter provided an overview on the Indian telecom industry and analyses the status of the industry in the pre-privatization and post-privatization period. It then examined the competitive environment of India, performing PEST analysis and Porter’s Five Forces competitive environment analysis. A section on the study area is also presented.